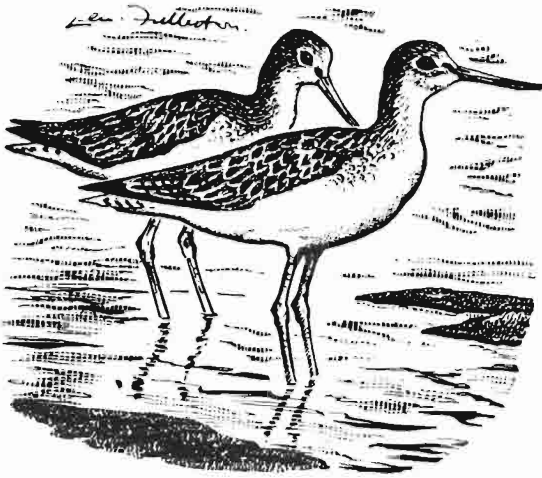


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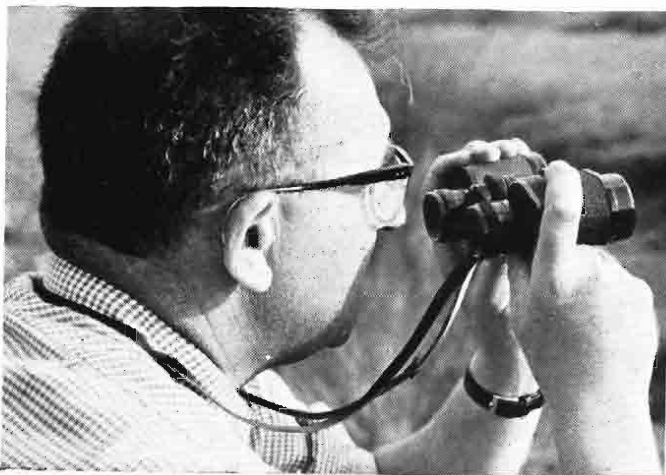
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Vol. 3 No. 1

Spring 1964

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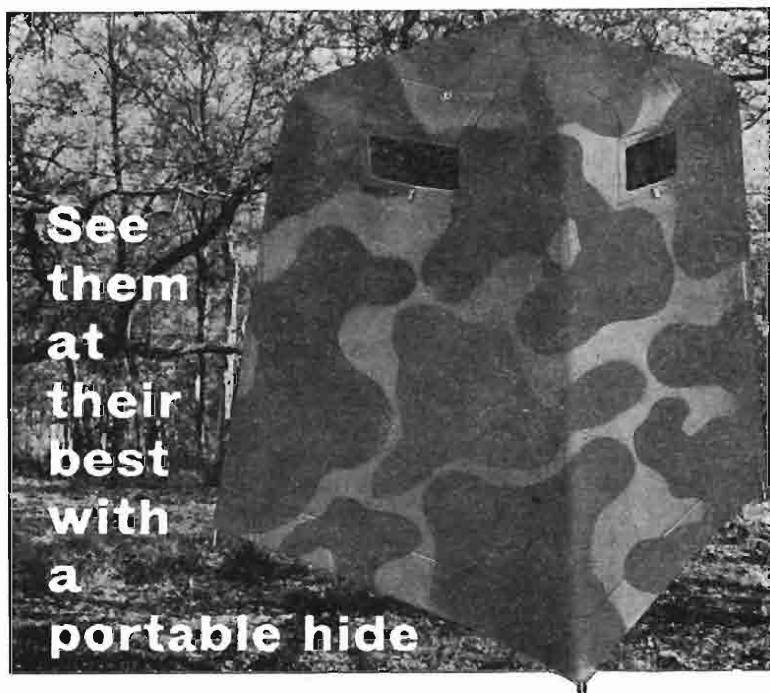
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Spring 1964

Edited by A. T. MACMILLAN with the assistance of D. G. ANDREW and T. C. SMOUR. Business Editor, T. C. SMOUR. Cover Design (Greenshank) by LEN FULLERTON. Published quarterly.

Editorial

One thousand pages. As we embark upon Volume 3, with more than 1000 pages already in print, it is gratifying to see *Scottish Birds* spreading slowly along our bookshelves. Placed beside the 5'9" required for *The Scottish Naturalist* and its transient relative *The Annals of Scottish Natural History* we may still seem rather slender, but we have at least the feeling that a beginning has been made; we need no longer feel diffident at our lack of a respectable past, now that we have two previous volumes, covering 5½ years, to which we can refer.

By way of celebration we are making some minor typographical changes, within the range of typefaces available to us, and we trust that these will generally be considered improvements.

Index to Volume 2. With this issue an Index to Volume 2 is being sent to subscribers. Although less detailed than we had hoped to make it we trust that it will nevertheless prove useful. Those who intend having Volume 2 bound will find details of the arrangements on the cover of the Index, and are asked to send off the parts and their remittances to the binders as soon as possible.

The Handbook of British Mammals. Most birdwatchers have a general interest in other branches of natural history. For too long, however, mammals have been relatively neglected by the amateur naturalist; other things being easier to observe, he has tended towards botany, butterflies and birds. It is all too easy to think of mice and voles simply as food for the appropriate bird; the biologist knows that there is more than this to ecology. One excuse for concentration on birds and neglect of mammals lies in the number of admirable identification books and standard works available to the birdwatcher, and the lack of any counterpart for the mammal watcher. Now at last this gap has been filled by *The Handbook of British Mammals* edited by H. N. Southern for the Mammal Society of the British Isles. This fine volume has

been keenly awaited for a long time and will be a great stimulus to people to find out more about our British mammals. It may even encourage ornithologists more often to consider their birds as part of a wider fauna. Perhaps it is a sign of the times that the book is being widely advertised in ornithological journals.

Royal Scottish Museum. We note with pleasure that the Royal Scottish Museum has at last appointed a new Assistant Keeper in charge of the ornithological section of the Department of Natural History. He is Ian Lyster, a graduate of Sheffield University. The museum contains important ornithological collections presented by P. A. Clancey, the late Arthur Whitaker, and others; it is good to know that steps are being taken to get these properly catalogued. We very much hope that this new appointment will lead to the resumption of the close ties between the R.S.M. and field ornithologists in Scotland which were a marked feature in the days of the late Dr Eagle Clarke.

R.S.P.B. Shetland Representative. The Royal Society for the Protection of Birds has appointed Robert J. Tulloch as its Shetland Representative. During the past few years there have been several prosecutions of egg collectors operating in Shetland, and this move will strengthen the hand of the R.S.P.B. against the threat to some of our rarer breeding birds. S.O.C. members wishing to spend a birdwatching holiday in Shetland should contact Bobby Tulloch for advice and assistance. His address is Reafirth, Mid Yell, Shetland (telephone: Mid Yell 19). Members visiting Orkney may like to be reminded that the R.S.P.B. Representative there is Edward Balfour, Isbister House, Rendall, Orkney (telephone: Fins-town 275).

New Year resolution for contributors. I will send off my notes in time to be in the editors' hands by the last day of March, June, September and December. I will not send them even one day later, let alone several months late. Everyone should be happy.

Current literature. Some recently published papers with more than a passing Scottish interest are noted below. The summaries attempt to indicate very briefly the subjects covered; they claim to do no more than that.

Factors influencing clutch-size and chick growth in the North Atlantic Gannet *Sula bassana*. J. B. Nelson, 1964. *Ibis* 106: 63-77. Consideration as to why the Gannet never lays more than one egg though it can readily feed two chicks.

The Golden Eagle in relation to its food supply. L. H.

Brown & A. Watson, 1964. *Ibis* 106: 78-100. The "home range" of pairs of Golden Eagles in Scotland is such that there is almost always far more food, especially carrion, than is needed.

Dawn ascent and re-orientation of Scandinavian thrushes (*Turdus* spp.) migrating at night over the northeastern Atlantic Ocean. M. T. Myres, 1964. *Ibis* 106: 7-51. Based on radar observations in Shetland.

Herd composition and dispersion in the Whooper Swan. R. Hewson, 1964. *Brit. Birds* 57: 26-31. Whooper Swans at Loch Park, Banffshire. R. Hewson, 1963. *Bird Study* 10: 203-210.

Operation Osprey, 1963: G. Waterston, 1963. *Bird Notes* 30: 275-278.

Current research on Red Grouse in Scotland

DAVID JENKINS, ADAM WATSON and G. R. MILLER

Nature Conservancy Unit of Grouse and Moorland Ecology, Natural History Department, Marischal College, University of Aberdeen

Introduction

Work on Red Grouse was started in Glen Esk in 1956, forty-five years after the Committee of Inquiry on Grouse Disease published its two classic volumes on *The Grouse in Health and in Disease*. No scientific field work on Red Grouse has been attempted in the interval, though Mackenzie (1952) and others have documented fluctuations in bag records, and a great deal of work has been undertaken on other species of grouse in various countries, especially in Scandinavia and North America. Much of this work is discussed by Lack (1954, especially ch. 15 and ch. 19), who tentatively concludes (p. 224) that periodic declines of Red Grouse may be basically due to food shortage, perhaps modified by parasitic infection. [In an earlier paper, Jenkins (1963) partly misunderstood Lack (p. 163, para. 2) on this point, as comments on another species had been included in the same paragraph (D. Lack *in litt.*.)]

The heyday of Red Grouse shooting in Scotland was reached between the two world wars, and subsequently bags have decreased in many areas. In consequence, Professor V. C. Wynne-Edwards, on behalf of Aberdeen University, was requested to organise in his Natural History Department an enquiry into the decline of Red Grouse, to be financed by the Scottish Landowners' Federation. The work was planned to last three years, in Glen Esk, Angus, through the courtesy of the Earl of Dalhousie. The project started in 1956, and the unit now consists of two zoologists, a botanist, and two field assistants.

Thus the research is a co-operative effort, and this paper reports the work of the whole team.

At the end of the initial three-year period, the Nature Conservancy agreed to finance the project. It is still directed by Professor Wynne-Edwards, and is administered as a research unit in Aberdeen University. Scientists in the unit are privileged with the status of members of the University staff, and some research students from the Natural History Department work with them on various related projects.

In 1961 the main study moved from Glen Esk to Deeside, where a study area and offices were acquired at Blackhall, Banchory, Kincardineshire. The new study area is Kerloch moor, which is rented from Glen Dye estate.

Aims and methods

The aims of the work are two-fold:

- (1) to understand the processes controlling fluctuations in the numbers of a species which is particularly suitable for a population study (it is diurnal, resident, easy to see, a herbivore with a very simple diet, and a fairly typical representative of a group of birds claimed to show regular cyclic fluctuations of numbers in other habitats);
- (2) to determine the reasons for the widespread decline in Red Grouse in the last two decades, and as a result make recommendations for the conservation (*i.e.* management) of an important wildlife resource and of the important habitat in which the birds live.

The research has hinged on regular counts of all the birds living on selected areas. Dogs are used to find and flush the grouse, and the method is described in detail by Jenkins, Watson & Miller (1963). In the five years when we lived in Angus we had ten study areas, of which four were in Glen Esk and the others in contrasting places up to 100 miles away. Most of these areas were about 300 acres, but the two main ones, High (2000 ft) and Low (700 ft), near Tarfside in Glen Esk, were both about 1000 acres. On these two main areas grouse were counted regularly from August to April, and we searched for nests and young in the summer. Many dead birds were found (fig. 1). Grouse were marked on the Low area, using plastic back tabs. Thus we obtained information on clutch size and breeding, as well as on survival and changes in numbers during the rest of the year. The subsidiary study areas were visited in early winter and in spring, and also in July and August to get information on the number of young reared.

Most results came from the Low area, and those from the other areas were similar, differing only in details. The information given in this paper refers to the Low area.

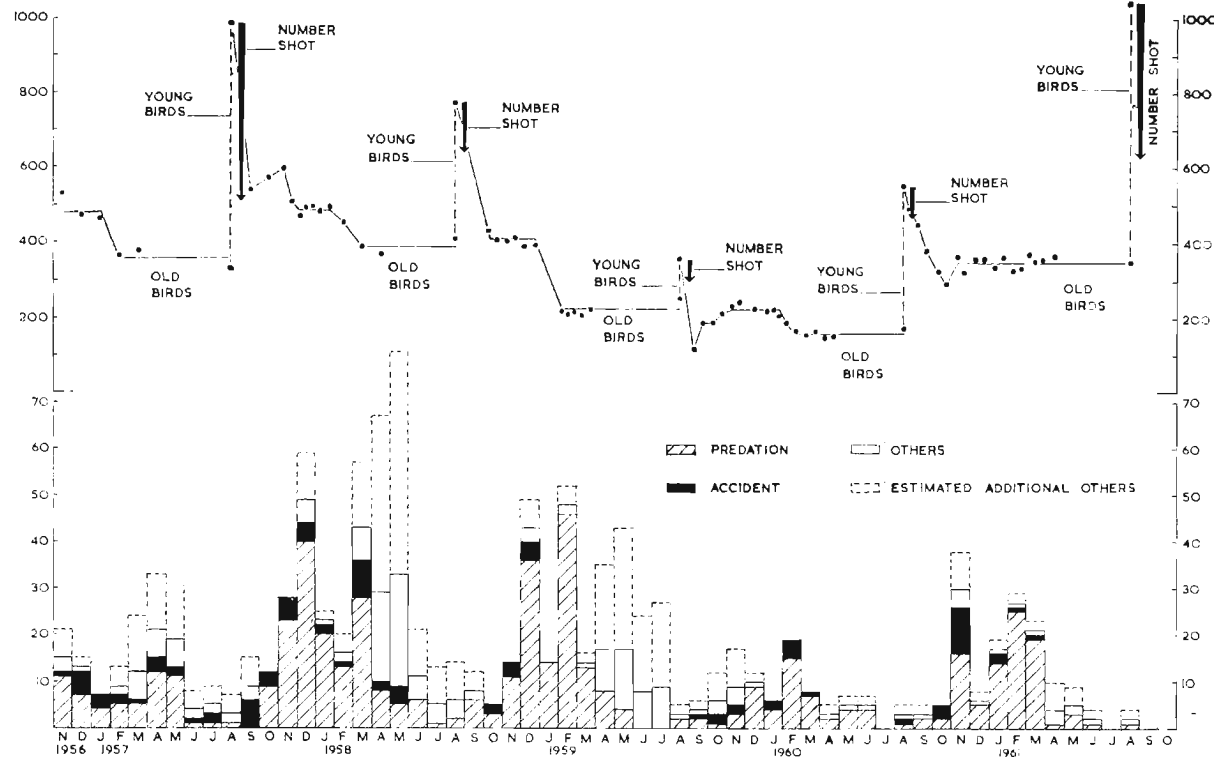


FIG. 1. Counts of live Red Grouse, and numbers found dead, on the Low study area (1100 acres) in Glen Esk, 1956-61. (We think we found nearly all grouse killed by predators or by accidents, and about a third of those dying from other causes. The histograms of "estimated additional others" provide an estimate of the casualties that were not recorded). From Jenkins, Watson & Miller 1963.

The annual cycle

Fig 1 includes a graph of all the counts done on the Low area. Grouse numbers changed from year to year, but the most important point to notice is that there was always a decrease in numbers from August to the following spring. This decrease could not be accounted for through shooting, and did not occur gradually but in abrupt stages. The plateaux in the graph represent periods when numbers did not change, and correspond with different phases of behaviour. During early August, when numbers are highest, the grouse occur in family parties. Later in August, and throughout the autumn, cock grouse begin staking claims to territories, with the result that dominant cocks drive away weaker ones. The process is usually complete by mid October, when the breeding area on the moor is divided up between territorial cocks. Hens associate with cocks at these times, but pairs may contain different hens on different mornings. Some hens also leave the breeding area at this time; and this autumn dispersal of cocks and hens leads to a fall in the resident population. Many of the dispersing grouse are killed by predators (fig. 2), and we believe that most of the others die soon from starvation.

Few territorial cocks die in winter, and the processes governing territory formation in autumn therefore also set a maximum to grouse numbers in the following spring. These processes may be delayed by severe winter weather at high altitudes, but it is important to realise that at moderate altitudes, such as at 700 feet on the Low area, spring numbers are regulated by the birds' behaviour several months earlier. At first the territorial behaviour is not strict, and is largely confined to the first hour or two after dawn on calm, bright mornings. Since the aggression of the territory owners is only intermittent at this time, some birds without territories can live on the moor during the winter, in addition to the territory owners and their hens. These extra birds are usually seen in flocks; and when the dominant cocks defend their territories the surplus birds without territories may visit grassy areas or fields roundabout. They return to the heather to feed when territorial behaviour subsides and they are permitted to feed on the territories.

During bad weather and snow, and throughout autumn and winter in the severe conditions at high altitudes, territorial behaviour disappears altogether. The birds then band together in flocks and fly to ridges and hill-tops where the wind has drifted heather clear of snow. At the end of the bad weather, usually in February, or later at high altitudes, territorial behaviour occurs again, with essentially the same pattern of territories as had been adopted earlier. However, at this stage territorial behaviour is no longer intermittent but is much more prolonged and vigorous. At the same time

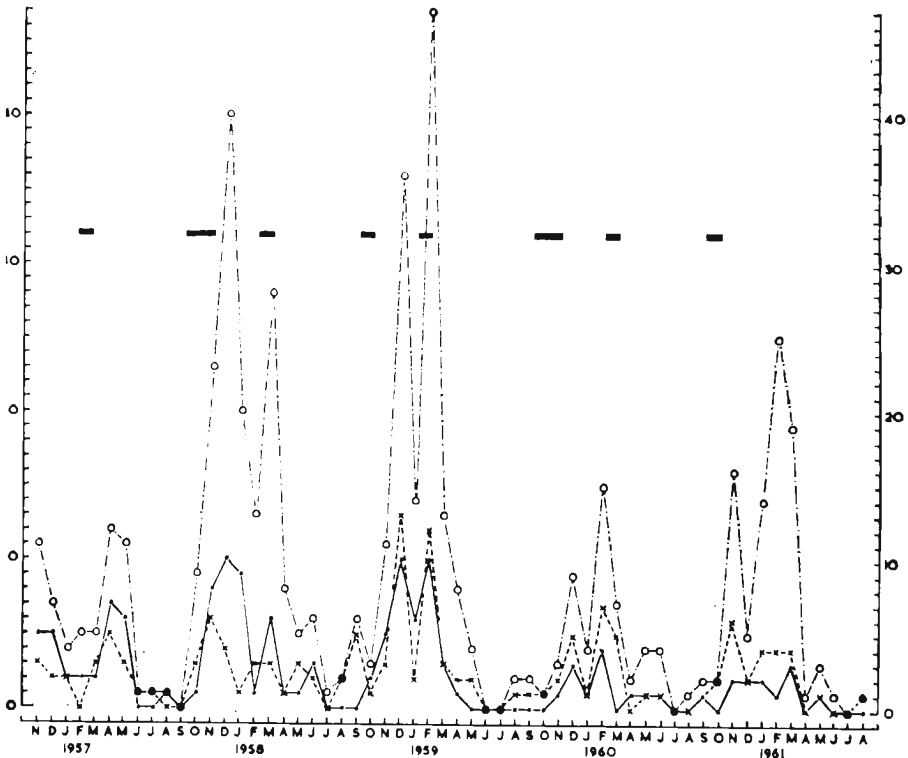


FIG. 2. Numbers of Red Grouse killed by predators on the Low area (known fox kills . — . — .; known hawk kills x - - - x; total kills, including unidentifiable ones o — . — . — o). Solid horizontal lines show times and duration of periods of dispersal (*cf.* fig. 1). From Jenkins, Watson & Miller 1964.

the pairs become permanent associations.

As a result of the vigorous daylong aggression by territorial cocks and hens in late winter and spring, most surplus non-territorial birds are no longer tolerated on the heather moor. They disappear from the heather and frequent grassy areas where they cannot feed; and they soon die, since they are vulnerable to predators or to parasitic disease concomitant with starvation.

The winter is thus characterised by two periods of dispersal. Birds leaving are mostly doomed to die, though some dispersing early may find another area that is understocked, due perhaps to heavy shooting. It is the rule, however, for most grouse moors to produce many more birds than can obtain territories, and for the shooting to under-exploit this potential

harvest. This is apparently true of most moorland areas, independent of whether the grouse stock is high or low; and dispersing grouse are therefore unlikely to find suitable unoccupied areas where they can settle. They can usually be found living in marginal grassy or boggy areas within and around the moor edge, at high as well as at low altitudes, making frequent visits to the heather to snatch a beakful of food before the local territory owner drives them off.

In years with a big surplus, starvation is obvious, because many grouse die on small areas, especially grassy places such as flushes, streambanks or bogs; these deaths are sometimes recorded as outbreaks of "grouse disease." In years with a smaller surplus in relation to the number of territory owners, most surplus birds may die on the heather in corners between territories where they find sanctuary during their transitory visits in search of food. At these times they are vulnerable to predators, and a graph of predation (fig. 2) shows characteristic peaks following the times when the grouse are known to be dispersing. This is discussed in more detail in another paper (Jenkins, Watson & Miller 1964). Most of the grouse killed by such predators as Hen Harriers and Golden Eagles are surplus, and doomed to die before the following spring anyway.

In short, Red Grouse numbers are regulated by the number of cocks successful in obtaining territories, with the surplus mostly removed by predators or starvation. Changes in grouse numbers from one spring to another are due to changes in the numbers of territory owners. The problem facing us is to discover what limits the number and size of territories.

We might conclude that a decline in spring numbers is unlikely to be due to an actual shortage of grouse, since we have been able to find surplus birds each year. The solution would then seem to lie in the quality of the moorland, and we might suppose that more birds with smaller territories will colonise a moor when the food is good in quantity or quality, and fewer birds with larger territories when the food is poor. However, if we compare changes in numbers in successive springs, we find on all our study areas that the spring numbers almost invariably increase or remain steady following a summer with good breeding, and decrease following a summer with poor breeding. These observations lead to the belief that spring numbers depend on the breeding in the previous season. These two explanations conflict, and one of our problems is to clarify this situation.

Changes from year to year

Our data on breeding show that the five years of study in Glen Esk can be divided into three "good" years and two "poor" years. In the good years, relatively many chicks were

reared, parental behaviour was good, hatching success and clutch size were high, and survival of the adults was good both in the same summer and in the previous winter. In poor years the converse was true, with few chicks reared, poor parental behaviour, smaller clutches, and so on. These series of correlations linked events occurring in summer and spring each year back to February, which was the time when the sex ratio of the breeding population was determined. In good years each cock had a mate; but in poor years only about two cocks in three had mates.

We think that these differences in sex ratio were due to the quality of the territories in February, because in springs when the heather was green all the cocks had hens, but in springs when the heather was frosted and brown only some of the cocks, with the largest territories, had hens. We suppose that whether a cock has a hen or not depends on the quality of its territory. Thus a large territory (in a "good" green heather year) would support two birds in February; and their condition and survival would be good, with good breeding subsequently. The opposite apparently holds good in poor years. Clearly we were very fortunate in our study in Glen Esk to have years with such strongly contrasting conditions rather than intermediate ones. Otherwise we might not have recorded the correlated sequence of events which has often gone unnoticed, perhaps for this reason, in other studies like ours.

Working hypotheses

These data encouraged us to formulate two working hypotheses involving predictions that could be tested. They are:

1. Variations in the winter die-back of the principal food plant, heather, will be correlated with the breeding success of grouse in the following summer.
2. Variations in the summer performance of the heather will be correlated with a subsequent change in grouse breeding numbers.

Studies over ten areas in two years since these hypotheses were formulated suggest that the first is probably correct. With a small die-back of heather in winter, grouse-breeding the next season tends to be good, and vice versa. We now believe that variations in grouse-breeding from one year to the next are usually due to differences in the the food of the old birds before the eggs are laid. The food presumably affects the birds' condition and behaviour. Experimental work on rearing grouse in captivity supplements this evidence (Jenkins, Watson & Picozzi 1964), as we have found differences in the survival of chicks reared artificially according to where the eggs come from. Differences in the survival of experimental birds parallel the

survival of the wild ones. We do not yet know whether the quality of the spring food may be important as well as the quantity.

The second hypothesis needs modifying since we have not found any consistent relation between grouse breeding numbers and the growth of heather in the previous summer. In other words, changes in the average territory sizes of grouse, which are determined in autumn, do not appear to be correlated with changes in the quantity of food available to the colonising cocks. However, the answer to this problem is by no means cut and dried. Many other variables are involved, and, in particular, variations in the quality of the food in the summer, about which we know little. It also seems likely that territory size may vary with the age, and indeed the year-group, of the owner, since older birds may sometimes take larger territories than yearlings, and since birds hatched in some years seem consistently to take larger or smaller territories than birds hatched in other years.

Experimental work

A series of experiments to elucidate these points has recently been started on the main study area near Banchory. In August 1962 and subsequently for twelve months, 14 cock grouse had territories on about 100 acres of moorland. Many of these territories were mapped, and either these same individual grouse or early replacements survived till August 1963. In summer 1963 breeding was very good on this piece of ground and in late July there were 84 full-grown birds, including a total of 57 young which could not be sexed. With the onset of territorial behaviour in August, the total grouse population declined, through dispersal, to 68 individuals. These included the original 14 male territory owners, 16 young (i.e. yearling) cocks, 25 young hens and 13 old hens. Thus 16 young birds had dispersed, and, assuming a 50:50 juvenile sex ratio, most were presumably young cocks.

The original 14 territory owners were then shot; and the moor was left quiet. About one month later, when the area had been completely recolonised and the situation had stabilised, the new territories were remapped. Sixteen cocks then had territories, including two old (over 12 months) and 14 young birds, with hens varying in number from 6 to 29. The two additional territories were tiny and squeezed in together at one end. In effect, therefore, the new colonisation over the greater part of the area was very similar to the previous occupation, and several of the territorial boundaries were nearly the same. This experiment was repeated in November 1963, with the difference, in contrast to August, that there were then no resident surplus birds on the area. No observa-

tions have been made on the results at the time of writing but any colonisers will be immigrants.

The results of the first shooting experiment are equivocal since they might be taken as suggesting (a) that the territories were adjusted to the food or suitability of the area, or alternatively (b) that the colonisation corresponded approximately to the number of young cocks that were left. Tradition could be involved as well, if the young cocks reacted to the old territories. A response to tradition should be eliminated in the second shooting experiment; but it is clear that we need to repeat the August experiment next year, if possible in a situation where the initial number of young cocks is quite different from the number of existing territories.

Possibilities for further experiments in 1964 include shooting all territory owners on two areas, and altering the heather on half of each area, leaving the other halves as controls. In one case the heather might be fertilised, while in the other it could be treated with a herbicide. Probably the breeding success on the two areas will be different. Thus these and similar experiments will help us to decide whether spring numbers depend mainly on the availability of colonisers (*i.e.* on the breeding in the previous summer), or on the suitability of the area, or on a combination of these two possibilities.

It is possible that the results may not be clear-cut, since both breeding success and territory size might sometimes be influenced by the same antecedent factor. In this case a depressing influence operating in winter may damage the food so badly that the subsequent summer growth may not be good enough to compensate for its effect. This may be the reason for the failure of the grouse population to increase in autumn on the Low area in either 1958 or 1959 (fig. 1) despite potential recruitment from breeding. In both years the winter food had been damaged, breeding was poor, and the autumn population was the same as in spring. In 1957, 1960, and 1961, the winter food was good, breeding was better, and grouse numbers were higher in autumn after breeding than in the previous spring. In these cases potential recruitment was reflected in an actual increase.

New hypothesis

It is tempting to reword hypotheses 1 and 2 as follows:

3. Variations in the winter die-back of heather will be correlated with the number of territory owners the following autumn. When there is little die-back, the number of territory owners will increase in proportion to the breeding success; when the die-back is severe, the number of territories may be restricted by the state of the heather.

This hypothesis would resolve the conflict, since we believe that poor winter food results in poor breeding (hypothesis 1),

but it implies that in good years the autumn population is regulated simply by the number of recruits available. This is an over-simplification, because we know that the birds' territorial behaviour puts a ceiling on the autumn colonisation. Good evidence for this comes from the heavy natural mortality that is observed in autumn without any change in the stable population level (fig. 1), and from the ready replacement of territory owners following the August shooting experiment. Both pieces of evidence show that other birds capable of holding territories are available as colonists in addition to those that actually obtain territories. Hence we need a qualification to the third hypothesis, namely:

3a. Even in good years there is competition for territories, and not every bird is successful in obtaining one.

The inference is that some grouse are better at obtaining territories than others, and the restriction on colonisation may thus be imposed not only by food shortage but also by exclusiveness between the birds themselves. In a poor year, when food shortage may be the primary influence, only the most dominant grouse will succeed in getting a territory. In other years more second-grade grouse will succeed, while in the very best years a high proportion of the available recruits may be successful. The quality that distinguishes one grouse from another may be its level of innate aggression, since we have found (Watson 1964) that the most aggressive birds have the biggest territories, and we know that birds with the smallest territories often fail to secure a mate and do not breed.

These ideas find some support from our data for 1959. In that year breeding was poor (fig. 1), and recruitment minimal. Nonetheless some young birds did enter the population as territory owners, and in the subsequent autumn and early winter of 1960 these birds survived very much better (76% against 46%) than birds in any of the three previous seasons (Jenkins *et al.* 1963, table 15). This suggests that colonisers in 1959 were first-grade individuals. However, there are difficulties, because the heather growth in 1959 was prolific and not reduced in quantity as might have been expected. Possibly it was poor in quality, but this is speculation.

Conclusions

Our ideas therefore are based on hypotheses which are being tested by further empirical observations and experiments. The main conclusion so far is that both periodic and prolonged decreases in Red Grouse numbers may result from declines in the suitability of the habitat. Periodic increases presumably result from an improvement which permits both better breeding and a higher level of colonisation, possibly in proportion to the habitat improvement. The main cause of

the short-term decreases recorded was winter frosting of the heather, and of long-term decreases is most likely to be a reduction in heather productivity due to mismanagement and, in particular, too much or too little burning. With regard to the actual causes of death, we conclude that predation and starvation (*i.e.* disease) merely remove the surplus. To quote Grange (1949, p. 140), "it really makes little or no difference which fate surplus individuals in a declining habitat meet... The salient point to be made is that the habitat itself has declined with respect to available natural resources until the formerly abundant population can no longer be supported within it."

We now need to obtain more detailed knowledge of changes in grouse numbers on Kerloch, to study changes in heather quantity and quality, both empirically and in association with the grouse population study, and we need to learn more about grouse behaviour, especially variations between individual grouse. We plan further experiments to test whether population size (*i.e.* the number of territory owners) can be changed by modifying the aggression of the residents.

The implication for management is clear; namely, that the habitat should be suitable for maximum colonisation by potential recruits in seasons with a good food supply. The need is not to increase the actual numbers of grouse (for example, by exterminating predators), but rather by judicious land-use always to keep the moor in a state of maximum productivity, so that as many as possible of the available grouse will colonise the area in seasons when the winter die-back of heather is minimal.

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Isle of May Bird Observatory and Field Station Report for 1963

Prepared for the Observatory Committee

by NANCY J. GORDON, *Hon. Secretary*

The Observatory was manned for 162 days between 23rd March and 7th November 1963. The number of observer nights was 591.

No observations were made during the second week of April, the last week of May, or the first and third weeks of October. Only one group of ringers visited the island in July, and it is hoped that in 1964 more observers will help in summer with the study and ringing of the breeding populations.

Some of the low ringing and daily census figures may be due to a general decrease in populations resulting from the extreme conditions of the 1962-63 winter. Smaller numbers of birds than usual were recorded during the spring migration but there were heavy falls in autumn at the end of August and the end of October.

A new species for the island was a Collared Dove *Streptopelia decaocto* on 7th and 8th June, and for the first time a Bullfinch of the British race was recorded. A Yellow-breasted Bunting on 26th September was the fourth occurrence; like the Bullfinch it was trapped and ringed.

Puffins bred extensively in the Colm's Hole area, where the colony now seems well established.

Spring migration

Observers were present from 23rd March until 12th June, with gaps at 4th-9th April, 17th-18th May and 26th May-3rd June. Visible migration was not spectacular, the main features being its lateness and continuation into June.

March-April. From 23rd to 28th March an anticyclone dominated the weather, bringing south-west winds; small numbers of Blackbirds and a few Chaffinches, Skylarks and Wrens were noted. The next four days of east winds and poor visibility saw more movement, particularly on 30th, when 40 Blackbirds, 30 Song Thrushes (the highest daily total for the year), 8 Redwings, 30 Robins, 7 Dunnocks (rising to 20 on 31st), 30 Meadow Pipits, 20 Skylarks, 16 Lapwings, a few Fieldfares and Woodcock, and a Mealy Redpoll were recorded. A Black Redstart, the first Wheatear and 3 Chiffchaffs were seen on 29th March and a Water Rail from 1st to 4th April. Mainly cold changeable weather continued until mid

April; Meadow Pipits were moving, the highest estimate being about 100 on 13th. A small depression brought east winds on 16th-18th, with a Ring Ouzel, 25 Fieldfares and 10 Wheatears (rising to 20 next day) on 17th, about 100 Fieldfares on 18th, and a White Wagtail and the first Swallow on 19th. Despite east winds during the following week, the only notable arrivals were a Blackcap, a few Willow Warblers, Redstarts and Whinchats, with increased movement of Wheatears. About 25 Willow Warblers on 27th April was the highest spring count of the species.

May-June. This pattern of movement continued into early May with very clear sunny weather and occasional showery spells. Apart from 20 Willow Warblers on 4th May, and an occasional Chiffchaff, warblers were largely absent until 8th May, when 2 Grasshopper Warblers, 2 Sedge Warblers and 3 Whitethroats appeared, and the first Sandwich Terns passed. Some days of east wind and fog followed, as depressions crossed England on 10th and 14th, and small numbers of the commoner warblers continued to arrive. There was a Cuckoo on 10th; 2 Lesser Redpolls, a Yellow Wagtail and a Spotted Flycatcher were seen on 11th, and a Corncrake appeared on 12th. The only Pied Flycatcher of the spring was recorded on 24th May. A few more warblers came in with east wind and fog between 7th and 12th June; also 7 Spotted Flycatchers and a Collared Dove on 7th, and a Nightjar on 8th.

Autumn migration

The Observatory was manned from 31st July to 7th November, with gaps at 15th August and at 1st-6th, 17th-21st and 25th October. There were fewer heavy falls of migrants than in 1962 but the main movements were at approximately the same times.

August-September. The main feature of the early part of this period was a Crossbill irruption for the second successive year: 8 appeared on 31st July, one was seen on each of the next two days, 3 on 3rd August and 84 on 4th. Only 20 were recorded on 5th, with declining numbers thereafter—but still some comings and goings—till the last was seen on 14th. East winds persisted until 4th August, becoming westerly by 10th and remaining very variable in unsettled conditions for the rest of the month. Migrants during the first two weeks included small numbers of warblers, Pied Flycatchers and Swallows, with a few Golden Plovers, Green Sandpipers and Whimbrel. Over 70 Oystercatchers passed in small parties on 4th, and a considerable movement of terns was noted on 6th. A Tree Pipit arrived on 13th, and the first Barred Warbler on 16th. Worsening weather next day, with north winds veering to north-east, brought 8 Garden Warblers, 7 Pied

Flycatchers, a Sedge Warbler, 4 Whinchats, a Ruff and a Cuckoo. A movement of 120 Swallows was seen on 21st and 70 Willow Warblers appeared on 22nd. Winds remained west, with little visible migration, until 28th August when a south-east airstream was associated with a large depression to the south-west. There were 16 Whimbrel on 29th but at first only a trickle of warblers and flycatchers. Then, on 31st, there was a large arrival between 0600 and 1145 hrs GMT, including at least 50 Garden Warblers, 2 Lesser Whitethroats, 2 Blackcaps, an Icterine Warbler, 20 Pied Flycatchers, 20 Redstarts, 12 Whinchats and an early Fieldfare. The following days were exciting. On 1st September Willow Warblers increased from 6 to 20, and a Bluethroat, 2 Wrynecks, and a Wood Sandpiper arrived. By 3rd September the winds had become north-westerly but migrants, especially warblers, continued to appear; Whinchat numbers rose from 6 to 20, Redstarts from 8 to 40, Pied Flycatchers from 8 to 12. Single Ortolan Buntings were seen on 4th and 6th, and Wrynecks numbered 8 on 3rd and 4th. Garden Warblers had dwindled to 15 on 5th, but by then 105 had been ringed. Tree Pipits (maximum 10) were recorded daily from 1st to 6th. Wader movement in the first fortnight of September included 30 Bar-tailed Godwits on 7th, a few Whimbrel and Dunlin, a Green Sandpiper, up to 3 Common Sandpipers, a Ringed Plover, up to 5 Knots and 3 Golden Plovers, with Turnstones and Oystercatchers passing through; a Ruff was seen on 4th-6th, a Spotted Redshank on 5th, a Grey Plover on 9th and single Curlew Sandpipers on 6th and (perhaps the same) on 9th-10th. About 300 Common or Arctic Terns passed the island on 8th. Wheatear numbers fluctuated between 10 and 50, and Meadow Pipit counts exceeded 100 on 5th, 6th and 8th. There was a further influx of Crossbills (maximum 12) between 2nd and 14th September. A Red-backed Shrike was present on 2nd-8th, and a Peregrine on 14th-16th. Movement gradually decreased in a short spell of settled westerly weather in the middle of the month, but more warblers came in after it broke on 17th, the biggest influx (from 0900 hrs GMT onwards on the 19th) including 10 Willow Warblers, a Lesser Whitethroat and a Barred Warbler, as well as 60 Pied Flycatchers, 15 Redstarts, a Cuckoo, 2 Whinchats, a Brambling and 15 Dunlin, with 4 Siskins the following day. In variable winds from 21st to 24th September, a few Swallows, Wheat-ears and *alba* Wagtails were noted; unexpectedly, a Red-breasted Flycatcher was trapped on 22nd. Also surprisingly, in view of the prevailing gale-force west wind which lasted until the end of the month, a Yellow-breasted Bunting was trapped on 26th; it stayed until 30th. About 200 Pink-footed Geese crossed the island on 27th, a Red-throated Diver and 7 Arctic Skuas were seen on 28th, and 2 Merlins on 29th. Kes-

rel passage was normal.

October-November. During strong westerly winds in the second week of October little migration was recorded. The last party of Swallows was seen on 8th; the last House Martin on 13th. There were single Lesser Redpoll and Short-eared Owl on 9th, a Lapland Bunting on 13th, and a Yellow-browed Warbler on 14th. Southerly or westerly winds continued until 26th, with small arrivals of Turdidae on 15th and 23rd. On 26th October the start of a long period of easterly weather associated with a large anticyclone over Europe heralded another large passage. The pattern resembled that of the same period in 1962, involving large numbers of Turdidae, but, despite similar periods of fog, fewer Starlings, Woodcock and Goldcrests. Between 26th October and 5th November 881 birds (including 746 Blackbirds) were ringed.

The influx on 26th October comprised mainly Blackbirds (400), Fieldfares (200), Redwings (50) and Song Thrushes (10), with 4 Snow Buntings, 7 Bramblings, a Chiffchaff, a Lapland Bunting, a Merlin and a Sparrowhawk. Most of these departed overnight, but by the next afternoon Brambling numbers had doubled, and a Yellowhammer and 3 Goldcrests had arrived; a Woodcock and small flocks of Fieldfares were seen passing at dusk. Arrivals on 28th and 29th included 2 more Chiffchaffs (one which was trapped was "Northern") and a Blackcap. The next big movement, in strong south-east winds, was on 30th, when flocks came in all day. They were mainly of Starlings (1,500), Redwings (400), Fieldfares (400) and Blackbirds (100). The Redwing count was the highest for the year. That night the light-keeper reported hundreds of Starlings at the lantern, and Blackbirds were moving also. Arrivals on 31st included 7 Lapwings, 4 Woodcocks, 2 Hooded Crows and a Reed Bunting. Blackbird movement reached a peak on 1st November, with 1,000 estimated, along with about 300 Redwings and 300 Fieldfares; Woodcock numbers rose to 10, and 2 Ring Ouzels, 3 Blackcaps, 6 Redpolls, a Woodlark, a Long-eared Owl and a Hen Harrier (which stayed a week) were recorded. Many of the Turdidae left on 2nd but incomers included 2 more Blackcaps and 3 more Long-eared Owls, another 20 Woodcock, some 15 Robins and about 20 Goldcrests. More Long-eared Owls appeared in the days following, and 7 were ringed between 1st and 7th. A flock of 24 Waxwings on 2nd aroused great interest; between 3 and 24 were seen on the next three days, and a single bird on 6th. There was a noticeable movement of Skylarks on 2nd-6th, with a maximum of 90 on 4th; 6 Snow Buntings and a Black Redstart turned up on 3rd. Arrivals on 4th included a Great Grey Shrike, a very late Wheatear and a male Bullfinch of the Northern race, later seen alongside a female of the British race which had arrived on 1st. Early

morning fog on 5th grounded 500 Blackbirds, 80 Redwings, 100 Fieldfares and 20 Song Thrushes. Later that day a skein of Grey Lag Geese flew over.

Unusual occurrences

- Whooper Swan.** Four, 6th March. Fourth record.
Hen Harrier. One, 1st-6th November. Second record.
Water Rail. One, 1st-4th April. Second spring record.
Concrake. A male, first heard calling in early June, damaged its wing and was still on the island on 6th November.
Grey Plover. One, 25th March; one, 9th September. Third and fourth records, first for spring.
Golden Plover. One, 4th August; three, 5th. Unusually early.
Whimbrel. Sixteen, 29th August. Largest number together.
Bar-tailed Godwit. Thirty, 7th September. Ninth occurrence, first of a flock.
Wood Sandpiper. One, 1st September. Fourth record.
Spotted Redshank. One, 5th September. Fifth year of occurrence; all since 1957.
Curlew Sandpiper. One, 6th and 9th-10th September. Fourth record.
Little Gull. Two, 17th September; one, 18th. Sixth record.
Roseate Tern. One to three daily, 7th-12th June. Only second occurrence since 1957.
Collared Dove. One, 7th-8th June. First record.
Long-eared Owl. At least seven (the number trapped) 1st-7th November. Unusually many.
Wryneck. At least ten (the number trapped) 1st-4th September. Unusually many.
Woodlark. One, 1st-2nd November. First record since 1950.
Hooded Crow. Two to five daily, 31st October-7th November. More than for many years.
Ring Ouzel. One, 24th March. Earliest spring occurrence.
Wheatear. One, 4th November. Latest autumn record.
Robin. One, 7th-11th June. First for June.
Barred Warbler. Eight, 2nd September. Largest number in a day.
Garden Warbler. Fifty, 31st August. A high number, equalled only once before.
Pied Flycatcher. Sixty, 19th September. A high number, exceeded only once before.
Tree Pipit. One, 24th October. Latest autumn occurrence.
Waxwing. Recorded daily, 2nd-6th November; at least 24 involved. Sixth record, the first of more than three birds.
Siskin. Possibly the same bird, 7th-8th June, 3rd and 6th-7th July. First summer record.
Bullfinch. One (British race), 1st-5th November; one (Northern race), 4th-6th November. First record of British race, only fourth and fifth of species.
Crossbill. Eighty-four, 5th August; one to twenty on other days, 31st July-14th August; one to twelve, 2nd-11th and 13th-14th September. Recorded in nine previous years; highest number together.
Yellow-breasted Bunting. One, 26th-30th September. Fourth record.

Breeding population

It may possibly be in part a reflection of the severe winter that there was a noticeable shortage of some of the smaller breeding birds. At the very most, not more than three pairs

of Meadow Pipits and two pairs of Wheatears can have bred, compared with four pairs and five or six pairs, respectively, the year before. Also, for the first time on record, no Pied Wagtails attempted to nest. The now usual pair of Swallows laid eggs, but this year failed to rear any young. The same pair of Blackbirds as in 1962 nested again in a building in Fluke Street, rearing two broods.

A pair of Shelduck hatched 14 young in early June, and the family was seen to cross the North Plateau and launch into the sea from the top of the west cliffs. Oystercatchers had more success than in 1962, rearing about 5 broods, and Puffins bred successfully in the turfy slopes around Colm's Hole. Although almost impossible to assess, this colony now seems well established and probably contains up to 200 breeding pairs; 11 chicks were ringed. There were no marked changes in the status of other seabirds, although Kittiwake nests at East Tarbet increased from 39 to 56. A pair of Great Black-backed Gulls again nested but the three eggs disappeared not long after they were laid. For the first time for five years a count was made of the breeding colony of Lesser Black-backed Gulls; it suggested a population of about 350 pairs—almost exactly double that of 1958. It seems probable that the Herring Gull population has increased also—the last estimate was 2700 pairs in 1957—and reassessment would be a useful task for someone in 1964.

Ringling and recoveries

2307 birds of 63 species were ringed. Although this was not far below the previous year's high total, more than half consisted of Shags and Blackbirds. 378 Shags (only one adult) and 847 Blackbirds (only eight nestlings) were ringed, and other record totals were 126 Garden Warblers, 65 Pied Flycatchers, 12 Barred Warblers, 7 Long-eared Owls and 6 Redpolls. Other notable totals were 10 Wrynecks and 8 Crossbills. Only 3 Wrens, 7 Wheatears and 19 Meadow Pipits were ringed; and no new species were added to the ringling list, although for the first time a Bullfinch of the British race figured on it.

The most interesting recapture was a northward-bound Willow Warbler ringed on the island on 12th May 1961 and retrapped on its way north two years later on 13th May 1963. A Meadow Pipit ringed as a first-winter bird on 17th August 1956 was caught again on 27th August 1963.

There were more recoveries notified in 1963 of birds ringed on the Isle of May than in any previous year; the 56 received include 23 from abroad and our first of Great Spotted Woodpecker, Fieldfare and Siskin. The more interesting are listed below:

		Ringed	Recovered	
Woodcock	F.G.	3.11.62	Tipperary, Eire	4.12.62
Great Black-backed Gull	Ad.	27.10.54	Eday, Orkney	5.10.63
Lesser Black-backed Gull	Pull.	17. 7.62	Tarragona, Spain	29. 1.63
"	Pull.	17. 7.62	Porto Leixoes, Portugal	3. 1.63
Great Spotted Woodpecker	1st W.	13.10.62	Larbert, Stirlingshire	21. 2.63
Fieldfare	1st W.♂	27.10.62	Sundsvall, Sweden	19. 7.63
Blackbird	F.G.♀	4. 4.60	Rogaland, Norway	13. 2.63
"	F.G.♀	2.10.60	Bergen, Norway	29. 9.63
"	Ad.♂	22.10.61	Flekkefjord, Norway	2. 4.63
"	Ad.♂	26. 3.62	Lillesand, Norway	9. 4.63
"	1st S.♂	8. 4.62	Romsdal, Norway	29.10.63
"	Ad.♂	11. 4.62	Lanesborough, Roscommon, Eire	6. 2.63
"	Ad.♂	29.10.62	Sogne Fjord, Norway	26. 6.63
"	Ad.♀	3.11.62	Jutland, Denmark	1. 4.63
"	Ad.♀	3.11.62	Sogne Fjord, Norway	29. 3.63
"	1st W.♂	3.11.62	Bonnyrigg, Midlothian	15. 8.63
"	Ad.♀	3.11.62	Dunkineely, Donegal, Eire	29.12.62
"	1st W.♂	6.11.62	Ennis, Clare, Eire	26. 1.63
"	Ad.♂	6.11.62	Foxford, Mayo, Eire	24. 2.63
"	F.G.	7.11.62	North Sea fishing boat	4. 4.63
"	F.G.	7.11.62	Kristiansund, Norway	8. 8.63
Redstart	1st W.♂	5. 9.62	Holywell, Flintshire	3. 5.63
Blackcap	F.G.♀	7.11.62	Sevilla, Spain	13. 2.63
Starling	F.G.	5. 4.60	Kalmar, Sweden	20. 4.63
"	F.G.	7.11.62	Sjaelland, Denmark	28. 7.63
Siskin	1st W.♂	26. 9.62	E. Flanders, Belgium	21.11.62

A Dunnock ringed as a juvenile on the Bass Rock on 11.9.62 was recaptured on the May on 28.3.63. Another, an adult ringed on Fair Isle on 30.3.63, was recaptured on the May on 11.4.63. A third Dunnock, hatched on the May and ringed there as a juvenile on 21.7.61, was recovered in Anstruther, Fife, on 13.5.63. An adult female Blackbird ringed at New Romney, Kent, on 2.11.59 was recaptured on the May on 5.11.63.

Other observations

Seals. There has been no apparent change in the number of grey seals seen around the island. After publication of the 1962 report it was learned that three more pups (four altogether) had been born on the island in December 1962. In December 1963 a single pup was born, leaving the island soon after Christmas. In January-February 1963 Keeper Crowe caught four tagged seals which had been marked as pups on the Farne Islands, three the previous autumn, one in November 1961.

Rabbits. The rabbit is still numerous, despite the fact that the Principal Keeper again caught about a thousand.

Mice. There appeared to be a large drop in the numbers of house mice during the winter of 1962-63, when few were seen either indoors or out. If so, the population had increased again in time for the visit in September of Dr R. J. Berry of the Royal Free Hospital School of Medicine, who is studying the genetics and variations of island mice and has already published a survey of those of Skokholm. He collected 96 mice for comparative studies, and intends to publish the results.

Vegetation. Dr E. V. Watson, who has contributed greatly towards our botanical knowledge of the May, visited the island in September for the first time since 1956. He noticed that some marked changes have taken place. Despite heavy grazing by rabbits in certain parts, there is in places an immense growth of Yorkshire Fog *Holcus lanatus*. This, and perhaps hard winters and heavy salt spray, has led to the disappearance of many mosses and liverworts. However, there has been an increased growth of bryophytes, for instance of *Marchantia polymorpha* on the recently burnt patch of ground near the Low Light.

A further collection of fungi was made by T. W. Eggeling in September. Eight new species were added to the list for the island, bringing the total recorded to 45.

G. Russell of the Port Erin Marine Biological Station, who has made a survey of the island's seaweeds, visited the island again in July, adding a few new records. It was noted that many species have disappeared from the high-level rock pools, which are being fouled by the increasing numbers of gulls.

Other events. Three very different films were made on the May in 1963. In July Gordon Hollands, the well known bird photographer, took some film to form part of his study of the Scottish volcanic islands, which was later shown at the S.O.C. Conference. In August Scottish Television made a film, primarily of the lighthouse community but also of the bird life, for its *Here and Now* programme. The third filming witnessed by the resident observers concerned the activities of a number of characters dressed variously in Edwardian and full Highland Dress. The origin and eventual fate of this masterpiece remains a mystery.

The lighthouse. It has been learned with great regret that Mr Watt, Principal Keeper since 1955, will be retiring in February 1964. All those who have stayed on the island will know how much the Observatory is indebted to him for all his help and many kindnesses over the years. He and Mrs Watt will be greatly missed, and all the good wishes of the Observatory go with them both to Dundee.

Rock Doves in Scotland

RAYMOND HEWSON

(Plates 1-2)

Introduction

The mixed flocks of pigeons that frequent much of the Scottish coast may have cast doubts on the status of the Rock Dove *Columba livia* as a respectable wild bird, and its natural wariness and inaccessible nesting places make it difficult to study. Similarly in England and Wales there are few pure Rock Doves, but the urban habits of the feral pigeon have been studied (Gompertz 1957), and its elevation to the British list proposed (Fitter 1945). The late Rev. John Lees (1946) found that Rock Doves in sea caves around the Black Isle bred throughout the year, and the long breeding season has been important in the domestication of the Rock Dove from which our various dovecote pigeons are descended. There are still a good many places on the Scottish mainland and islands where apparently true Rock Doves may be found. The object of this account is to sketch in the background to the present enquiry into the status of coast-dwelling pigeons in Scotland.

Distribution

Witherby *et al.* (1940) described the Rock Dove in Britain as resident and decreasing. In England and Wales it used to breed on sea cliffs, especially in the west and south-west, but it was doubtful whether any true Rock Doves still bred, although birds of Rock Dove type predominated in Yorkshire and the Isle of Man. In Scotland the Rock Dove had ceased to breed south of the Firth of Forth. Baxter and Rintoul (1953) in their detailed account found the Rock Dove less common than formerly, and extinct in some ancient breeding places, though still common in the west from Argyll northwards. The doo caves near Elie and at Wemyss in Fife (the latter presumably those referred to by Ritchie (1920) as adjacent to early dovecotes) were occupied, not surprisingly, by dovecote pigeons. It is perhaps uncertain that old records of Rock Doves, such as those in Aberdeenshire (1795) and Kincardineshire (1837), would refer to pure Rock Doves. It would be surprising if those at Gamrie, Banffshire, in 1836 and 1895 did, for Dr R. Richter found in June 1963 that among 78 pigeons near Troup Head, Gamrie, only eight were apparently pure Rock Doves. There is no evidence of any change in agricultural practice which would have caused a considerable influx of domestic pigeons in the last 70 years. The proportion is roughly similar near Castle Findlater, further west along the Banffshire coast, but Lees (1946) found that in Easter Ross the pigeons had only a very slight admixture of domestic

blood. There appear to be no records of the composition of pigeon flocks on the east coast north of the Black Isle.

The distribution of Rock Doves in the Scottish Islands is well covered by Baxter and Rintoul. They are common in Arran, Bute, Islay, Jura, Gigha, Colonsay, Coll and Tiree, breeding on all or most of these islands and on the Treshnish Isles, and on Eigg, Rhum, Canna and Sanday. Their present status on Ailsa Craig seems uncertain. A big decrease occurred on Mull between 1838 and 1921, but Rock Doves are common on Iona. There are fewer Rock Doves on the west side of Raasay than there used to be. An inland colony in Skye, reported by Seton Gordon, may be the only authentic record for Britain. Other reports probably referred to Stock Doves.

In the Outer Hebrides the Rock Dove appears always to have been abundant. Harvie-Brown found them on Haskeir in 1881; they were not found in 1939, but were breeding in 1952-53 (Roberts & Atkinson 1955). Williamson and Boyd (1960) include Rock Dove among the 13 species which have ceased to breed on St Kilda since Martin Martin's accounts of the island in the late seventeenth century. In Orkney it is a common bird, and on Eynhallow nests in the ruins of farm buildings and houses. On Fair Isle it was abundant until the end of the nineteenth century but by 1912 was unknown. It now breeds, but Baxter and Rintoul's record of over 100 in December 1943 may refer to migrants. Peter Davis (pers. comm.) refers to obvious southward passage in November, and estimates the breeding population at about ten pairs. For Shetland generally, Baxter and Rintoul quote Saxby that Rock Doves were abundant throughout the islands.

Rock Doves no longer breed on the Bass Rock or Isle of May. Instances are given of Starlings driving out Rock Doves from their breeding caves. It is difficult to say whether this might not have been due to a decrease in the Rock Dove's range and numbers rather than to a change of habits on the part of the Starlings, although these increased greatly in Scotland in the nineteenth century.

Domestication and dovescotes

Rock Doves had been domesticated in Persia by 500 B.C. and were kept in elaborate columbaria in Rome in 30 B.C., when Varro wrote that there were two kinds of dovescote pigeons, "one, wild pigeons or rock pigeons as some call them . . . the other kind less shy (and) generally white" (Smith 1931). Such precise information is not available for Scotland, where Rock Doves, according to Ritchie (1920), were probably first domesticated at about the same time as ducks and geese. The fitting up of sea caves with accessible nest places from which

young pigeons could be readily harvested probably preceded the building of dovecotes. Such caves exist in the parish of Wemyss and ancient dovecotes were built nearby. I am told that the Wemyss caves have been sealed off because of subsidence due to mining. I can find no other record of such caves in Scotland, and only one other British record, at Port Eynon in Wales (Watkins 1891).

Shaped like an old-fashioned beehive, a pattern attributed to the Romans and introduced into Britain by the Normans, the earliest dovecotes were built around the coast, and presumably stocked from the doo caves. Their age is uncertain. A Welsh dovecote of this type is dated 1326; another in Banffshire is fifteenth century; and the splendid dovecote at Bogward, St Andrews, is among the best known early Scottish dovecotes.

Protected by stringent laws since the fifteenth century—an Act of 1503 ordained "ilke lord and laird to make them dowcots"—dovecotes became so numerous, and the depredations of their occupants so irksome, that an Act of 1617 restricted the possession of a dovecote to landowners with an estate worth an annual rent of ten chalders of victual. It must be remembered that the laird's pigeons fed largely upon his tenants' scanty crops—or his neighbour's. In the eighteenth century, and earlier, before the "improving" landlords brought up-to-date agricultural methods to Scotland, the standard of cultivation was so low and the yield so meagre (Handley 1953) that there was little to spare for pigeons, but the tenant was not allowed to shoot dovecote pigeons to protect his crops (Irvine 1883).

The dovecote continued to flourish after the Act of 1617. Many seventeenth century dovecotes are enormous, suggesting that if the laird was limited as to the number of his dovecotes he made the most of not being limited as to size. A smaller circular type of dovecote, appearing in the eighteenth century, may have been partly ornamental and partly for sport. Trap-shooting of domestic pigeons was fashionable from 1790 until the second half of the nineteenth century (Stuart-Wortley 1886) and it is said that some small Scottish dovecotes, a short walk from lairds' houses, provided pigeons for shooting. As agricultural improvements spread and the price of corn increased, the dovecote declined (Ritchie 1920). Other sources refer to the growing of turnips as winter feed for cattle, which provided a supply of fresh meat in winter and thus rendered the dovecote unnecessary for its main purpose.

But the importance of the dovecote in the Scottish economy can be gauged by the estimate that in Fife at the end of the eighteenth century 360 dovecotes held 36,000 pairs of pigeons

(Thomson 1800). These must have outnumbered by far the wild coast-dwelling pigeons. What became of them as the dovecotes became ruinous? A few pigeons nest in the remains of dovecotes, and many more may have done so during the last hundred or so years. The effect on the pigeons of the sea caves of recruitment from displaced dovecote pigeons must have been considerable.

The present problem

It is clear that the proportion of apparently pure Rock Doves among coast-dwelling pigeons increases towards the west and north and is highest upon the Scottish islands. The distribution of ancient dovecotes, though not fully worked out, shows a concentration in the south and east and along the more fertile coastal areas. It is likely that these dovecotes held many more pigeons than would be kept subsequently in farm pigeon lofts, and probable that recruitment from dovecotes influenced the present distribution of feral pigeons and Rock Doves. It is not known whether the present populations are static or whether one type of pigeon is gaining ground at the expense of the other.

Information on the distribution of Rock Doves and other coast-dwelling pigeons would therefore be welcome from anyone who is able to cover a few miles of coastline anywhere in Scotland, including the islands, and enquiry forms will gladly be supplied. Birdwatchers with antiquarian leanings may also like to collect records of dovecotes, and forms and diagrams are also available for this purpose.

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Short Notes

Some notes on Golden Eagles

Attacking human intruder. On 13th July 1963 when visiting an eyrie in Inverness-shire I was swooped at by the female Golden Eagle. She did this at least a dozen times and really seemed to mean business as she had her talons down as she came in. The reason for this bird's determined swooping at me was because an eaglet was sitting ten yards away on the hillside. During a lull I approached the eaglet, and simultaneously the adult bird dived at me; at which the eaglet took wing and landed half a mile away. This eagle had previously attacked me once on 22nd June and five times on 6th July.

Weights of two eaglets. I made weekly visits to the eyrie of this aggressive bird to weigh the two eaglets (plate 3). The smaller one succumbed when about seven weeks old, not as a consequence of any active ill-treatment, but simply because it got an insufficient share of the prey, which consisted mainly of grouse, lamb carrion (one premature lamb, and one bloodless piece of carrion), water vole, short-tailed vole, and the remains of three red deer calves. One of these last was an entire skeleton—the only time I have found more than dismembered remains—and weighed 5 lb when picked clean. It would be interesting to know how much it weighed when brought to the eyrie, because the fresh weight of perhaps 15 lb would be well beyond the capacity of even a large eagle. The following table gives details of the weekly weights of the eaglets:

Age in weeks	Weights of eaglets	
1	8 oz	1 lb
2	1 lb	2 lb (almost)
3	2 lb	4 lb (almost)
4	2½ lb	5½ lb
5	4 lb	7 lb
6	5 lb	8 lb 6 oz
7	4½ lb	8 lb 7 oz
8	Dead	9 lb
9		9½ lb
10		9¾ lb (flying stage)

LEA MACNALLY.

Food at a Buzzard's nest

On 37 days from 22nd May to 8th July 1963 I visited a Buzzards' nest in Inverness-shire and noted the remains of prey there. The nest contained four chicks, the largest of which left the nest on 30th June, when it weighed 1½ lbs; the next two left on 1st July or early on 2nd. From then no prey

was seen at the eyrie, and I believe none was brought in, as the other three vociferous young were now in the trees well away from the nest. I fed the remaining chick until it finally flew on 9th July.

The prey identified consisted of 25 young rabbits, 8 voles, 4 moles, 1 shrew, 1 slow worm, sheep carrion three times, and more birds than I have seen at any other nest, but no frogs although the nest was above a loch; the birds comprised a Mallard duckling, 2 fledgeling Blackbirds, 3 fledgeling Robins, and single adult Red Grouse, Oystercatcher, Wood-pigeon and Jackdaw. The four young were capable latterly of devouring food quickly, and certainly more was brought in than I was able to record. For instance, on 19th June I noted the cleaned bones and feathers of an Oystercatcher at 9 a.m.; the cleaned bones and feathers of a grouse and the remains of a slow worm below the nest at 1 p.m.; a headless mole at 5.30 p.m.; and another headless mole at 9.30 p.m.

LEA MACNALLY.

Goshawk in North and South Argyll

While we were watching birds one mile SSE along the coast from the lighthouse at the Mull of Kintyre on 15th September 1963 a large hawk flew close by. We saw only the underside well, but this was very pale buff, almost white, and covered with a regular pattern of small dark oval spots, very finely spotted under the wings and more heavily spotted on breast and belly. The spots died out at the belly leaving a clear white patch before the dark tail. The background of the tail was medium grey-brown with four prominent and very dark bands, the terminal one being almost twice as broad as the other three. The side of the face appeared whitish. The bird turned at an awkward angle to the sun and no more could be seen of the back than that it was fairly uniform brown.

In shape this bird was like a Sparrowhawk but the tail was shorter in relation to the wings, which also appeared longer in proportion to their width than a Sparrowhawk's. The flight was similar but more leisurely—flap, flap, glide and circle. Eventually it circled and soared a little and drifted away to the south. It was much larger than a Sparrowhawk, the wingspan being estimated at about half as great again as that of a female Sparrowhawk.

The bird was identified as an immature Goshawk, and judging by its pale underparts probably in its second summer. As with most reports of this species there is the possibility that it might have been a falconer's bird but we have no evidence of this.

A. G. GORDON, T. D. H. MERRIE.



PLATE 1. Dovecote at Barnyards of Findlater, Banff-shire; the earliest type of dovecote in Britain; this one containing over 900 stone nestboxes (see page 22).

Photograph by R. Heusou



PLATE 2. Four-chambered dovecote at Leicheston, near Buckie, Banffshire: a typically Scottish design, but unusual with four compartments; this one containing about 450 nestboxes (see page 22).

Photograph by R. Hewson



PLATE 5. Weighing month-old Golden Eagles, Inverness-shire, 1st June 1965. At this stage the larger weighed $5\frac{1}{4}$ lb, the smaller only $2\frac{1}{2}$ lb (see page 26).

Photograph by L. MacNally

(Mr Merrie has submitted a sketch in confirmation of the identification. So far as we can judge, the bird was almost precisely at the boundary between the Argyll and Clyde Faunal Areas, and may be taken as the first record for South Argyll.—ED.)

Spotted Crake in Midlothian

While I was walking along the shore of Gladhouse Reservoir, Midlothian, on 21st July 1963 a small bird rose about 6 feet in front of me, "running" for several steps on the mud as it flew off in the manner of a Coot scuttering across the water. It flew low with dangling feet for some 20 yards, then swung in to thick grasses and was lost.

The bird was obviously a crake. It was about the size of a Starling and had a short bill. The upperwings and body appeared to be dark brown with very heavy white spotting (and perhaps some streaks and blotches of white) on the mantle. As it swerved into the grass there was a momentary glimpse of pale belly or, perhaps under tail-coverts. The bird was identified as a Spotted Crake.

The only other record of this species at Gladhouse is of one on 20th July 1957 (*antea* 2: 30, 219). These are apparently very early dates for autumn movements (*The Birds of Scotland*) although the lack of records may be due to the very retiring nature of the bird. With regard to this last, the type of terrain in which I found the crake is of interest. From spring to autumn, when the water level is high at Gladhouse, I try to keep as close to the water's edge as possible. On 21st July 1963 the level was about 9 ins down and there was a narrow line of open mud or drift reeds at the high water level, with thick vegetation on the one side and thinner stuff with water on the other. This sort of country, if covered regularly, will give wet feet on many occasions and perhaps the very occasional Water Rail or small crake.

R. W. J. SMITH.

(The description given above would also fit the Sora Rail, but we feel that the chances of this American species turning up in July on the eastern side of Scotland are so remote that they can reasonably be discounted.—ED.).

Snowy Owls in Aberdeenshire, Banff, Shetland and Orkney

As we reached the north summit of Ben Macdhui on 1st June 1963 Bryan S. Owen spotted a large bird, very white when it flew, with a large wing span. We next caught sight of it perched completely upright against a green lichen-

covered boulder, and were able to stalk within 50 yards before it flew off across the snowfields between the two tops. Its flight was swift on being disturbed, becoming more deliberate and direct as it drew away from us. Certainly as large as a Buzzard it gave a marvellous view of its large head and body, and broad wings barred with pale greyish markings giving a chequered effect. It settled on some pure white snow about 150 yards away and was only visible to the naked eye as a dirty smudge. When at rest it was noticeable that its breast was unstreaked. The eyes were not clearly seen; the beak was hardly visible but appeared yellowish. As it took flight its legs dangled downwards showing that they were feathered to the claws. The general appearance was of a monstrous moth in flight.

We had no hesitation in identifying it as a Snowy Owl, probably an adult male in view of the lack of body markings. We saw it again several times that day, over the shoulder into the Lairig Ghru and flying north towards Lochan Buidhe, but it could not be found subsequently although various people searched for it.

It was seen on both sides of the Aberdeenshire/Banff county boundary. A previous summer record from exactly the same area was of one—almost certainly an adult male—which frequented this high plateau in June 1952 and, probably the same bird, from 19th July to 13th September 1953 (*Scot. Nat.* 1952: 176; 1953: 57; see also *antea* 2: 99).

F. C. GRIBBLE.

On 14th June 1963 a Snowy Owl was seen on Vord Hill on the island of Fetlar. It was flushed from a pile of rocks at a distance of about 40 yards. It flew over the brow of the hill and was immediately mobbed by a Whimbrel, several Arctic Skuas, Common and Great Black-backed Gulls. It again rose into view but quickly flew below the brow of the hill and was not seen again.

Although only seen for a short time the bird was undoubtedly a Snowy Owl. It was a large owl, white all over, the only markings being small blackish streaks, especially noticeable on the wings, but very few on the head. It had a characteristic owl shape, with rather long body as a Long-eared Owl rather than the short body of a Barn Owl. Wings long and rounded. Head typically round, with a short neck seen as the bird rose side-on in front of me. In flight the bird was approximately the same size as the Great Black-backed Gulls which were mobbing it.

Venables and Venables (*Birds and Mammals of Shetland*) list six previous records for Shetland during this century, but

all these were winter records. Snowy Owls were evidently much more frequent in Shetland in the nineteenth century.

L. S. TAYLOR.

On 4th July 1963 near the summit of Ronas Hill in the north-west Mainland, Shetland, I disturbed a large white bird which I identified as a Snowy Owl. It flew for some distance before perching on a stone. Owing to the very open nature of the country it was difficult to approach closely as the bird was on the alert the whole time. From about 120 yards, in rather poor light, I could make out the pale white breast, without noticeable markings; wings, back and crown white, flecked with darker markings. The feathered tarsi were very obvious, and the eyes appeared yellow in the owl-like head. When I approached closer the bird flew away over a ridge. It had an even flight with slow wing beats, the wings appearing long and rounded at the tips. The bird was almost completely white, but had a slightly darker area on the leading edge of the wing. There were no other birds in the area with which I could make a direct comparison of size, but I judged it to be about as big as a Herring Gull.

C. J. BOOTH.

On 20th June 1963, while scanning a hillside on the island of Eday with binoculars, I realised that what I had taken for a white stone near the top of the hill was alive and turning its big round head from side to side. It was in fact a magnificent Snowy Owl, white with some faint palish-brown barring, and either a male or a light-coloured female. Standing on the peat bank it was obviously an owl, though in proportion to its body the large round head was smaller than in most owls; eyes not very large, with golden irises; beak blackish and almost lost in the white feathers of the rather obscure facial disc.

I was able to get within 15 yards of the bird and to photograph it as it circled past in flight before flying off over the brow of the hill to settle again, when it was immediately mobbed violently by a female Merlin which had a nest nearby.

On 18th July I again visited Eday and located the Snowy Owl on the flattish hill-top where it had established itself. Each time I approached close it opened its mouth widely and called in apparent anger or defiance before taking off. The note, singly or repeated two or three times, was a loudish *kia* or *keow*, somewhat reminiscent of the *kia* of a Jackdaw, but louder and a little more drawn out, with just the hint of a bark.

When flushed the bird never flew far, but confined itself to

a restricted area on the hill-top. Its flight was fairly swift—powerful strokes of the wings alternating with glides on more or less straight pinions and with the wingtips slightly curved down.

A number of obvious roosting places on little eminences were littered with pellets and feathers. The pellets varied in size from 90 x 26 to 115 x 34 mm, and ten which I examined contained fur and bones of young rabbits up to about half-grown. The feathers were white and downy to a varying extent, and most had some faint brown bars or spots.

Local information suggested that the bird may have arrived as early as the end of April, though this only emerged after I mentioned seeing it. There was also a report of a second bird seen with this one but I could not confirm it. The latest claimed sighting was about the end of August.

Though the *Handbook* credits the Snowy Owl with being a frequent visitor to Orkney I do not know of any authentic record during the past 20 years at least.

EDWARD BALFOUR.

Scarlet Grosbeak on Auskerry, Orkney

On emerging from the bothy at the north end of the island of Auskerry to make a morning bird census on 23rd September 1963 I flushed a finch from the thistles in the garden. It flew down onto the beach, where I examined it with binoculars at ranges down to 10 yards. It was an immature Scarlet Grosbeak, a species which I have seen on a number of occasions on Fair Isle.

Similar in size to a House Sparrow, its most distinctive feature was a double wing-bar on the secondary coverts, particularly well marked in this individual, though not obvious in flight; underparts greyish-white, with distinct streaking on breast and flanks; upperparts dark brown, with rather blurred streaks on crown and nape; rump appeared lighter when perched, but in flight not noticeable; tail forked; light tips and outer edges of secondaries seen when the bird was perched; bill rather heavier than that of a House Sparrow.

The bird remained in the area of the bothy, feeding on thistle seeds, throughout the 23rd and 24th, but was not seen during a quick look round on the 25th before I left the island. Exactly 50 years ago, in September 1913, Eagle Clarke saw nine on Auskerry and deduced that they must occur there fairly frequently. I doubt however if there are any records during the intervening half century, and the species is certainly scarce in the rest of Orkney.

PETER J. B. SLATER.

Current Notes

(Key to initials of observers : A. Anderson, D. R. Anderson, J. D. Anderson, D. G. Andrew, E. Balfour, J. Ballantyne (JB), Miss P. G. Baxter, J. A. Begg, Dr J. Berry (JBy), H. Boase (HBs), Dr H. Boyd (HB), I. Boyd, T. Boyd, W. Brotherston, R. J. Buxton, R. G. Caldow, Dr B. Campbell, N. Campbell, C. V. Chilcott, H. J. Clase, H. G. Cree, G. M. Crichton, W. A. J. Cunningham, R. H. Dennis, E. Dicerbo, G. Dick, R. C. Dickson, J. Dunbar, W. W. Dunn, Dr G. M. Dunnet, Dr W. J. Eggeling, N. Elkins, Sir R. Erskine-Hill, T. H. Evanson, H. A. Ford, M. Forrester, R. W. Forrester, T. R. Forsyth, J. M. Harrop, M. J. Henderson, P. Holt, J. Hoy, W. Hughes, E. N. Hunter, Rev. G. T. Jamieson, N. Lewis, D. G. Long, J. G. Lyon, A. Macdonald D. Macdonald (DM), A. M. Macfarlane, D. McLeod (DMcL), Miss M. P. Macmillan, J. McQuaker (JMcQ), R. W. Marriott, J. K. R. Melrose, Rev. R. I. Mitchell, C. M. Morrison, J. Murray (JM), R. Murray, C. K. Mylne, M. A. Ogilvie, D. W. Oliver, Dr I. D. Pennie, A. J. Posnett, J. Potter, R. M. Ramage, A. D. K. Ramsay, G. A. Richards, E. L. Roberts, H. M. Russell, Major R. F. Ruttledge, P. W. Sandeman, P. J. B. Slater, A. J. Smith, R. T. Smith, R. W. J. Smith, Dr T. C. Smout, T. Spence, D. Stalker, R. Stokoe, C. Tait, I. Taylor, Miss V. M. Thom, R. Tulloch, L. A. Urquhart, M. D. Walker, G. Waterston, Dr A. Watson, A. D. Watson, Dr R. S. Weir, T. Weir, W. H. Wild, D. P. Willis, C. Young, J. G. Young, B. Zonfrillo

Unless otherwise stated all dates refer to 1963).

Distribution

Except to amplify current topics this section excludes observations made before 1st September. Current Notes for the next number should be in the hands of the editor by 31st March 1964.

A **Manx Shearwater** at Skinflats, Stirlingshire, on 13th October was the first the observers had seen so far up the Firth of Forth (GD, JP, IT).

On 19th October at Greg Ness, Kincardineshire, 1167 **Gannets** were counted passing north during a two hour watch (RWM). A **Cormorant** diving repeatedly in Morton Lochs on 1st December is a new species for the reserve (see 2: 163) (CT). A **Shag**, apparently uninjured, was discovered inland in a loading bay of a factory at Cumbernauld, Dunbartonshire, on 5th November and released at Grangemouth by the S.S.P.C.A. (PH).

At Duddingston Loch, Edinburgh, fine views were had of a pair of **Red-crested Pochard** on 7th December (DGA), and again next day; after which the loch froze over and the birds could not be found (DRA, WB). Such birds could equally be escapes or wild (see *Brit. Birds* 52: 42).

Three **Scaup** were inland at Barr Loch, Renfrewshire, on 19th October (RCD), and a duck was at Hule Moss, Berwickshire, on 21st September (DGL). There was a **Long-tailed Duck**

at Cobbinshaw, Midlothian, on 9th November (NC, PJBS), and one on Loch Ken on 14th and 18th December (ADW). There was a drake **Smew** at Lindores Loch, Fife, on 15th October (JBy, WJE, GW); a red-head at Balgavie Loch, Angus, on 15th December (GMC, JD); a drake at Rowbank Reservoir, Renfrewshire, on 1st (WWD, RWF), 15th and 17th December (HGC), and two red-heads there on 21st (RCD); a drake at Skinflats, Stirlingshire, on 16th December (GD, JP, IT); and a red-head on the River Almond at Cramond, Mid/West Lothian on 27th and 28th (RM). Single **Shelduck** were seen inland at Hule Moss on 26th October (MJH, DGL); New Cumnock, Ayrshire, on 3rd November (JAB); and at Gadloch, Lanarkshire (BZ), and Barr Loch (RGC) on 28th December.

A flock of over 150 **Grey Lag Geese** which arrived at Fair Isle on 3rd November was the biggest since 1915, and numbers were in Shetland at this time (RHD); over Dalry, Kirkcudbrightshire, there was a considerable southward movement of small flocks arriving in the area on 4th and 5th (ADW). Greylags have not frequently been recorded in Peeblesshire, but from 24th November a flock of up to 320 fed regularly in a stubble field by Portmore Loch and evidently roosted on the loch (DGA, JB). The first 21 **Greenland White-fronted Geese** at Loch Ken were on 25th October, but the main arrival was in the first week of November (ADW). Other records of Whitefronts include five near Crieff, Perthshire, on 2nd November (ADKR); 12 on 7th December at the Endrick mouth, where a small flock has appeared during the past few winters (DS); and one with Greylags near Newburgh, Aberdeenshire, on 28th December (DGA).

Further notes on the great arrival of **Pink-footed Geese** at the end of September (see 2: 486) have been received. On the south side of the Tay estuary the first 60 were beating their way west into the gale at 8 p.m. on 26th; during the night this arrival continued, with birds almost hitting the Tay Bridge as they landed on a sandbank at 1.30 a.m.; all day on 27th until 10.30 p.m. they continued to arrive from the east, having evidently been blown off course by the gales; a few came from the normal northerly direction as the gales abated in the afternoon (JBy). This arrival from the east was noted also in the Lothians on 27th (WB). Many thousands were passing over Roslin, Midlothian, on the night of 27th-28th (ADKR); and at Colinton, Edinburgh, the first Pinkfeet were heard on 28th, and there were more next day (HAF). In the Libberton area, Lanarkshire, the main arrival was on 28th (RE-H); and at Hule Moss, Berwickshire, there were about 1000 on 28th, though only 20 had been there the day before (DGL).

A **Brent Goose** was at Aberlady, East Lothian, on 19th October (AA), and at Torryburn, Fife, one of two was shot on

12th November—a 1st-winter Dark-breasted bird of only 2 lb 7 oz (JH); on the Midlothian shore of the Almond on the 23rd an immature Dark-breasted Brent proved most reluctant to fly, and just walked away when approached (TRF, TCS); a Pale-breasted Brent was seen with Greylags near Monikie, Angus, on 9th November (HB, MAO). Reports of odd **Barnacle Geese** include one at Kinnaird Park, Angus, on 27th September (JD); one at Gladhouse, Midlothian, with Pinkfeet on 20th October (RWJS); one at Aberlady on 16th November (JB); five at Dunbog, north Fife, on 14th December (TS); two with Pinkfeet at Libberton, Lanarkshire, also on 14th (RE-H); and one next day at Faldonside Loch, Roxburgh/Selkirkshire (AJS).

At Barr Loch, Renfrewshire, 160 **Whooper Swans** on 17th November were far more than the observer had seen there before (RGC), and 173 on 24th, including only nine immatures, is likewise far above the figures recorded in *Wildfowl in Great Britain* (p. 181) (LAU).

No fewer than 14 **Kestrels** were seen on 29th November on a trip from Sanquhar to Loch Ken by Moniaive and New Galloway (JGY).

A **Quail** was first heard calling on 18th July near Lockerbie, Dumfriesshire; a second was heard on 21st, and thereafter both were calling regularly, one until 14th and the other until 16th August, from their respective fields; earlier, they had been noted in various fields of barley, turnips and potatoes; one was last seen on 8th September. Recent records of the species in Dumfriesshire are wanting, though it might readily be missed. The late dates at which these birds were heard suggests that they did not obtain mates (ELR, HMR, RTS).

Snipe seemed to be unusually numerous in Ayrshire during October. Forty were flushed just south of Ayr on 4th, and in the following month or so, in many parts of Ayrshire, two wisps of 30 birds, and seven or eight of 20/25 were noted (GAR). On 14th October there were at least eleven at a small pool near Crail, Fife (RSW).

Further Black-tailed Godwits (see 2: 487) are reported from:

- Stornoway, Lewis—1 throughout Oct and Nov (NE).
- Eden Estuary, Fife—9 on 29th Sept (CT), and 10 on 13th Oct (GMC), at this well known haunt.
- Longannet, Fife—3 on 2nd, and 1 on 16th Nov (GD, JP, IT).
- Ardmore Point, Dunbarton—1 on 14th Dec (DS).
- Sandhead, Wigtown—3 on 3rd Nov (ADW).

Single **Spotted Redshanks**, in addition to those already noted (2: 488), were at Tynningame on 8th September (TB, RWJS, CT); Cult Ness on 25th (DS); and Aberlady on various dates from 19th October to 16th November (JB, WB, RM, CT).

A count of 2500 **Knot** at Musselburgh on 25th November was easily the highest count for the area (JB).

Further counts of **Little Stints** at Tynninghame (see 2: 489) are of 12 on 8th September, and one on 15th and 21st (TB, RWJS, CT). Two were at the Doonfoot, Ayrshire, on 4th November (GAR, LAU).

Many **Curlew Sandpipers** have already been recorded (2: 489) and further reports come from:

Cult Ness—6 on 12th Sept (DS).

Longannet—1 on 2nd Nov (GD, JP, IT).

Skinflats—8 on 1st Sept (DS).

Aberlady—5 on 7th Sept (TB, RWJS, CT).

Tynninghame—20 on 8th Sept, and 6 on 15th (TB, RWJS, CT).

Barassie, Troon—4 on 14th Sept, 1 on 28th, and one on 5th Oct (RWF).

Among further **Ruff** reported (see 2: 489) are one at the Eden estuary on 12th October (DWO), and one at Longannet on 2nd November (GD, JP, IT).

A **Great Skua** at Tynninghame on the surprising date of 1st December was the observers' first record for the estuary (TB, RWJS). Three **Pomarine Skuas** were seen in the latter part of October—one flying north at Greg Ness, Kincardineshire, on 19th (RWM); one crossing a narrow neck of land south of Scourie, Sutherland, in strong winds on 21st (RS); and one at Fair Isle from 21st to 30th (RHD). Late **Arctic Skuas** were three flying past Elie Ness, Fife, on 26th October (DWO), and three at Longannet on 2nd November (GD, JP, IT); inland a 1st-winter bird was found dead near Bridge of Dee, Kirkcudbrightshire, on 11th October (MDW per ADW). An adult **Long-tailed Skua** flew past Gullane Point, East Lothian, on 1st October (DS); and a freshly dead juvenile was found on 21st October 20 yds from the shore on a golf course at Prestwick, the first to be recorded in Ayrshire (NL, GAR).

A **Lesser Black-backed Gull** of the Scandinavian race was seen in Newtown Bay, Beaully Firth, on 23rd October, the first record of that race for East Inverness (RS). Single Lesser Blackbacks of the British race are reported from Gosford, East Lothian, on 5th November (GAR); Almond estuary, Mid/West Lothian, on 7th and 14th December (TCS); Troon on 16th October; Prestwick on 20th; Ayr and Doonfoot on 31st and November 15th, 17th and 23rd; near Maybole on 17th November (GAR); and Stranraer (race not known) on 23rd December (JM). This species is perhaps becoming more frequent in winter away from its established haunts in the Solway. Immature **Glaucous Gulls** in the south of Scotland were at Tynninghame on 1st December (TB, RWJS) and Duddingston Loch on 5th (DRA). Away from regular haunts single immature **Iceland Gulls** were seen off Greenock, Renfrewshire, on 30th October (HJC); at Lochend Loch, Edinburgh, on 7th December (DGA); and in Little Loch Shiel, Ross-

shire, on 25th (ENH). All the **Little Gulls** had left Kilconquhar (see 2: 490) by 28th September; subsequent casual occurrences were on October 13th (2), 22nd-24th (1), 27th (5), and November 5th (2); there were ten adults at Elie Ness on 9th November; and on 1st December easterly gales brought at least 50 into the shelter of a small bay there (DWO). At Monifieth, Angus, there were seven adults and one immature on 3rd October (GMC, JD). Three **Black Terns** were seen at St Andrews on 17th October (WJE, RFR). There are no reports of **Little Auks**, except at Fair Isle, where the first three came on 13th November (RHD).

Collared Doves continue to be reported as increasing and spreading. It is very important that a detailed record of this should be kept, and it is to be hoped that everyone will keep careful notes of all that they see and not lose interest as the bird becomes commoner. It is extraordinary how many notes on this species are submitted which lack elementary data as to dates, numbers, and how the birds were identified, thus compelling us to write asking for the information. In some instances our letters have been ignored, and consequently so have the records involved, though the birds were no doubt Collared Doves. The first records for Wigtownshire come from two localities, at both of which the birds may have bred, though this was not proved; a small colony was in the vicinity of Garlieston harbour throughout the summer, and about 12 were present in October, including birds of the year; they fed on spilled grain near a mill (WH per ADW); six were seen in mid November on a farm near Portpatrick where they fed with poultry, and the farmer said two had first appeared in May and that there were eight by November (JMcQ per ADW). Although Ayrshire was one of the first places to have Collared Doves in Scotland the colonies have not shown the spectacular increases noted elsewhere; things may be about to change, as two were seen in Ayr on 22nd June (IB), at least 4 on 10th October (CKM), and at least seven on the 18th (RMR, GAR). At Bridge of Weir Collared Doves were present and calling from about 13th June, and three or more were still there on 21st September, the first to be seen in Renfrewshire (WHW). At Aberlady, East Lothian, one was reported on 21st September (HAF, RWF), and there were four nearby on 30th November (DWO). In North Perthshire there were two on the outskirts of Rattray on 14th October (WJE); and the report of one in the grounds of Perth Royal Infirmary on 12th December (AMM) led to the discovery that a flock of up to 20 was visiting a neighbouring garden to feed, having gradually increased in numbers from four that first appeared during winter 1962-63 according to local information (VMT, CY). Five or six arrived in the spring at Newburgh, Aberdeenshire, more or less together, and at least one nest with

eggs was found during the summer, the first breeding record for the county (GMD).

A **Barn Owl** was found dying near St Fergus, Aberdeenshire, on 1st October (DPW), and one was seen near Brechin, Angus, on 5th (GMC). On Fair Isle there was a big influx of **Long-eared** and **Short-eared Owls** between 28th October and 8th November, with a maximum of 36 on 7th November, and up to 20 Short-eared and eight Long-eared specifically identified (RHD); similarly there was an influx of Long-eared Owls in Orkney during the first week of November, with up to eight in one tree at Binscarth on 17th, and at least 16 there a month later (EB). At Airthrey Hospital, Bridge of Allan, Stirlingshire, a **Nightjar** was seen flying about in the evening of 5th September (GTJ).

Late **Swallows** are reported from various places:

2 Nov—1 Orkney (EB).

4 Nov—Imm. Doonfoot, Ayr (LAU).

7 Nov—2 Cupar, Fife (PGB).

13 Nov—1 Cupar, Fife (DWO).

14 Nov—1 Eyemouth, Berwick (DMcL).

15 Nov—1 flying south at Aberlady, East Lothian (CT).

17 Nov—1 flying south at Kilconquhar, Fife (DWO).

1 Dec—1 flying south over Eden estuary, Fife (CT).

House Martins at Elie, Fife, were still feeding their well grown nestlings on 5th October. Late records are of two at Cupar, Fife, on 4th November which left next day (DWO), and at immature at Dalry, Kirkcudbrightshire, also on 4th (ADW).

A **Jackdaw** at Stornoway on 4th December had the very pale greyish-white nape of a Scandinavian bird, and a rather striking off-white band at the base of the neck, giving the appearance of a collar; a normal British-type Jackdaw was nearby, but it is probably unwise to be dogmatic about the origins of a single bird (NE). A group of about a dozen **Magpies** was seen near Colinton, Edinburgh, on 8th November (JGL).

The first flocks of **Fieldfares** were 50 near Garvald, Midlothian, in the Moorfoots on 29th September (JDA per WB), and 30 at Moffat, Dumfriesshire, next day (ED), but a month later there was a much more widespread and spectacular arrival, described as the biggest movement for 11 years at Fair Isle:

23 Oct—some passing over Kilconquhar, Fife (RIM).

24 Oct—flocks of over 100, mostly feeding on rowan berries, at many places by the road from Grantown, Moray, to Braemar, Aberdeenshire, including a flock of over 300 near Tomintoul, Banff (RS); first 23 at Balbothie, Fife (DWO); first 11 near Leadburn, Midlothian (JB).

25 Oct—100's moving SW in many places between Arrochar, Dunbartonshire, and Criannlarich, Perthshire, and especially near Luib, Perthshire; about 1000 in Glen Artney, Perthshire; perhaps 4-5000 in all (MPM).

26 Oct—several thousand birds arriving in Yell from NE were mostly

Fieldfares (RT); 900 at Fair Isle (RHD); first arrivals in fair numbers in Eye peninsula and on NW coast of Lewis (NE); peak movement at Elie Ness, Fife, with passage of 700 per hour (DWO); many flocks over Kilconquhar (RIM); 150 flying south at Kirkliston, Mid/West Lothian (TCS).

27 Oct—over 2000 at Fair Isle; similar numbers on 28th, slowly decreasing to 850 on 2nd November and small numbers thereafter (RHD).

Large numbers north of Kingussie, Inverness-shire, on 30th (IDP); 100's at Mull of Galloway on 31st (BC); quite large numbers in Orkney at end of October and beginning of November (EB); flocks all over Lewis from end of October were more numerous than in any recent years (WAJC).

In contrast there were fewer reports of **Redwing** at this time, though there was evidently a sizeable arrival. Earlier movements included many passing over Golspie, Sutherland, on 16th October (IDP), and 1000 at Fair Isle on 23rd (RHD). Notes on the late-October movement include:

26 Oct—1000 at Fair Isle (RHD); widespread influx along NW coast of Lewis (NE); first 50 at Fife Ness (DWO); 100 at Hule Moss, Berwickshire (MJH, DGL).

27 Oct—1200 at Fair Isle (RHD); 50 near Callander, Perthshire; heard over Edinburgh (TCS).

28 Oct—large flocks moving south at Drymen, Stirlingshire (RCD).

There was an obvious influx of **Blackbirds** to central Edinburgh on 24th October, with parties of 15-20 in Princes Street Gardens and George Square (TCS). At Fair Isle there were more than 600 on 27th (RHD), and big numbers were in Orkney at the end of the month (EB). On 31st many Blackbirds were in the fields near North Berwick, East Lothian (AM), and an influx was observed all over the Sands of Forvie, Aberdeenshire, on 2nd November (GMD).

There was a **Wheatear** at the Mull of Galloway on 3rd November (ADW), and different birds were seen on 3rd and 4th at Tolsta, Lewis (NE); one was at Fife Ness on 16th (DWO), the same day as the last at Fair Isle (RHD).

Late migrant, or possibly wintering, **Blackcaps** in November were a cock at Barns Ness, East Lothian, on 5th (a normal date for late migrants) (AM); one or two at Binscarth, Orkney, on 17th (EB); a hen on 18th and 20th, and a cock on 21st, at the same old apple tree in Dalry, Kirkcudbrightshire, as was visited in late autumn or winter in 1959, 1960 and 1961 (ADW); and one at Dornoch, Sutherland, on 22nd (DM). Dark-legged leaf-warblers, evidently **Chiffchaffs**, were at Stornoway on 9th November (NE), and at Coldingham, Berwickshire, on 11th (CMM).

A very late **Spotted Flycatcher** was watched for ten minutes as it hawked for flies on 16th November at the edge of a wood one mile west of Invergowie, Perthshire (HBs).

At Gartocharn, Dunbartonshire, the **Grey Wagtail** was one of the hardest hit birds after last winter, and where they were

constantly present none has been seen since (TW). Away from possible breeding areas a *flavissima* **Yellow Wagtail** was on the shore at Crail, Fife, on 7th October (DWO).

Readers will know that another invasion of **Waxwings** began at the end of October. Please send in your records as soon as possible so that they may all be published together.

Single **Great Grey Shrikes** were at Fair Isle at the end of October, four on 1st November, five on 4th, and none after 9th (RHD); one was at Rendall, Orkney, from about 6th November to 20th (EB); one was seen on the moor near Banchory, Kincardineshire, on 9th (AW); one was at Barr Loch, Renfrewshire, on 17th (RGC); and one was seen by Little Loch Shieldaig, Wester Ross, on 9th December (ENH).

A flock of 20 **Goldfinches** feeding on thistles by Loch Tay, Perthshire, on 23rd November may be worth mentioning (PWS). A flock of 27 **Twite** was counted at Southerness, Kirkcudbrightshire, on 18th November (JKRM). There were two **Crossbills** near Stranraer, Wigtownshire, on 27th December (JM). A **Lapland Bunting** was seen at Greg Ness, Kincardineshire, on 23rd October (RWM).

Earlier observations—before 1st September 1963

We dislike this section. By implication and common sense, Current Notes should be confined to recent observations, especially as they are often of subsidiary, transient or local interest. A scientific urge to include all valid records of scarce species is our chief excuse for publishing these older records, but we try to apply a stiff test to them. It must be admitted that there are occasions when it is not the observer's fault that a particular note lands here.

Two **Sooty Shearwaters** flying west close past Gullane Point, East Lothian, on 21st July were early for the east coast, and possibly the first record for Aberlady Bay Nature Reserve, where even Manx Shearwaters are rare in spite of their abundance in the Forth (MF, DS).

A pair of **Garganey** was seen on various dates from 11th to 31st July at Threipmuir, Midlothian (ADKR). One of two **Barnacle Geese** was shot on 22nd August on Eilean Hoan off the mouth of Loch Eriboll, North Sutherland; it was very emaciated, and was sent for examination to IDP, who found it in very poor condition and affected with tuberculosis; there were multiple lesions in the right shoulder joint and left kidney; the mass of pus in the shoulder joint must have seriously impaired its ability to fly; it was also infested with lice (RJB).

The **Osprey** which haunted Tentsmuir and the Eden estuary from 28th July to 11th August (2: 487) was regularly seen there from 22nd July (CVC, THE). One ranged along the Tweed from Coldstream to Kelso for about a month in May

and June (AJP); and one was seen flying north between Morar and Mallaig, Inverness-shire, on 23rd June (JMH).

Two **Spotted Redshanks** were at Waterfoot, Annan, Dumfries-shire, on 11th August (RTS). A **Black Tern** was seen on Loch Lomond at the Endrick mouth on 4th August (DS).

A **Sand Martin** on 3rd and 4th April at New Cumnock, Ayr-shire, was five days earlier than any other reported (2: 440) (JAB). At Valleyfield, Fife, **Blackcaps** had an exceptionally good season, with three pairs nesting and all rearing broods (JH). Two **Crossbills** were noted at Kyles Hill, near Hule Moss, Berwickshire, on 21st August (DGL).

General observations on behaviour

A **Mallard** has brought off two broods for the past three years (1961-63) in an old ash near Montrose; in 1963, all in the same tree, **Blue Tits** had a nest about 7 ft from the ground, the Mallard was 3 ft higher, and the top storey was occupied by a pair of **Kestrels** 3 ft above the Mallard (GMC, JD).

Obituary

HELEN TODD

Miss Helen C. Todd of Trochrague, near Girvan, died in November 1963. She was well known as the discoverer and protector of the second Scottish colony of Collared Doves, but she was also a bird photographer of ability, having made before the last war many excellent pictures of the birds of Ailsa, and on more than one occasion she was a benefactress of the Scottish Ornithologists' Club. A person of great charm and character, she will be affectionately remembered by many of us for her hospitality and interest in ornithological work, and not least for the very great courage with which she realised the existence of her fatal illness.

M. F. M. MEIKLEJOHN.

Reviews

The Birds of the British Isles. Vol. XII. By D. A. Bannerman. Illustrated by G. E. Lodge. Edinburgh and London, Oliver & Boyd, 1963. Pp. xiii + 443; 31 plates (30 in colour). 63/-.

The twelfth volume now published completes this great work ten years from the publication of the first volume in 1953—a very fine achievement indeed. This final volume deals with the skuas, auks, rails, crakes, and game birds. As usual Dr Bannerman draws much of his material from published work, fully documented and handsomely acknowledged. In addition we are given fascinating accounts of the life histories of the species by leading authorities from Europe and America. Of particular interest to Scottish readers are the original contributions by Dr Pennie

on the Capercaillie, by Messrs Nethersole-Thompson and Richmond on Blackcock display, and by Dr Jenkins on the Red Grouse, with notes on moults and plumage by Dr Watson. Special attention is paid to the Scottish Ptarmigan in a concise, well written account by Dr Watson of his study of Ptarmigan in the Cairngorms and on Deeside. Appendices bring the work up to date for new birds. Dr Bannerman in a third appendix deals further with the Hastings Rarities Report (*Brit Birds* 55: 299-384)—surely best accepted now in that form.

While the short comparative list of Celtic bird names is perhaps of academic interest to a few readers, a list of local dialect names for all species would have been of more general use. There are rather more irritating mis-spellings and literals than one would expect. All the coloured plates in this volume are very good indeed, those of the Water Rail (pl. 16) and the grouse family (pl. 23) especially showing Lodge at his best.

Now that this great undertaking is complete some consideration of it as a whole may not be out of place. The work has been reviewed regularly during its progress by the leading bird and natural history journals and others throughout the world and, as one of the chief reasons for its production was avowedly to fulfil a life-long ambition of the late G. E. Lodge to illustrate a complete work on British Birds, the plates have been more closely scrutinised than usual. In this light it must be said that in critical circles the plates are regarded as inferior to the text. In particular, the plates of some of the smaller birds are not too successful, and said to be of little aid to identification. This is unfortunate and (in the opinion of the reviewer), unfair criticism. An artist paints birds as he sees them and this must be borne in mind. Those familiar with the work of Josef Wolf in the middle of the nineteenth century still respect his claims to be regarded as the greatest of all bird and animal painters. Lodge was contemporary with and long outlived a very fine group of painters who followed Wolf—Smit, Keulemans, Neale, Thorburn, Liljefors, of Sweden, Kuhnert of Germany, Grönwold, Frohawk, and Edwin Alexander, the Scot, perhaps the greatest bird painter of them all.

Lodge's best work in his prime was of the same class as these artists', particularly with the birds of prey and the game birds. If one compares, for example, Lodge's plate of the Arctic Tern in Vol. XI of Bannerman with that by him of the same bird in Kirkman's *British Bird Book* (1911-13), and even the game bird plates in Vol. XII with similar plates in Kirkman, certainly there is no doubt at all of the superiority of the earlier work. Much of the above artists' earlier work was reproduced by lithography (handcoloured on top grade chromo). But the Kirkman plates were produced by letterpress in the same way as the Bannerman plates, and the comparison is therefore fair. One cannot help feeling that had the illustrations been drawn by Lodge 40 or 50 years earlier there would have been less ground for criticism. But Lodge will always be remembered for his association with Dr Bannerman in this great work, which will assuredly take its place alongside the great illustrated works of the past on British Birds, from Edwards, Lewin, Selby, Meyer, Morris, Gould, Lilford, to Kirkman (a work which has never been fully appreciated and which Dr Bannerman's work perhaps most closely resembles) and Thorburn.

These criticisms are not intended to reflect on the production of the plates, which is consistently first class by modern standards, when cost is really the governing factor. The value for money of these twelve beautiful volumes is astonishing today, and the price could not possibly cover the cost of production without the special provisions made. Dr Bannerman's text, from first to last, has reached an extremely high standard of interesting, authoritative and, above all, readable bird ar-

ticles, both his own and those by leading ornithologists of many countries. For this we are grateful. The volumes are really above ordinary criticism, and we can only give thanks to Dr Bannerman, the memory of George Lodge, and all associated with the production of this splendid work, which will surely ever be regarded as a major contribution to ornithological literature, not only in English-speaking countries but throughout the world.

R. SEATH.

Birds of the Atlantic Islands. Vol. 1. A History of the Birds of the Canary Islands and of the Salvages. By D. A. Bannerman. Illustrated by D. M. Reid-Henry. Edinburgh and London. Oliver & Boyd, 1963. Pp. xxxi + 358; 17 plates (13 in colour); line drawings and 2 maps. 84/-.

When Kenneth Williamson wrote his classic *The Atlantic Islands* the reviewer in *British Birds* criticised the title on the grounds that it seemed more applicable to a book on the Azores. Dr Bannerman puts this to rights in his latest work, which will cover in two volumes the birds of all the islands of the eastern Atlantic from the Azores to the Canaries. The present volume, which is complete itself, deals with the Canary archipelago and the Salvage Islands.

In spite of the geographical situation of the Canary Islands the avifauna is predominantly Palaearctic rather than Ethiopian, and there are few species which an observer whose previous experience was limited even to the British Isles would fail to recognise. Three species however are endemic and restricted to the islands; these are Meade-Waldo's Chat, Berthelot's Pipit, and the famous Blue Chaffinch; but in addition to these the author retains specific rank for the Canarian Tit, which most modern authors regard as a race of Blue Tit, from which it differs considerably in both voice and appearance, and for the three Laurel Pigeons, two of which are found in the Canary Islands and the third in Madeira.

On the other hand, almost every species, of land bird at any rate, has diverged sufficiently from its nearest mainland neighbours to form recognisable Canarian subspecies, many of these varying between islands, and some such as the robin and chaffinch producing extreme and very distinctive forms. This is not surprising considering the tremendous differences in physical, climatic, and vegetational conditions in different parts of the archipelago. The one major criticism of the book is that it does not contain a separate section describing these features, and the unfamiliar reader can only piece together a very sketchy and incomplete picture of the islands. This omission the author excuses by saying that such an attempt would result in another book in itself and that he does not intend to repeat what he has already written in a previous book. This would be fair enough if the latter were easily accessible, but *The Canary Islands; their History, Natural History and Scenery* was published over forty years ago and is now a scarce and expensive item on the second-hand market; Bannerman's opinion that "the main features of the islands and their characteristics have not altered in the intervening years, though many minor changes have taken place," is certainly not shared by Lack and Southern, who took a much more gloomy view of the rapidity with which the changes on Tenerife were taking place.

Nature conservation seems to be pretty well non-existent in the Canary Islands, and many interesting and unique birds are being threatened, both by destruction of habitat and changes in land use as well as by direct persecution, which is a pity indeed, as Bannerman's lively descriptions of what has been recorded and his frequent references to the

unknown and uncertain will undoubtedly result in enquiries from many of his more adventurous readers as to how to get there. This of course is merely an indication of the success of the book.

The coloured plates by D. M. Reid-Henry are an exquisite combination of pictorial representation and textbook illustration, with a fine perspective which imparts solidity to the birds and such reality to the vegetation that one is almost cautious in turning the pages for fear of being spiked by the cactus thorns. All are good, but the reviewer would accord first place to a group of kite, buzzard and vulture feeding on a bovine corpse on an arid mountain crag, where one can almost smell the putrefaction and hear the flies buzzing.

The book includes a detailed bibliography and an interesting section on the ornithological exploration of the islands. A minor but slightly irritating fault of publication is the printing of the two outline maps in the middle of the introduction, whereas a volume of such high standard warrants a much better and more conveniently situated map.

This will undoubtedly be a standard work of reference for many years to come; it is a first class production in every way and one which its fortunate possessors will read with pleasure, and own with pride.

I. D. PENNIE.

Wildfowl in Great Britain. Monograph of the Nature Conservancy, No. 3. Edited by G. L. Atkinson-Willes. Illustrated by Peter Scott. London, H.M.S.O., 1963. Pp. xiv + 368; 43 plates (15 in colour); numerous text figures, maps and tables 45/-.

This third monograph of the Nature Conservancy, prepared by the Wildfowl Trust, is the culmination of 14 years of observation and counting by the thousands of people who take part in the National Wildfowl Counts throughout Britain. The mass of accumulated data must be enormous, and that it is presented in such readable form is a tribute to the editor.

Based on winter numbers, distribution, and habitat preferences of wildfowl, this book provides us with a novel approach to the Anatidae in Britain, and may be regarded as a "provisional scientific basis for a national policy of wildfowl conservation." The backbone of the whole project lies in the counting and ringing of wildfowl, mainly by amateur ornithologists (and I say this with respect and admiration), on a nationwide scale; their methods are detailed in Part I, and analyses of counts are given. Despite attempts to satisfy the reader that errors made by individual counters are usually small and tend to cancel out, there can be no doubt that fairly wide errors do occur—differences between individuals may be as much as 50%. One wonders, then, if there is complete justification in making direct comparisons between regions counted by different observers.

A picture of population trends has been obtained for several species by comparing counts on the same waters in different years; indices of relative abundance of Mallard, Wigeon, Teal, Pochard, and Tufted Duck, from 1948 to 1963, are shown graphically. These give valuable information at a glance, but direct comparisons could have been made easier by having them all on one page rather than spread over five.

The counts at particular places are presented as three measurements—(1) the "regular" population, (2) the "maximum" population, and (3) the "average peak" population. These are new measures of population size, with their own limitations, but are nevertheless more meaningful than many measurements in daily use.

Part II surveys the country on a regional basis. From the conserva-

tion point of view it is significant that the editor attaches as much importance to habitat as he does to distribution. A wealth of new information on numbers, distribution, habits and requirements of wildfowl is included in this section, but it is inevitably distracting to find that it reads as a rather disjointed series of essays. Certain regions are covered in such detail that this may well become a "shooters' gazeteer," thus fulfilling the fears of some ornithologists. On the other hand there are obvious gaps in our knowledge of other areas, such as the north and west of Scotland. One cannot help wondering to what extent the data illustrate also the distribution of counters as well as the distribution of birds. The editor and authors are, nevertheless, always aware of these shortcomings and it is refreshing to find that they seldom hesitate to admit them.

The survey is summarised in Part III, species by species, using various sizes of dots on distribution maps. These allow quick reference, and suffer only from an obvious lack of detail, especially at the upper limits of the scale.

In the final sections of the book the problems of conservation of wildfowl are considered—man's influence on habitat, the effect of wildfowl on modern agriculture, and the need for wildfowl refuges. At this stage the reader may be justified in having some doubts about wildfowl conservation practice. To propose conservation of species, whose ranges extend throughout much of the Palaearctic, solely on the basis of winter distribution and habitat preferences in Britain, seems unrealistic. Without a wider knowledge of the Anatidae in other parts of their range we must surely be scratching the surface of a much bigger problem. The recent international conference on wildfowl conservation, held at St Andrews, marks the awakening of a new interest in European wildfowl, whose management may be founded on information recorded in this book.

No review would be complete without praise of the colour plates by Peter Scott, which are of the highest quality. I would like to see this set made absolutely complete by the inclusion of the juvenile plumage of all the species.

The quality of this book, and the amount of information it contains, gives it a deserved place on the bookshelf of every ornithologist, conservationist, and wildfowler alike.

H. MILNE.

The Birds of South Roxburghshire. By W. S. Medlicott. Duplicated typescript. Printed privately, 1963. Pp. (23); map.

This useful check-list, consisting mainly of the author's own observations, includes three pages of general introduction and a helpful map. Copies have been deposited in the S.O.C. Library. The following summary of the more interesting notes on distribution includes further comments kindly supplied by the author. First published records for Roxburghshire are marked with an asterisk.

***Cormorant.** One or two occasionally on Tweed and Teviot.

Heron. No heronry known since one at Wells, near Bedrule, which had about ten nests in 1950, was destroyed by man about 1952.

Bittern. One stayed a day or two at Riddell in March 1960.

***Red-breasted Merganser.** Several noted on Tweed in past two or three years.

***Grey Lag Goose.** One shot at Wester Wooden about 1960. Occasional birds heard and seen flying south in October.

***Pink-footed Goose.** Large flocks pass over in autumn.

Sparrowhawk. Fairly regular breeder until 1959 and not uncommon, but now rare.

Goshawk. One at Fodderlie, Bonchester Bridge, 25th May 1952, and another, subject to acceptance by the Rarities Committee of *British Birds*, near Eggerston on 31st October 1959. The suggestion that this species has bred in south Scotland in recent years seems to be no more than a rumour.

Merlin. Very scarce; only an odd pair or two nest.

Kestrel. Common resident until 1959 but much scarcer since.

Black Grouse. Has increased in the last few years.

Corncrake. Seldom noted now, but has bred twice in past ten years.

Oystercatcher. A pair or two breed each year on an island in the Tweed below Rutherford House. Two nests reported on farmland. First published record of breeding in Roxburghshire.

Golden Plover. Much reduced in past ten years as a breeding species, with few nesting now.

***Lesser Black-backed Gull.** A few seen, mostly in late spring, but not really unusual in autumn or spring.

***Collared Dove.** Pair two miles north of Bonchester Bridge, near Rule Water on 27th March 1963 and two or three days before.

[**Nightjar.** Not recorded.]

Kingfisher. Has become rare in recent years, but a pair or two may still breed.

Green Woodpecker. A nest at Harwood, three miles south of Bonchester Bridge, in 1954 is the first report of breeding in Roxburghshire. Until 1960 Green Woodpeckers were found from Harwood all down the Rule Water to Jedburgh, and also round Hawick; much reduced since 1961, and hardly any now.

Great Spotted Woodpecker. Decreasing each year and only a few pairs breeding.

Raven. Frequently seen; at least one pair nests every year.

Magpie. Rare; no breeding records.

Jay. Seldom seen; no breeding records.

Sand Martin. Less than half the number now that formerly bred all along the river banks.

Dipper. Breeding commonly until about 1960, but has decreased rapidly until there are hardly any now.

Ring Ouzel. A few pairs nest, but almost rare and seems to be decreasing.

[**Lesser Whitethroat.** A bird found dead at Easter Wooden about mid May 1962 was identified as a Lesser Whitethroat, but not seen by the author. We have examined the evidence but feel that, as there is no other record for the county, it would not be prudent to regard the identification as beyond doubt.]

Pied Flycatcher. Bred fairly regularly until 1960 but has since become very scarce on all rivers.

Bullfinch. Has become common in recent years both as a breeding bird and in flocks of up to 50 in winter.

Tree Sparrow. Practically gone in 1962 and 1963 from the Rule Water, beside which they bred commonly until 1961.

EDITORS.

Instructions to Young Ornithologists. III. Bird Migration. By Robert Spencer. London. Museum Press (Brompton Library series), 1963. Pp. 126; figures, tables and 18 photographs. 12/6.

Of a previous volume in this series a reviewer considered the general title "Instructions to Young Ornithologists" inappropriate, because,

good as the book was, it did not attempt to suggest practical ways and means of increasing the reader's knowledge of the subject under discussion. No such criticism can be levelled at Robert Spencer's door; in *Bird Migration*—the latest volume in the series—he “instructs” his young and, we hope (for the book is this good), not so young readers, in just what can be done by experiment, by trapping and ringing, by watching birds pass across the moon's shining face, by studying the radar screen, and by simply standing on promontories; the instructions are clear and precise. Throughout, the welfare of the birds is given a sensible and happy priority.

Drawing on the vast amount of work already done on migration, the author unfolds his story in a lucid, easily understood way, avoiding oversimplification and never letting the “mystery” of his subject get the upper hand. From a general introduction to bird migration study he moves on to discuss the various kinds of migrational flights, long and short, up and down; the conditioning of the bird in readiness for its journey; the journey itself, with its many hazards; and, perhaps the most difficult migrational problem to interpret, certainly the most exciting and baffling, how the bird finds its way to and from its chosen goal. In this section we are offered examples of the work on bird navigation carried out by German workers, notably the late Dr Kramer, which, if perhaps rather complex to grasp on a first reading, are well worth an extra effort to understand. Our own Dr David Lack's highly significant work using radar as a tool in migration studies is rightly dealt with in some detail, and here Mr Spencer points out the limitations of this new study technique as well as its great present value and enormous future potential.

The author, as Ringing Officer of the British Trust for Ornithology, has facts and figures at his disposal which he uses to telling effect in his interpretation of ringing recoveries. He is at pains to advise caution in assessing results based on limited ringing recoveries; but when the recovery rate is reasonably high then, as he says, it is possible to be fairly confident about the validity of the results. He goes on to give a most useful and more or less up-to-the-minute account of the results obtained by ringing. In the final chapter he introduces the young bird-watcher, and all newcomers, to the work of the bird observatories, showing what the student can do, as a recorder of bird movement, to increase the pool of information continuously accumulating at any one station.

Widely experienced in his subject, Robert Spencer writes accurately and sensibly, wisely letting his enthusiasm come through to the reader. The result is a capital book. It remains to be said that there is a useful note on further reading, a list of British bird observatories and, most important, an excellent index. The photographs, most of them placed together in the middle of the book, will be of varying assistance to the enquiring ornithologist.

WILLIAM AUSTIN.

Birdwatching. By E. A. R. Ennion. London, Pelham Books (Michael Joseph), 1963. Pp. 138; 8 plates and 67 text figs. 16/-.

The library of guides for beginners grows incessantly. Dr Ennion's little book is a useful introduction for all who approach birdwatching as a serious scientific hobby rather than a recognition game. After a brief chapter on the need to identify correctly and observe closely, we are given an outline of avian evolution, structure, flight, migration and dispersion, breeding, communication, food and survival, all liberally spiced with telling

example (often from the author's own experience in Northumberland and elsewhere) and full of the most stimulating suggestions for amateur study on various aspects of bird behaviour and biology. It is very well done. Only occasionally was this reviewer inclined to rebel—even Dr Ennion's enthusiasm could not persuade him that drawing flight curves is either very interesting or very useful or that the spread of the Collared Dove from Smyrna to Stornoway has much to do with climatic amelioration. Some of the author's illustrations, too, are below his usual high standard, several being badly lettered, unreasonably reduced in scale and overcrowded on the page. These are details: what is much more important is the book's sustained zest and intellectual curiosity about birds—if this does not fire the starter nothing will, and if the advanced student does not also feel refreshed he must be far gone with television decay. We could do with more writers like this.

T. C. SMOUT.

Requests for Information

Scottish Heronries Census 1964. The B.T.O. is making a National Census of Heronries this year. The Council of the S.O.C. has agreed to support this and has appointed Charles P. Rawcliffe as Organiser for Scotland. It is hoped that anyone who possibly can will help, so that coverage will be as complete as possible. The previous census of Scottish Herons was made in 1954 (see *Bird Study* 5: 90), and among other changes since then it is feared that the hard weather last winter and the effects of toxic chemicals on the land may have had a marked influence on the population. Observers will be asked to visit known heronries, locate new ones, and complete a census card for each. Please write as soon as possible to C. P. Rawcliffe, 35 Comely Bank Road, Edinburgh 4, indicating the area which you expect to be able to cover, as this helps greatly in showing where extra helpers are needed.

Rock Dove Enquiry. Those who have enquiry forms due for return by 30th September 1963 should send them in by 30th September 1964. Others willing to look at pigeons on any stretch of coast in Scotland (including the islands) are invited to write for forms to Raymond Hewson, 170 Mid Street, Keith, Banffshire.

Cormorants. As there has been no recent survey of Scottish Cormorant colonies, information is now being collected. Details of any counts made in 1960-64, or the location of little-known colonies, would be welcomed by R. W. J. Smith, 33 Hunter Terrace, Loanhead, Midlothian.

Assistant for R.S.P.B. Scottish Office

A young man, preferably between 25 and 30, is required as Assistant to the R.S.P.B. Scottish Representative. Salary between £800 and £1000 according to qualifications and experience. Full particulars from George Waterston, 21 Regent Terrace, Edinburgh 7.

Official Section

THE SCOTTISH ORNITHOLOGISTS' CLUB

CONFERENCE RESOLUTION

A resolution urging the withdrawal of chlorinated hydrocarbon pesticides, sent to the Secretary of State for Scotland from the Annual Conference (see 2: 458), received the following acknowledgment:

Department of Agriculture & Fisheries for Scotland,
Broomhouse Drive, Edinburgh 11.

Dr I. D. Pennie.

11th December 1963

Dear Sir,

Chemicals and Wildlife

The Secretary of State for Scotland directs me to thank you for your letter of 27th October drawing attention to the decision of a recent representative meeting of the Scottish Ornithologists' Club that the Government should be pressed—as a matter of urgency—to adopt a policy which will ultimately lead to the complete withdrawal of all chlorinated hydrocarbon pesticides and to the immediate restriction of their use in agriculture, forestry, horticulture and private gardening.

The Government fully appreciate that indiscriminate use of the poisons you mention would have bad effects on wildlife. That is why they have urged upon farmers the need to exercise extreme care in the chemical treatment of cereal seeds. This message is being constantly brought to the notice of farmers both through the press and in leaflets that are sent to them by the Department of Agriculture and Fisheries for Scotland. A copy of a revised leaflet that has—in the past fortnight—been sent to all the farmers in Scotland is enclosed for your information.

I need hardly say that the systematic study of the subject by the Advisory Committee on Poisonous Substances used in Agriculture and Food Storage is continuing.

Yours faithfully,

(Signed) S. M. WARD.

At a meeting of Council held on 14th January 1964 the following reply was approved:

The Secretary of State for Scotland,
St Andrews House, Edinburgh.

14th January 1964

Dear Sir,

Pesticides and Wildlife

The Council of the Scottish Ornithologists' Club, at a meeting held in Edinburgh on 14th January, considered your reply of 11th December 1963 to the Resolution sent to you on 27th October 1963, pressing the Government "as a matter of urgency to adopt a policy which will ultimately lead to the complete withdrawal of all chlorinated hydrocarbon pesticides, and to the immediate restriction of their use in agriculture, forestry, horticulture, and private gardening."

We are, of course, well aware of the voluntary ban on the use of aldrin, dieldrin and heptachlor for dressing seed sown in Spring by farmers; and note the admission in the pamphlet sent by the Department of Agriculture that "these substances are particularly harmful to wild and game birds and other wild life." In spite of this admission, the Government

published a small booklet last Spring—"Chemicals for the Gardener"—describing as "safe" many garden chemicals known to be highly toxic to birds and wildlife. This booklet has not yet been withdrawn despite protests from wildlife conservation organisations.

We consider the dangers to garden birds to be manifest; and that is why we called for an immediate restriction on the use of chlorinated hydrocarbon pesticides in private gardening. We have now heard that Fisons and Scottish Agricultural Industries have withdrawn aldrin, dieldrin, and heptachlor from their 1964 farm and trade catalogues, recognising the dangers to all forms of life from these highly persistent poisons. Shell Chemical Industries, the sole remaining source of supply, are still marketing the three chemicals, and we trust that the Government will bring pressure to bear on this firm to discontinue their sales.

We also consider that it is urgent and important in the interests of all forms of Scottish wildlife—wild and game birds as well as game fish—that arrangements should be made available in Scotland through the D. of A. and F. for Scotland for the analysis of corpses suspected of being poisoned by toxic chemicals. At present, the only facilities available are at Monks Wood Experimental Station, Abbots Ripton, Huntingdonshire, where, because of the volume of material being sent in, there is a very long delay. Further, corpses sent there from Scotland often arrive in a state of putrefaction and unfit for analysis owing to postal delays. We understand that in England and Wales, the Min. of Ag., Fish and Food, at Tolworth will investigate deaths suspected as being due to toxic chemicals. It seems only reasonable that there should be a similar arrangement in Scotland.

For the S.O.C. Council.

(Signed) I. D. PENNIE, President.

(Signed) W. J. EGGELING, Vice-President.

Summer Excursions

Important notes

1. Members may attend excursions of any Branch in addition to those arranged by the Branch they attend regularly.
2. Where transport is by private cars please inform the organisers if you can bring a car and how many spare seats are available. All petrol expenses will be shared.
3. Please inform the organiser in good time if you are prevented from attending an excursion where special hire of boats or buses is involved. Failure to turn up may mean that you are asked to pay for the place to avoid additional expense for the rest of the party.
4. Please bring picnic meals as indicated (in brackets) below.

ABERDEEN

For all excursions please notify Culterty Field Station, Newburgh (Tel. Newburgh 260), one week in advance. All transport will be by private cars.

Sunday 26th April

VISIT to a LEK—Leader, N. Picozzi. This must be a small party. Further details on request.

Sunday 17th May

BLACKHALL FOREST (subject to permission)—Leader, Dr D. Jenkins. Meet at Blackhall main gate 10.30 a.m. (lunch and tea).

Sunday 31st May

FOWLSHEUGH (walk along cliffs from Crawton)—Leader, D. Garvie.
Meet at Crawton 11 a.m. (lunch).

Sunday 28th June

DINNET (lochs and woodland)—Leader, to be arranged. Meet at Dinnet
10.30 a.m. (lunch and tea).

AYR**Sunday 26th April**

HAMILTON, LANARKSHIRE—Joint excursion with Glasgow Branch.
For arrangements see under Glasgow.

Saturday 9th May

BARR MEADOWS, RENFREWSHIRE—Joint excursion with Glasgow
Branch. For arrangements see under Glasgow.

Wednesday 20th May

AUCHINCUIVE ESTATE, by AYR (by kind permission of the Prin-
cipal, West of Scotland Agricultural College)—Leader, Dr M. E.
Castle. Meet near bus shelter at main entrance to College on Mauch-
line road, 7 p.m.

Saturday 6th June

TAIRLAW BRIDGE and LOCH BRADDEN—Leader, R. M. Ramage.
Meet Tairlaw Bridge near Straiton 3 p.m. (tea).

Saturday 20th June

GIRVAN, BALLANTRAE and GLENAPP ESTATE (by kind permis-
sion of Lord Inchcape)—Leaders, R. M. Ramage and Miss M. H.
Shanks. Meet Wellington Square, Ayr, 2.30 p.m., or Shalloch Corner,
 $\frac{1}{2}$ mile south of Girvan, 3.15 p.m. (Bring substantial tea as excursion
will have a late finish; it is hoped to see and hear Nightjars).

Saturday 4th July

HORSE ISLAND (by kind permission of the R.S.P.B.)—Leader, G.
Fraser. Boat leaves Ardrossan Harbour, 2.30 p.m. Fare approx. 5s.
Applications by 27th June to Dr M. E. Castle, Mount Hamilton, Auch-
encruive, by Ayr (tea).

Saturday 12th September

FAIRLIE FLATS—Joint excursion with Glasgow Branch. Leader, G.
Richards. Meet 11.30 a.m. in car park on seaward side of A78 (coast
road) south of Fairlie and about 1 mile north of road to Hunterston
Power Station (lunch).

DUMFRIES**Sunday 24th May**

ESKDALE (Langholm moor and Esk valley)—Leaders, R. T. Smith
and P. M. Gordon. Cars meet opposite Town Hall, Lockerbie, 11.30
a.m. (lunch and tea).

Sunday 7th June

THE HIRSEL, COLDSTREAM (by kind permission of Sir Alec Doug-
las Home)—Leader at Hirsell, Major The Hon. Henry Douglas Home.
Final arrangements cannot yet be made, and applications to attend
should be made to H. M. Russell, Branch Secretary, as early as pos-
sible after 1st May (lunch and tea).

Sunday 5th July

FARNE ISLANDS, NORTHUMBERLAND Cars rendezvous at the
harbour, Seahouses, 11.30 a.m. Numbers restricted to boat seating, so
please advise H. M. Russell, Branch Secretary, in good time (lunch
and tea).

Sunday 9th August

SCAUR GLEN, DUMFRIESSHIRE. Summer family picnic. Cars meet at Penpont village 2 p.m. (tea).

Sunday 13th September

CAERLAVEROCK NATURE RESERVE (by kind permission of the Nature Conservancy) (autumn migrants)—Leader, E. L. Roberts. Cars meet, Eastpark Farm, 2 p.m. (tea).

DUNDEE

When private cars are to be used, applications for all excursions should be made one week in advance to Jack Scobie, 11 Nevill Street, Dundee (Tel. Dundee 86209).

Sunday 22nd March

STORMONT and CLUNIE LOCHS—Meet City Square, 10 a.m. Transport by private cars (lunch).

Sunday 26th April

MONTROSE BASIN—Meet City Square, 10 a.m. Transport by private cars (lunch).

Weekend 15th/18th May

ROTHIEMURCHUS and CAIRNGORMS—Transport by private cars. Provisional booking made at the Dell Hotel for party of 12. Details later.

Sunday 21st June

ISLE OF MAY—Number limited to 12. Details of departure to be made known when Tay Ferry sailings confirmed.

Sunday 23rd August

MONTROSE BASIN—Meet City Square, 10 a.m. Transport by private cars (lunch and tea).

Sunday 20th September

EDEN ESTUARY—Details of departure to be made known when Tay Ferry sailings confirmed.

EDINBURGH**Sunday 10th May**

ABERLADY BAY NATURE RESERVE (spring migrants)—Leaders, W. K. Birrell and C. N. L. Cowper. Meet at Timber Bridge, 2 p.m. (tea).

Saturday 30th May

PENICUIK HOUSE GROUNDS (subject to permission of Sir John D. Clerk, Bart.)—Leader, R. W. J. Smith. Meet outside Penicuik Post Office, 2.30 p.m. (tea).

Saturday 6th June

ISLE OF MAY—Numbers limited to 12. Applications by 30th May to Alastair Macdonald, Hadley Court, Haddington (Tel. 3204). Party meets and sails from West Pier, Anstruther, 11.40 a.m. prompt. Cost of boat approx. 9s. (lunch and tea).

Saturday 20th June

ISLE OF MAY—Arrangements as for 6th June. Applications by 13th June.

Saturday 4th July

BASS ROCK (by kind permission of Sir Hew Hamilton Dalrymple, Bart.)—Leader, Ian Balfour-Paul. Applications by 27th June to Miss Olive Thompson, 32 Hermitage Gardens, Edinburgh 10 (Tel. MORning-side 6904). Boat leaves North Berwick harbour, 2.30 p.m., and returns approx. 7 p.m. Tickets (cost approx. 8s) must be purchased at the Har-

hour Office before embarking. If weather is uncertain please check with Miss Thompson on morning of excursion in case of cancellation (tea).

Saturday 5th September

ABERLADY BAY NATURE RESERVE (autumn migrants)—Leaders, W. K. Birrell and C. N. L. Cowper. Meet at Timber Bridge, 2.30 p.m. (tea).

GLASGOW

Sunday 26th April

HAMILTON BIRD SANCTUARY (by kind permission of the Town Council of the Burgh of Hamilton)—Joint excursion with Ayr Branch. Leader, D. Stalker. Meet at gates leading to Municipal Golf Course, 2 p.m.

Saturday 9th May

BARR MEADOWS—Joint excursion with Ayr Branch. Leader, R. Caldwell. Meet at Lochwinnoch Station Yard, 2.30 p.m. (tea).

Saturday 6th June

LITTLE CUMBRAE (by kind permission of Little Cumbrae Estates Ltd)—Leader, Miss W. U. Flower. Boat leaves Fairlie at noon, fare approx. 5s. Applications by 23rd May to G. L. A. Patrick, 11 Knollpark Drive, Clarkston, Glasgow (lunch and tea).

"The permission to visit Little Cumbrae is granted on condition that the company does not warrant the safety of the premises and is under no obligation to protect you from injury or damage by reason of the state of the premises. By entering the premises you will be deemed to have accepted these conditions."

Members participating in this excursion will be expected to sign an acknowledgment that they have read and agreed to the conditions.

Saturday 13th June

SOUTH AYRSHIRE CLIFFS—Leader, G. L. A. Patrick. Meet at Mc Donald Hotel car park, Eastwood Toll, Glasgow, 2 p.m. Applications by 30th May to G. L. A. Patrick, stating whether transport is required or available (tea).

Wednesday 17th June

HORSE ISLAND (by kind permission of the R.S.P.B.)—Leader, G. Fraser. Boat leaves Ardrossan Harbour, 6.30 p.m., fare approx. 4s. Applications by 23rd May to G. L. A. Patrick.

Saturday 27th June

HORSE ISLAND (by kind permission of the R.S.P.B.)—Leader, G. Fraser. Boat leaves Ardrossan Harbour, 2.30 p.m., fare approx. 4s. Applications by 6th June to G. L. A. Patrick (tea).

Saturday 12th September

FAIRLIE FLATS—Joint excursion with Ayr Branch. For arrangements see under Ayr.

Sunday 20th September

HAMILTON BIRD SANCTUARY (by kind permission of the Town Council of the Burgh of Hamilton)—Leader, M. Forrester. Arrangements as for 26th April.

INVERNESS

For details of excursions apply to Branch Secretary, James MacGeoch, 11 Damfield Road, Inverness.

ST ANDREWS

Applications for all excursions to Miss M. M. Spires, 2 Howard Place, St Andrews (Tel. 852). Transport will be arranged.

Saturday 16th May

KILCONQUHAR LOCH. Leave St Andrews Bus Station, 2 p.m. (tea).

Saturday 30th May

THE OCHILS. Leave St Andrews Bus Station, 1.30 p.m. (tea).

Sunday 7th June

ST SERF'S ISLAND (subject to permission from Kinross Estates).
Boats leave the Sluices, Scotlandwell, 11 a.m. (lunch and tea).

Saturday 27th June

TENTSMUIR. Leave St Andrews Bus Station, 2 p.m. (tea).

WEEKEND EXCURSION TO AVIEMORE

The weekend excursion to Speyside will be held in the Dell Hotel, Rothiemurchus, Aviemore, from 1st to 3rd May 1964.

Accommodation for up to twenty members has been reserved at inclusive terms of 55s per person, as follows: bed on Friday 1st; breakfast, packed lunch, dinner and bed on Saturday 2nd; breakfast and packed lunch on Sunday 3rd.

Members wishing to attend should book direct with Mrs Grant, Dell Hotel (Tel. Aviemore 216), and inform her if they require dinner on Friday night (extra). A stamped addressed postcard should be enclosed for reply. Members may bring guests. Arrangements for transport by private cars should be made with Branch Secretaries. Thermos flasks should be brought.

OPERATION OSPREY 1964

The R.S.P.B. will again require the assistance of volunteer wardens this summer to guard Ospreys in Speyside and to act as guides to the public visiting the Observation Post in Loch Garten Bird Sanctuary.

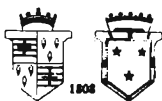
Bookings have come in well, but there is a shortage of wardens between May and July, inclusive. Wardens are accommodated at a base camp where food, tents, and camping equipment are provided free.

Caravan wanted: The R.S.P.B. is in urgent need of an extra caravan for use at the base camp. Anyone wishing to donate, loan, or hire a caravan, or wishing to help as a warden, should write to George Waterston, R.S.P.B. Scottish Office, 21 Regent Terrace, Edinburgh 7

BIRD BOOKSHOP

Members are reminded that profits on all purchases from the S.O.C. Bird Bookshop benefit Club funds. All books are sent post free. Please write for the latest list. Recent additions include:

- ATKINSON-WILLES, G. L. 1963. Wildfowl in Great Britain. 45s.
 BANNERMAN, D. A. 1963. Birds of the Atlantic Islands. Vol. I. 84s.
 HVASS, Hans. 1961. Birds of the World. 21s.
 PALMER, R. S. 1962. Handbook of North American Birds. Vol. I. 5 gns.
 PETERSON, R. T. 1961. A Field Guide to Western Birds (America). 38s.
 1963. A Field Guide to the Birds (East of Rockies). 38s.
 SALOMONSEN, F. 1963. (Checklist of Danish birds). 20s.
 SOUTHERN, H. N. 1963. Handbook of British Mammals. 37s 6d.
 THORPE, W. H. 1963. Learning and Instinct in Animals. 63s
 TINBERGEN, Niko. 1962. Social Behaviour in Animals. 15s.
 WILLIAMS, J. G. 1963. Field Guide to Birds of E. & Cent. Africa. 45s.



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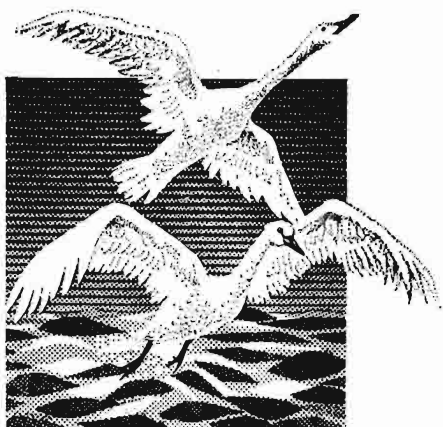
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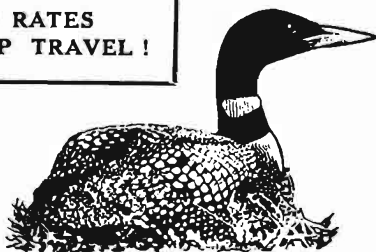
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NOTICE TO CONTRIBUTORS

All contributions should be sent to Andrew T. Macmillan, 66 Spylaw Bank Road, Edinburgh 13. Attention to the following points greatly simplifies production of the journal and is much appreciated.

1. Papers should if possible be typed with double spacing. All contributions should be on one side of the paper only.

2. Topical material for Current Notes should reach the Editors **before the end of March, June, September and December**, at which time they begin to compile this section. All other notes should be sent promptly but important items can be fitted in until a month or so after these dates.

3. Proofs will normally be sent to authors of papers, but not of shorter items. Such proofs should be returned without delay. If alterations are made at this stage it may be necessary to ask the author to bear the cost.

4. Authors of full-length papers who want copies for their own use **MUST ASK FOR THESE** when returning the proofs. If requested we will supply 25 free copies of the issue in which the paper is published. Reprints can be obtained but a charge will be made for these.

5. Particular care should be taken to avoid mistakes in lists of references and to lay them out in the following way, italics being indicated where appropriate by underlining.

DICK, G. & POTTER, J. 1960. Goshawk in East Stirling. *Scot. Birds* 1:329.
EGGELING, W. J. 1960. *The Isle of May*. Edinburgh and London.

6. English names should follow *The Handbook of British Birds* with the alterations detailed in *British Birds* in January 1953 (46:2-3) and January 1956 (49:5). Initial capitals are used for names of species (e.g. Blue Tit, Long-tailed Tit) but not for group names (e.g. diving ducks, tits). Scientific names should be used sparingly (see editorial *Scottish Birds* 2:1-3) and follow the 1952 B.O.U. *Check-List of the Birds of Great Britain and Ireland* with the changes recommended in 1956 by the Taxonomic Sub-Committee (*Ibis* 98:158-68), and the 1957 decisions of the International Commission on Zoological Nomenclature (*Ibis* 99:369). When used with the English names they should follow them, underlined to indicate italics, and with no surrounding brackets.

7. Dates should normally be in the form "1st January 1962", with no commas round the year. Old fashioned conventions should be avoided—e.g. use Arabic numerals rather than Roman, and avoid unnecessary full stops after abbreviations such as "Dr" and "St".

8. Tables must be designed to fit into the page, preferably not sideways, and be self-explanatory.

9. Headings and sub-headings should not be underlined as this may lead the printer to use the wrong type.

10. Illustrations of any kind are welcomed. Drawings and figures should be up to twice the size they will finally appear, and on separate sheets from the text. They should be in Indian ink on good quality paper, with neat lettering by a skilled draughtsman. Photographs should either have a Scottish interest or illustrate contributions. They should be sharp and clear, with good contrast, and preferably large glossy prints.

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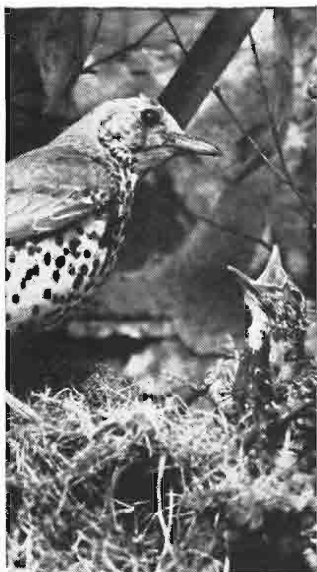
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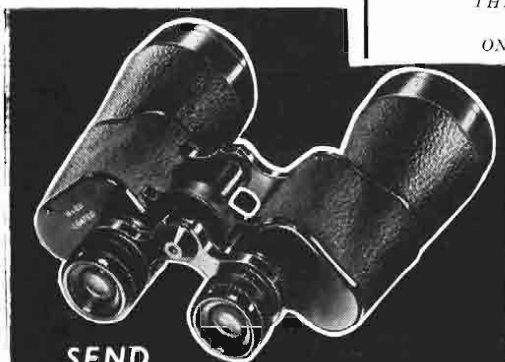
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