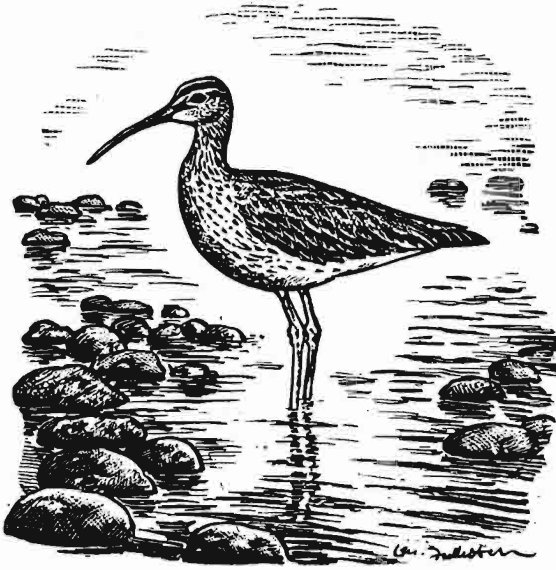


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The Journal of The Scottish Ornithologists' Club

Vol. 3 No. 2

Summer 1964

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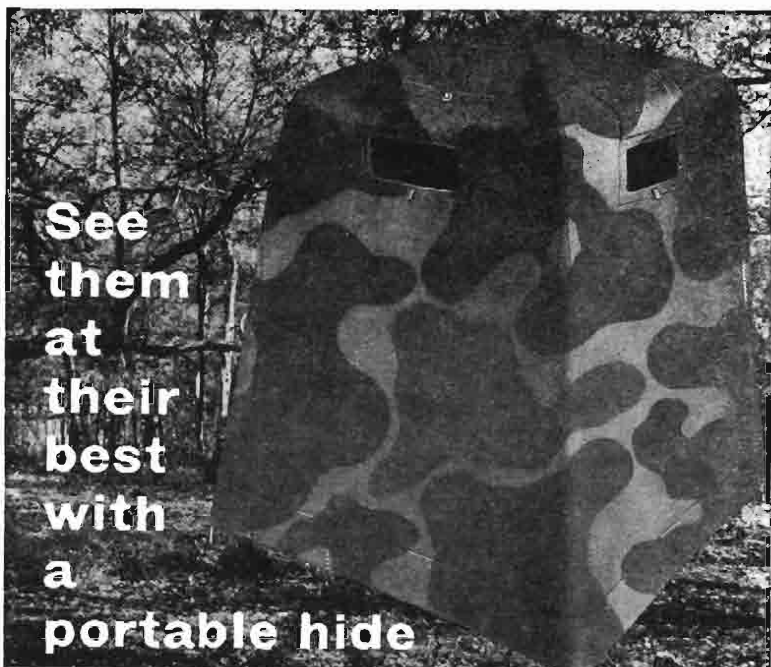
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Vol. 3 No. 2

Summer 1964

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

Editorial

Pesticides. Anyone reading the newspapers in recent months must have been aware of the growing fears expressed by many people about the use of certain persistent pesticides in agriculture and otherwise. Comment, including leading articles in various national dailies, has been extensive, and one could not complain of lack of publicity. Undoubtedly this has had the effect of making the Government very sensitive to the whole subject.

The fourth report of the B.T.O. and R.S.P.B. on toxic chemicals, *The risks to bird life from chlorinated hydrocarbon pesticides*, appeared recently, adding to the growing volume of evidence of the dangers. It was rather overshadowed by the publication of the report by the Advisory Committee on Poisonous Substances used in Agriculture and Food Storage, *Review of the persistent organochlorine pesticides* (H.M.S.O., 4/6d). Anyone who aspires to understand something of the question marks and difficulties surrounding the whole subject should read this review. It expresses concern that traces of these persistent organochlorine poisons are being found in so many situations and says that accumulative contamination of the environment should be curtailed. As a result of the Committee's recommendations the Government has taken steps to ban the use of Aldrin and Dieldrin (among the worst offenders). These important moves will be backed by further investigation, and the position will be reviewed again in the future.

Osprey troubles. When R.S.P.B. representatives examined the Loch Garten Ospreys' eyrie at the end of March they found that the tree had been cut more than halfway through with a power saw. Though now held together with three iron bands it is feared that the tree may die. The fact that the cut was made on the west side of the trunk was possibly all that saved it from being blown down in easterly gales at the time. Were

the Ospreys to be driven away to some other place by such senseless vandalism it would not be naturalists alone who would regret it: the birds are a considerable tourist attraction (23,000 people visited the observation post in 1962) and bring business to hotels and shops in the area. What with toxic chemicals, egg collectors, thoughtless trespassers, unseasonable gales, and vandals with power saws, the Ospreys have to put up with a lot.

Loch Leven. This famous water has now been declared a National Nature Reserve. Loch Leven is probably the most important freshwater area in Britain for migrant and breeding wildfowl, besides being famous in history and for the quality of its trout. With the opening of the Forth road bridge only a few months away it is heartening to know that Loch Leven will now be protected from undue disturbance and commercial development. The Nature Conservancy has appointed a warden, and byelaws are being drafted.

Fined for shooting Collared Dove. In Haddington Juvenile Court a 14-year-old boy admitted shooting one of a small colony of Collared Doves at Gullane on 27th December 1963 after being warned not to shoot wild birds with his airgun. The boy, who had a previous conviction, also admitted having an uncovered airgun in his possession although under 17 years of age. On each of the two charges fines of £8 were imposed, to be paid by the parents, with an alternative of ten days in prison. The gun would have been forfeited but had already been sold when the case was heard. The Collared Dove is protected by special penalties (£25 per bird, egg or nest) under the Protection of Birds Act 1954.

Slide contest. We were delighted to read that one of our younger contributors, S. J. Clarke of Manderston, Duns, had won a £40 first prize in a colour slide competition for amateurs, organised by the Edinburgh and District branch of the Photographic Dealers' Association. His bird study in snow was selected from 425 entries.

Scottish Game Fair. On 24th and 25th July the Scottish Landowners' Federation and the Country Landowners' Federation are holding the seventh annual Game Fair at Blair Drummond, 5 miles north-west of Stirling (adults 10/-; children 5/-). This is the first time the Game Fair has been held in Scotland. Though mainly for the field sports enthusiast this is a show that should be of interest to all countrymen. Attractions include demonstrations, competitions and exhibits concerned with sports and interests such as shooting, fishing, gundogs, stalking, falconry (it is hoped to have a trained Golden Eagle on show), and archery. There will also be features on conservation and research, and the R.S.P.B. will have an exhibit.

Current literature. The following papers published recently have a particularly Scottish interest:

The summer and autumn Crossbill irruption of 1962. Part 2. Occurrences by counties. K. Williamson, 1963. *Bird Migration* 2: 329-340 (concluded from pp. 252-260). Lists many Scottish records.

Observations on the St Kilda Wren. W. E. Waters, 1964. *Brit. Birds* 57: 49-64.

Insecticides and Scottish Golden Eagles. J. D. Lockie & D. A. Ratcliffe, 1964. *Brit. Birds* 57: 89-102. In 1961-63 only 29% of pairs reared young (previously it was 72%), and chlorinated hydrocarbons (from sheep dip) in sheep carrion seem to be to blame.

Notes on the behaviour of the Red Grouse. A. Watson & D. Jenkins, 1964. *Brit. Birds* 57: 137-170. Based on study in Angus.

The Nature Conservancy and its work : with mainly ornithological examples

W. J. EGGELING

Introduction

When birdwatching first became popular as a pastime there was a tendency for its devotees to confine their attentions to birds in isolation, without paying much attention to the birds' relationships with their surroundings and other wildlife. Recently the approach has broadened, so that the birdwatcher is now more akin to the field naturalist of a century ago who combined a knowledge of birds and plants with an interest in their habitats. More and more, the intelligent birdwatcher is becoming an ecologist.

Ecology is the study of how living creatures fit into their environment: the application of this knowledge is conservation. It is the job of the conservationist to find out how nature behaves and to use the facts he discovers to enable man to live in harmony with it. Conservation is the application to the wise use of natural resources of an understanding of how wild things are related not only to one another but also to the soil, water and other factors on which they all depend.

The organisation officially responsible for nature conservation in this country is the Nature Conservancy—which should not however be thought of so much as a body which does conservation as one which enables and encourages conservation to be done. Most people, although they may not yet be conscious conservationists, are willing to take an active part in practising conservation when they have been shown what it is all about and how they can help. The Conservancy's share in this is to unravel the problems, and devise and test treatments for meeting conservation needs. How widely conservation succeeds must depend both on the quality of the Conservancy's research and on the effectiveness of its advice and the extent to which country users of all sorts can be persuaded to follow it.

The past two decades have seen great advances in almost every field of human activity. New discoveries in medicine, the introduction of mechanical aids, the findings of work studies, improved social conditions in general—all have contributed to allow more free time for leisure and a longer span of life in which to enjoy it. In many ways, however, man's reach is now in danger of exceeding his grasp, and nowhere is this more obvious than when he seeks to develop his surroundings. The facilities available to him as farmer, forester, builder, sportsman and recreation-seeker give him unlimited scope to seek, find and alter every part of the surface of the earth. It was because of an increasing awareness of this danger—because we were seen to be losing irreplaceably, on a nation-wide scale, so much of our countryside and of all that contributes to it, and because also of a growing realisation that we knew remarkably little of the biological processes going on around us, and of the part these play in our lives—that the Nature Conservancy was set up in 1949.

The Nature Conservancy

The Nature Conservancy is a body incorporated by Royal Charter. Its main functions are: (i) to provide scientific advice on the conservation and control of our natural flora and fauna; (ii) to establish, maintain and manage nature reserves, including physical features of scientific interest; and (iii) to organise and develop the research and scientific services necessary for this work. In addition the Conservancy has statutory responsibilities under the National Parks and Access to the Countryside Act, and subsequent legislation, the most important of which is the duty of notifying to local planning authorities all places of special scientific interest within their areas.

Scientifically, the Nature Conservancy ranks with the Medical and Agricultural Research Councils and the Department of Scientific and Industrial Research as one of the four

Research Councils under the supervision of the Privy Council. The Minister for Science, as Chairman of the Committee of the Privy Council for Nature Conservation, is answerable to Parliament for the affairs of the Conservancy. In Scotland, where a Scottish Committee is provided for specifically by the Royal Charter, the Secretary of State has a similar brief.

Responsibility for the policy and direction of the Conservancy rests with a directing council of about eighteen members, which supervises the actions of the corporate body. It is served by three territorial committees—the Scottish Committee, and one each for England and Wales. Most of the members of the central council are members also of one or other of the territorial committees or of the Scientific Policy Committee, which considers all matters concerning the Conservancy's policy in regard to conservation and research. The Conservancy has powers to make byelaws, enter into agreements and, in default of agreement, acquire land compulsorily—a power it has never used. The Conservancy's composition has regard to the wide range of its duties. It includes at present a Member of Parliament from the Government backbenches and one from the Opposition, the Chairman of the National Parks Commission, two members of the House of Lords and eight professors in biological or geographical sciences. Five members are Fellows of the Royal Society, and many are chairmen or prominent members of national bodies concerned with science or the land. Altogether more than fifty people of experience and knowledge over a broad field, drawn from all parts of the country, share in guiding the development of the Conservancy. All service on the Conservancy and its committees is given free.

Implementing the policy of the Nature Conservancy, and responsible for the day-to-day work, are the salaried members of its staff. These are public servants, the Conservancy being what is known as a Grant-aided Body working on a grant (currently about £700,000 a year) voted annually by the Treasury. The Conservancy employs approximately 320 staff, of whom rather more than a third are scientists engaged in research or conservation. Roughly half the remainder, comprising land agents, wardens and estate workers, with technical and administrative staff, are based at headquarters in London and Edinburgh; of the rest, about half are located in research stations and half scattered throughout the country. In Scotland the total staff is about 60, again about a third being scientists.

The setting up of the Conservancy was the result of the acceptance in principle by the Government of the recommendations contained in the Reports of two Wild Life Conservation Committees published in July 1947, one dealing with

England and Wales (Cmd. 7122) and the other with Scotland (Cmd. 7235). The findings of the two committees were essentially similar: each stressed the need for effective legislation to ensure wildlife conservation, and both recommended the setting up of a biological or wildlife service and the establishment of a series of nature reserves.

The proposed biological service became the body known as the Nature Conservancy. Let us consider the progress it has made in the task of obtaining a representative series of nature reserves and notifying sites, confining our attention henceforward to Scotland.

Nature Reserves and S.S.S.I.s

The Final Report of the Scottish Wild Life Conservation Committee (Cmd. 7814), published in 1949, recommended that 50 named areas in Scotland be set up as National Nature Reserves (N.N.R.s). This list has been used by the Conservancy as its basis for reserve acquisition, but has been modified over the years by the exclusion of areas found to be below the standard of the rest and by the inclusion of others not previously recognised to be important. The revised list comprises 42 areas of N.N.R. stature, to which must be added 18 "A" Sites (areas of similar quality to N.N.R.s but already in the safe keeping of bodies like the National Trust for Scotland, the Department of Agriculture and Fisheries for Scotland, and the Forestry Commission), giving a total of 60 proposed N.N.R.s or equivalent. So far 28 of the 42 proposed N.N.R.s have been acquired or negotiated (only about a quarter are actually owned by the Conservancy), whilst safeguarding letters have been exchanged for 13 of the 18 "A" Sites, recognising them to have the same scientific status as the National Reserves. Thus in the fourteen years since the Conservancy was established more than two-thirds of the reserves envisaged in Scotland have been established. They cover 173,814 acres, of which 48,821 acres are owned outright.

In deciding which areas should be sought as nature reserves the Conservancy's aim has been to select a representative range of the main natural and semi-natural habitats in the country. The reserves serve not only as living museums of great educational value but also as outdoor laboratories for wildlife research, and as places where experiments in different types of conservation treatment can be conducted.

One other category of reserve must be mentioned; the Local Nature Reserves (L.N.R.s) established and managed by County Councils in consultation with the Conservancy. There are so far only two L.N.R.s in Scotland—Aberlady Bay in East Lothian, and the Castle and Hightae Lochs at Lochmaben—but others are projected. The Forestry Commission's

National Forest Parks must not be forgotten either in assessing the general picture.

An important consideration in a nature reserve is permanence, so that outright ownership is always desirable. In the absence of this the Conservancy will however enter into long-term leases or agreements running with the land and binding on subsequent owners. The basic form of agreement can be varied to meet different circumstances: it provides for a small annual payment for the rights conferred on the Conservancy, with separate compensation if, for example, shooting rights are terminated by agreement, or saleable timber is kept standing to meet the Conservancy's requirements. The underlying objective of management is, just as in reserves acquired by lease or purchase, generally to maintain the area so far as possible in its existing condition—or as it was before man destroyed its variety; to conserve the fauna and flora; and to provide facilities for research.

We have seen that the Conservancy has an obligation to notify to local planning authorities any land of special interest for its flora, fauna, geology or physiography. The object is to ensure that if an application is submitted for a development which may affect one of these sites the scientific interest will be weighed against the economic or other merits of development: it is a requirement under a Town and Country Planning Order that the local authorities must consult the Nature Conservancy before giving planning consent. Notification of these Sites of Special Scientific Interest (S.S.S.I.s) has been completed for 28 of the 33 counties in Scotland and has involved 358 sites. The final total for the country is likely to exceed 450.

S.S.S.I.s are complementary to National and Local Nature Reserves in that notification seeks the conservation of further samples of habitats and accompanying animal life even although their importance is only local and not, individually, of national or regional significance. Because the number and scatter of sites ensures that a representative selection of them, illustrating a wide range of biological and geological features, is within easy access of almost everyone, they are of particular value from the educational aspect. Since S.S.S.I.s are nearly all in private hands, permission to visit them is in most cases required.

In addition to the National and Local Reserves there are several other categories of protected places of biological interest. These include the Royal Park Bird Sanctuary at Duddingston, and the Statutory Bird Sanctuaries set up or continued under the Protection of Birds Act 1954. At present these comprise the islands of Craigleith, Fidra, the Lamb, Eyebroughy and Inchmickery in the Forth; Lady Isle and

Horse Island in the Clyde; Possil Marsh, Glasgow; the Low Parks at Hamilton; and the Loch Garten (Osprey) sanctuary. Four of the five Forth Islands (the exception is Craigleith), together with Horse Island and the Loch Garten sanctuary, are administered by the Royal Society for the Protection of Birds, as also is the fine island reserve of Handa off the north-west coast of Sutherland, although this is not a statutory sanctuary. All these R.S.P.B. Reserves are managed by the Society under agreements with the owners.

There are, of course, many places in Scotland which are managed privately as sanctuaries. Those which are of more than ordinary interest—for instance the Treshnish Islands and the Hirsel—have additionally been notified as S.S.S.I.s. Most inland waters of local importance as wildfowl resorts fall into this category of privately protected places. Although sometimes a limited amount of shooting takes place this is never on such a scale as to diminish greatly the value of the water as a holding ground, and many of these private sanctuaries are very well managed indeed.

It is appropriate to mention here the National System of Wildfowl Refuges which the Conservancy has taken a lead in establishing. The scheme is mentioned in Conservancy Monograph No. 3, *Wildfowl in Great Britain* (H.M.S.O., 1963), prepared by the Wildfowl Trust: its aim is that all the wildfowl areas of major importance should become National Refuges and that Regional Refuges of more local value should spread the network throughout the country. Caerlaverock, Loch Druidibeg (in South Uist), the Sands of Forvie (at the mouth of the Ythan), and Tentsmuir Point (at the mouth of the Tay), with its goose roost on the Abertay Sands, are already National Refuges by virtue of their establishment as N.N.R.s. Loch Leven is the most recent addition to this category—and undoubtedly the most important of all. Some of the Regional Refuges may again come into being as N.N.R.s, if their scientific interest, ornithology apart, is considerable, and a few will be L.N.R.s. The Morton Lochs N.N.R., Aberlady Bay L.N.R. and the Castle and Hightae Lochs L.N.R. at Lochmaben are already established Regional Refuges. Although a few of the Regional Refuges may become so by being declared Statutory Sanctuaries, the majority are likely to be constituted as the result of arrangements for management concluded between the Conservancy and the landowners concerned. In all, more than thirty refuges are projected for Scotland.

Because the Scottish series of National Nature Reserves is composed of selected samples of major habitats, one would expect these reserves to contain, between them, a good representation of the birds which breed regularly in Scotland. In fact, incomplete although the series still is, about eighty per

cent of the species breeding in Scotland can be found nesting in the National Reserves. Those not so far recorded are all very local or disappearing or colonising species, or species associated with buildings; for example, the Slavonian and Black-necked Grebes, Common Scoter, Roseate Tern, Collared Dove, Little Owl, Nightjar, Swift, Green Woodpecker, House Martin, Chough, Yellow Wagtail and Hawfinch.

In the same way, the places which have been given some sort of protection, either by reservation or notification, within the range of any one habitat type are satisfyingly numerous and well distributed. Taking the habitat of rocky islands and coasts as an example, we find among the places which are either N.N.R., "A" Site or S.S.S.I.: Hermaness and Muckle Flugga, Noss, North Rona and Sula Sgeir, St Kilda, Rhum, and the Isle of May (all N.N.R.s); Fair Isle, and the Bass Rock (both "A" Sites); Foula, and Eilean nan Ron; Handa (R.S.P.B. Reserve); the Treshnish Islands, Ailsa Craig, the Mull of Galloway, the Scare Rocks in Wigtownshire, St Abb's Head in Berwickshire, and Fowlsheugh in Kincardineshire—and this is by no means an exhaustive list. Sandy coasts, woodlands and moorlands show an equally good range of cover, and the same is true of the other main habitats.

The work of the Conservancy and the need for conservation in the country at large are gradually becoming more widely appreciated. Similarly it is becoming accepted that the bulk of conservation activity must depend not so much on the individual efforts of the Nature Conservancy, which itself can in many ways be only an example and spur for a wider movement, as on the understanding and efforts of private and public landowners and occupiers, and all who influence land use or land management in any way. Local Naturalist Trusts could play a great part in furthering an understanding of what is involved: County Trusts have been established in nearly every county in England, but so far there is not one in Scotland.

The fact that protection for so many biologically and educationally valuable areas in Scotland has been obtained or is being sought, and that the interest of so many more has been brought to the notice of planning authorities, should not lull us into the belief that there is not much more to do. What has been accomplished is only a beginning. Conservation is not something to be carried out in a scatter of restricted areas only: it must be practised everywhere by everyone. If the future of our fauna and flora—to say nothing of countryside amenity—is to be ensured, our target must be the enlightened use of all our natural resources, and the perpetuation of, at the very least, the present variety of Scottish habitats and scenery. The practice of conservation should be-

come as much second nature to land users of every sort as is the rotation of crops to the farmer.

Research

Conservation is not something negative or passive, with the implications, "don't do this, don't do that, leave it alone, put a fence around it, protect it *from* man." Instead it seeks the positive information to say, "do this, do that, manage it thus, conserve it so, make use of it wisely *for* man." To obtain the facts to enable such guidance to be given, two types of research are necessary; fundamental research on the many natural resources concerned, and applied research on how to manipulate them in order to preserve variety and balance.

Because it is a primary duty of the Conservancy to advise on the conservation of natural resources, its research programmes are directed towards obtaining the information to make this possible. Four main categories of research may be recognised, all of them interlocking:

- (i) Investigations concerned with usages threatening to affect the resources of the country as a whole; for example, problems posed by the use of pesticides and by increased human pressures on the countryside.
- (ii) Studies directed at answering requests for advice on specific local situations; for example, complaints of Golden Eagles killing lambs.
- (iii) Fundamental research seeking a fuller understanding of underlying natural processes.
- (iv) Applied research involving the testing of conservation techniques in the field; for example, research designed towards improved moorland management.

Pesticides. A fairly straightforward example of a threat which could have had far-reaching effects showed itself in England in the early 1950's with the increasing use of weed-killers to control plant growth on roadside verges. This seems a harmless enough operation until it is realised that hedgerows and verges are important sources of food for useful insects. Destruction of this habitat can reduce the numbers of these insects considerably, and consequently the food supply of insectivorous birds and other animals. This could start a chain of interactions which, if widespread, might have appreciable effects on the fauna of the countryside. With this in mind, the problems involved in the roadside application of selective weedkillers were investigated by the Conservancy and the Road Research Laboratory. As a result, a circular was issued by the Ministry of Transport and Civil Aviation to the appropriate local authorities, laying down that spraying should be carried out only on certain classes of road; that on wide verges spraying should normally be limited to within 10 feet of the road edge; and that on narrower roads care must be

taken to avoid spraying the hedge and immediate vicinity.

The investigation of roadside sprays had hardly begun when the Conservancy became involved in the threat to all forms of wildlife from the ever-increasing use in agriculture of the wide range of chemicals known collectively as pesticides. The term embraces all substances used to control any animal or plant regarded as a pest: it includes herbicides, fungicides, insecticides and rodenticides—substances used not only in agriculture and horticulture but also for the protection of stored foods.

The hazard to wildlife from roadside spraying may not be very important in the Scottish context, but the threat from pesticides most certainly is. Few people can now be without some knowledge of the book *Silent Spring* by Rachel Carson—an indictment of the indiscriminate use of chemicals to control agricultural pests and diseases, particularly in the U.S.A. Her theme is that the large-scale use of toxic chemicals can have serious long-term genetic and ecological effects; that it leads to the build-up of residues in soil, water and food chains; and that the destruction first of the natural predators at the ends of these chains (thus allowing the resurgence of pests), and the encouragement of resistant strains of insects, will seriously reduce the long-term effectiveness of pesticidal treatments.

The control of pest species of plants and animals is essential for efficient food production: and man must eat if he is to survive. Although frequently the best control is achieved by chemical means, more than enough evidence has accumulated that certain chemicals can present long-term risks affecting not only all types of natural resource but also, indirectly at least, the continued well-being of the human race. Most of the herbicides in use today are relatively non-toxic to birds and mammals; of the insecticides, the organo-phosphorus substances are relatively non-persistent, although a few which are strongly toxic have sometimes caused severe local mortality. The main threat is from some of the highly persistent organo-chlorine insecticides, including aldrin, dieldrin and heptachlor, previously widely used as dressings for spring-sown grain. In Great Britain, as a result of voluntarily imposed restrictions, effective since 1961, these insecticides probably no longer cause much direct poisoning. There is, however, evidence to suggest that if such organo-chlorine substances, still widely used otherwise than in seed dressings—for instance, in sheep dip—were to be continually absorbed in small amounts in food they could have important effects on animal reproduction. Indeed, the sub-lethal effects of the persistent chemicals on reproduction may well prove to be much more serious than the direct effects. Until more is known, the Nature Conservancy's view is that the use of this

type of chemical should be greatly curtailed. It would in any case seem only prudent, where the use of a pesticide is known to involve a threat to any form of life other than the particular pest against which it is directed, that alternative methods of control should be preferred. Obviously where more than one pesticide is effective and commercially practicable for a specific purpose the least hazardous and least persistent should always be used—and at the lowest concentration needed to control the pest involved.

The Conservancy's part in unravelling the pesticides problem is concerned solely with the wildlife implications. Among the aspects currently being studied are the concentration of persistent chemicals in vertebrate food chains; the effects of insecticides and herbicides on soil animals and plants; the side effects of herbicides used to control freshwater weeds; and the side effects of arboricides. The first of these has already shown that flesh-eating and fish-eating predators contain higher residues of organo-chlorine insecticides than do insect-eaters or plant-eaters. Thus hawks, owls, herons and grebes contain higher residues than thrushes, pigeons and Moorhens. In Scotland, in 1963, eggs from eight nests of Golden Eagles all contained residues of four types of organo-chlorine insecticide. Less unexpected perhaps, in view of the recent frequency of pesticide traces in fish, was the finding of similar residues in the Ospreys' egg abandoned in the Inshriach eyrie on Speyside. This serves to underline the warning from scientists in the Department of Agriculture and Fisheries for Scotland that salmon are running an increasing risk of death from the side effects of chemicals used on farms adjacent to the rivers up which they run.

The Peregrine is now a rare bird in this country. Between 1930 and 1939 its breeding strength in Britain was probably fairly steady at about 650 pairs. Wartime control reduced numbers locally but after 1945 there was a rapid recovery. Then, in 1955, a decline set in, and by 1961 two-fifths of the pre-war population had disappeared and only 82 pairs reared young. In 1962 only half the known territories were occupied and successful nestings had fallen to 68. There was no improvement in 1963, when four different chlorinated hydrocarbons were identified from a Peregrine's egg from Perthshire, with similar findings from eggs of the same species from elsewhere in Scotland and in the Lake District. Circumstantial evidence points strongly to pesticides as the cause of the near obliteration of the Peregrine, the poison from contaminated prey accumulating in the predator, upsetting breeding behaviour, and leading to infertility of eggs, breakage of eggs by the parent birds, failure to breed, and ultimate disappearance.

Eagles and Lambs. In 1955, at the request of the Secretary of

State's Advisory Committee on the Protection of Birds, the Conservancy undertook an investigation into complaints of lamb killing by Golden Eagles in Lewis. The main food of these birds in the complaint area was found to be rabbits, supplemented by lamb and sheep carrion, a few hares and Red Grouse, and occasional rats, Golden Plovers and Hooded Crows. Natural mortality among sheep and lambs is high, and few carcasses are buried—although the law requires that they should be. In only one eagle territory was the killing of healthy lambs proved: there were few rabbits in this territory and to obtain them in any quantity the birds involved had to cross the ground of other eagles, which they were apparently unable to do. On the basis of this survey, which revealed only two attacks on lambs by a single "rogue," the Conservancy could see no reason to recommend any general change in the law which forbids the killing of Golden Eagles.

Since that conclusion was reached, further investigation by Dr J. D. Lockie in the north-west Highlands into the food of Golden Eagles and foxes has produced confirmatory data from a different locality. In Wester Ross, although Red Grouse, hares and rabbits are scarce, the animals which might be expected to depend on them are numerous. Here one breeding pair of Golden Eagles was found to every 16,000 acres. Deer occur throughout the area, and every winter many die. Likewise, on some of the sheep farms, there are annual winter losses of lambs and ewes, and now and again the losses are heavy. The average lamb yield is about 65%, but after a particularly severe winter and late spring the crop may be as low as 30%, with ewes dying also. Carrion is therefore usually available on the hill, either in the form of venison, lamb or mutton. Analyses of Golden Eagle food on this ground have shown that on average in winter the eagles eat 38% carrion, 32% hares and 30% birds. In summer the food is 60% birds and 30% lambs, the latter including both carrion and killed. The food brought to one eyrie was studied in detail: in the five years it was occupied between 1956 and 1961 the remains of 22 lambs were found in it, but in only ten instances could the cause of death be ascertained with certainty; three of these lambs had been killed by the eagles, seven brought in as carrion. Thus of the 22 lambs involved in the five years, perhaps seven may have been killed by the parent eagles. Since there were about a thousand breeding ewes within their hunting territory the loss was not particularly serious. The study showed that in good lambing years, when not so much carrion was available, the eagles ate less lamb than in years of bad lambing: they did not make up the deficiency by increased killing. In 1957 and 1961, good years for lamb survival, only half as many lambs were eaten by the eagles as in the other years. It may be noted that one of the most interesting

findings of this investigation was that over much of highland Scotland the presence of both Golden Eagles and foxes is dependent on the availability of carrion. Without it neither species could survive and breed at present numbers.

Fundamental research. The scientist seeking to answer a biological problem is confronted at every turn by a lack of basic information concerning the background of the organisms with which he is concerned and the conditions affecting the way they live. There is therefore a strong case for some at least of the scientific effort of an organisation like the Conservancy being devoted to the study of basic problems, accepting that this may not result directly and at once in findings of economic application. Limitations imposed by finance and pressures to answer immediate problems will always restrict the extent to which fundamental work is possible, but it is the avowed aim of the Conservancy to carry out itself—and to encourage others to carry out on its behalf—an approved amount of purely fundamental work to reveal new principles. The Universities are participating in this approach, sometimes helped to a small extent by Conservancy research grants, studentships and contracts, whilst other projects are under investigation at the Conservancy's own research stations. Some idea of the range of the latter work can be gauged from the Conservancy's Annual Reports: it is probably enough to mention the botanical research that resulted in its Monograph No. 1, *Plant Communities of the Scottish Highlands* (H.M.S.O., 1962), which is a fundamental source-book for land-use planning in upland areas; long-term meteorological and catchment studies; investigations directed at understanding coastline movements; and research on the effects of trees on soil.

The Conservancy does not normally undertake research itself in fields where existing organisations have the necessary capacity and willingness to carry out the work required. In such cases it encourages instead, through various types of grant, the furtherance by these organisations of projects of particular relevance to conservation. This is especially true of research on birds, where the continuation and expansion of the scientific work of the British Trust for Ornithology, the Edward Grey Institute of Field Ornithology, and the Wildfowl Trust is very much to the Conservancy's advantage. Especially in the case of the B.T.O. and the Wildfowl Trust, the Conservancy's financial contribution has been considerable. In 1963 the former received a research grant of £7400 to cover ringing and migration investigations, the nest record scheme and population studies (including the Common Bird Census), most of which have been financed to a major extent by the Conservancy since their inception. Research grants from the Conservancy in support of the Wildfowl Trust's Research Unit amounted in the 1955-60 period to £23,750, whilst the alloca-

tion for 1960-65 is about £57,750. Grants and post-graduate studentship awards have similarly benefited research programmes at Oxford directed by Drs Lack and Tinbergen and in consequence, the knowledge available to the Conservancy

Applied research. Conservation is concerned with the application of the findings of research to the management of natural resources. Once the underlying principles are understood the conservationist seeks to direct this knowledge to practical ends. This in turn involves field trials and experiments, carried out by the Conservancy mostly on its reserves.

Many examples of applied research could be given, but the Conservancy's research on red deer on the island of Rhum—essentially a research reserve—is as good an illustration as any, although it embraces both fundamental research on a wild population and the application of the results to management. In some directions management has preceded research, which is the wrong way round, but in Scotland there is an urgent conservation problem to be tackled—the management of deer stocks too numerous for the land they occupy—so that any short cut which will assist intelligent reduction is to be welcomed. The work on Rhum suggested fairly quickly that stability in red deer numbers could be achieved by the annual killing in autumn and winter of one-sixth of all stags and hinds, one year old and over, based on counts made each year just before the new crop of calves appears. This has been tested for six years and the deer population on the island has remained remarkably constant. Although the hypothesis is not yet completely proved—there are indications of a change in the stag : hind ratio which might make differential culling desirable later—the conservationist must sometimes take a chance. With red deer it is considered that a one-sixth cul is a safe one to adopt meantime as a working principle, accepting that it may have to be slightly modified later when the final findings of the scientists are available. This is, however, only half the battle: one may know how to harvest the herds in order to maintain them at a steady level, but how does one know what this level should be so that they are in balance with the habitat?

Here is the snag; we have not yet got the knowledge to calculate the carrying capacity of the ground. It is to discover how to do this that much of the Conservancy's scientific effort is now being directed by way of productivity studies. Meantime there are unquestionably far too many deer in Scotland, and in places the numbers are getting greater every year. In the past, few if any of the herds have been harvested at anything approaching a one-sixth kill; universal application of this level of shooting would stop further general increase and is the logical first step.

The Conservancy's work on red deer on Rhum, like its study

of Red Grouse, already described in *Scottish Birds* (3: 3-13), has developed into an investigation of vegetation resources, land productivity and management. From the findings on Rhum, at Kerloch (Aberdeenshire) and elsewhere, prescriptions should emerge for the better use of marginal land and upland areas.

These moorland studies illustrate how difficult it sometimes is to distinguish between applied and fundamental research; not only does fundamental work lead to new applications, the applied approach can also lead to a demand for further fundamental knowledge.

Human pressures

Nature reserves are not areas from which the public is barred. They are established for the dual purpose of conserving wildlife and of enabling man to study and enjoy it. But if too many people visit any one bit of countryside damage is certain to ensue. If this is not to happen, control is necessary. We accept control where the effects of pressures are obvious—"keep off the grass" notices are a good example—and more and more the need for control in the countryside is being accepted. The Nature Conservancy itself limits access in only three of its 29 Scottish reserves: at Morton Lochs in Fife—a well-known small wildfowl breeding area—entry is allowed only outside the nesting season; at Caerlaverock, on the Solway, part of the area is maintained as a wildfowl sanctuary although shooting under permit takes place over much of the rest; and on Rhum, where day-visiting is unrestricted, anyone wishing to stay overnight must obtain a permit in advance.

Although access to the great majority of National Nature Reserves is at present unrestricted the Conservancy maintains the right to limit access by numbers, time or place if at any time this should prove necessary for the well-being of the area concerned. Because of continuously increasing public pressures, involving more and more people on less and less undeveloped ground, similar control must be envisaged not only in reserves but on open spaces everywhere.

We in Scotland are proud of our countryside—of the moors, mountains, fields, woods and waters which go to form the living pattern of our scenery. Once, this was a natural landscape; now there is scarcely a foot of it that has not been affected by the activities of man. Because we are dependent on the land and its resources, both for our material well-being and our enjoyment, we must continue to alter and make use of them still further. In so doing we must be careful not to destroy what is irreplaceable. Each one of us has a personal responsibility for the use to which the natural resources of our land are put; it is up to us all to assist in their conservation.

Observations on small petrels at St Kilda, 1961-62

W. E. WATERS

(Plates 4-6)

Introduction

There are large colonies of Leach's Petrel *Oceanodroma leucorhoa* and Storm Petrel *Hydrobates pelagicus* on St Kilda. Whereas the Storm Petrel breeds on numerous islands along the Western coast of the British Isles from Shetland to Scilly, Leach's Petrel breeds regularly on only four remote islands, or groups of islands, in Britain. All are outliers beyond the main chain of the Outer Hebrides; they are North Rona, Sula Sgeir, the Flannans and St Kilda. In addition, isolated breeding occurrences have been suspected, or proved, elsewhere in the Hebrides and on some of the islands off the west coast of Ireland (see, for instance, Atkinson and Ainslie 1940).

Leach's Petrel has been known to inhabit the St Kilda group of islands for nearly one hundred and fifty years and it was from these islands that the first British specimen was obtained. There are colonies on Dun, Boreray, Soay and Levenish as well as on the main island, Hirta. The largest colony of Leach's Petrels on Hirta is amongst the huge boulders of Carn Mor on the western side of the island (plate 5). This colony was discovered in 1955 (Boyd *et al.* 1956). Storm Petrels and Manx Shearwaters *Procellaria puffinus* also breed on Carn Mor. The shearwater, or "scrabaire" as it was known to the St Kildans, was taken by them at night on Carn Mor for food, according to some reminiscences of St Kilda by Ruairidh Caimbeul published in the *Stornoway Gazette* (8th August 1961).

Little has been recorded about Leach's Petrels on this side of the Atlantic owing to their pelagic habits and the remoteness of all the breeding colonies. Their breeding habits were studied in 1936 on North Rona by Ainslie and Atkinson (1937) between 16th July and 12th August, and an account of Leach's Petrels on Carn Mor has been given by Williamson and Boyd (1960). I made a study of the Carn Mor colony in 1961 and 1962, spending a total of eighteen nights on this boulder shelf at various times during the two seasons (table 1). My observations are given here and in *British Birds* (in press). Details of breeding biology were difficult to obtain on Carn Mor as most of the petrels had their burrows beneath boulders which were too large to move, many weighing several tons.

Relative numbers of petrels

My attention was therefore largely confined to the birds flying over the colony. These were caught in a nylon mistnet (20 ft x 9 ft) which, with only two exceptions, was erected at

the same spot, parallel to the cliff edge near the south-west corner of Carn Mor. In this way the relative numbers of Leach's and Storm Petrels in the netting locality could be compared at various times during the night, and during the season. Whereas Leach's Petrel is a fairly vocal bird on the wing the Storm Petrel is much quieter and its numbers consequently more difficult to estimate. The relative numbers of the two species vary greatly during the season but the number of Storm Petrels has probably been under-estimated in the past. Boyd *et al.* (1957) described it as "far less numerous" than Leach's Petrel on Carn Mor, but I trapped 85 Storm Petrels and 97 Leach's Petrels. During July and August the Storm Petrel was the more numerous species and had I done as much mistnetting then as I did in May and June I believe my totals would have shown the Storm Petrel to be the commoner bird. Also, I recaught only one Storm Petrel, whereas I recaught eleven Leach's Petrels. These figures, based on petrels caught at one locality, may, however, not be representative for Carn Mor as a whole. Dr J. Morton Boyd (pers. comm.) found Leach's Petrel more widespread than the Storm Petrel on Carn Mor. The range of individual petrels flying over Carn Mor is not known but my ringing results, with few retraps, suggest that they may wander over a considerable area. An accurate estimate of the relative numbers of the two species could only be obtained by mistnetting at many different areas on Carn Mor at various times during the season.

Table 1. Number of Leach's and Storm Petrels, including retraps, caught on nocturnal visits to Carn Mor, St Kilda

Date of visit	Number of petrels caught	
	Leach's	Storm
1st May 1962	2	0
9th May 1962	12	0
12th May 1962	8	0
26th May 1962	15	1
2nd June 1962	13	3
10th June 1961	0	0
11th June 1962	7	6
12th June 1961	2	0
15th June 1961	no trapping	
26th June 1962	11	3
5th July 1961	9	12
9th July 1962	5	4
16th July 1962	8	17
21st July 1961	3	5
13th August 1962	6	35
2nd September 1962	0	0
7th September 1961	7	0
6th October 1961	0	0
	108	86

Morbidity

In the sample of 97 Leach's Petrels handled on Carn Mor



PLATE 4. Juvenile Leach's Petrel, North Rona, 6th October 1962. The bird has just emerged of its own accord from the stone wall of the bothy, and shows the very pale wing coverts which may be a helpful means of distinguishing juveniles.

Photograph by W. E. Waters



PLATE 5. Boulder shelf of Carn Mor, Hirta, St Kilda, extending from about 500 ft to 700 ft above sea level (centre of picture). The peak on the right is Mullach Bi (1164 ft). Many of the boulders on Carn Mor are the size of a large room. Beneath them Leach's and Storm Petrels, Manx Shearwaters and Puffins breed (see page 73).

Photograph by W. E. Waters



PLATE 5. Leach's Petrel, St Kilda, showing the characteristic steep forehead of the species.

Photograph by W. E. Waters



PLATE 7. Red-throated Diver and chick, 1953. A characteristic portrait of one of the photographer's favourite birds. We hope later to print further examples of his work (see Obituary, page 92).

Photograph by Ian M. Thomson

three showed abnormalities.

(1) V24488 was caught on 7th September 1961 and found to have the right leg, from the upper end of the tarsus, missing. It was recaptured on 27th June 1962 when no change was apparent and the bird appeared in good condition (weight 48.5 gm).

(2) V24223 was originally ringed in June 1958 and was recaptured on 7th September 1961. It was then found to have an abnormal right eye, the lower half being opaque and bright scarlet in colour. This opacity reduced the area of the pupil by one-half.

(3) V24427 had an atrophied left foot. This was apparently a congenital lesion.

None of the 85 Storm Petrels caught showed any abnormalities.

The voice and aerial activity of Leach's Petrel

Ainslie and Atkinson (1937) give the typical cry of Leach's Petrel as *her-kitti-werke* and state that many variations occur. This cry is uttered both in flight and from the burrow. While tape-recording these sounds it seemed to me that they were always slower and more distinctly enunciated when given from a burrow. This impression, though apparently valid, may simply be a matter of better acoustics under the boulders. Later in the season, and particularly in September, this call became rather harsher and shorter, but there is great individual variation. It probably continues to be used for as long as the petrels visit their breeding colonies.

There was a decrease in the amount of calling in flight during June, probably related to the onset of incubation. There was a resurgence of calling during July with an increase in the number of petrels flying overhead (probably many of them immature birds). The amount of calling was on the wane during the rest of the season.

The churring note is apparently given only from the burrow and was most frequent in May and early June. It was heard much less frequently after that but fairly regularly until August. From these observations it would appear that petrels newly arriving in July (probably immature birds) do not churr, or at least do not churr as much as the breeders when they arrive in May. If they did, one would expect a second peak of churring in July, but this was not noticed. The churring of Leach's Petrel is not as continuous as that of the Storm Petrel and often lasts for only five or six minutes. It often starts, finishes, or is interrupted by the *her-kitti-werke* call. Very many more Leach's Petrels than Storm Petrels were heard churring on Carn Mor.

The night-fighting over a Leach's Petrel colony has been well described by Ainslie and Atkinson (1937). The second type of slower more purposeful flight they describe was not observed on Carn Mor. I never actually saw collisions between two Leach's Petrels although these doubtlessly occurred. My face and hair were frequently brushed by the ghostly wing of a passing Leach's Petrel (more often I think than by a Storm Petrel). On many occasions Leach's Petrels, and less often Storm Petrels, hit the stout bamboo poles holding the mistnet and fell to the ground. They recovered in a few seconds and took off again almost at once. Leach's Petrels crashed into the bamboo poles even on light moonlight nights when the poles could be clearly seen by the human eye at distances of over thirty feet. If the visual acuity of Leach's Petrel is such that the bamboo poles could not be seen under these conditions one doubts if its eyesight at night is good enough to enable it to recognise its burrow by using visual landmarks. Carn Mor slopes from about 500 ft to 700 ft above the sea and owing to the height of the island behind is often blanketed by mist. Identifying the outline of the jagged cliff of Mullach Bi (1164 ft) which towers above Carn Mor is thus often impossible at night even during the early summer. I have been on Carn Mor on several nights with the cloud base at 800 ft and once when the boulder shelf itself became enveloped in mist. The numbers of Leach's Petrels flying around seemed unchanged on these occasions.

Richmond (1958), referring to the Storm Petrel, wonders if smell might guide the petrel to its nesting burrow. The smell of petrels is certainly powerful and lasts for a considerable time. My mistnet when removed from its cotton bag in May still smelt strongly of petrel although it had not been used for eight months. I often saw a Leach's Petrel perform a series of concentric circles, at least three or four in number, each rather tighter than the one before, until it suddenly dropped to the ground near the centre of its circles. Such birds must then have disappeared underground as I failed to find them on the boulders where they seemed to come down. It appeared to me that these Leach's Petrels were locating their burrows, but whether by sight or smell I do not know. This behaviour did not seem to be regularly associated with any calling or churring from underground so I do not believe such petrels were "called down." These burrow-locating circling flights were best seen on moonlight nights but probably occurred on dark nights as well. They seemed distinct from the circling of the aerial display when two or more birds would chase one another in a series of twisting turns that appeared to be performed at random over the colony. These display flights were seen from May until August. Williamson (1948) observed that the display flights of Leach's Petrels on their

breeding grounds in the Faeroe Islands often terminated, apparently deliberately, in mid-air collisions, when both birds would fall to the ground and disappear into burrows. I did not observe this on Carn Mor. Circling flights of both burrow location and aerial display types were more common during the early and middle parts of the night. Towards the first light of daybreak the Leach's Petrels had their typical erratic flight and usually these birds were leaving Carn Mor and heading out to sea.

On my earliest visit on 1st May there was very little calling from underground and churring was heard only once. There was a moderate amount of calling from the birds in flight. On 9th and 12th May there was much more calling from the burrows and churring was frequently heard. Boyd and Wormell (1958) record that on 3rd May there was loud and frequent calling from the air by Leach's Petrels on Carn Mor but that "none was calling from the burrows." These observations suggest that on their earliest visits Leach's Petrels fly over the breeding grounds but that there are few landings; at least there is little calling from underground.

Acknowledgements

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Short Notes

Wilson's Phalarope in Fife

At Peppermill Dam, near Kincardine, Fife, about 1400 hrs on 19th October 1963 we noticed a small wader feeding with Redshanks in shallow water. It fed quickly, breast deep, picking up floating matter and wading much faster than the Redshanks in spite of its rather smaller size and preference for deeper water. When it flew we were able to trace its flight in the bad light by following the white dot of its tail and rump along the opposite shore. It settled in one of the many floating beds of broad-leaved pondweed exposed by the very much reduced water level, and we were able to watch it for the better part of an hour with a 25x-50x telescope.

When feeding it walked on and swam through the weed stems, continually changing direction and picking up food alternately from one side and the other, neatly and quickly. At this point its Common Sandpiper outline, shortish fine bill, rather thin neck and small round head were noticeable features. Next day we watched it for most of the afternoon and were able to complete the following plumage description and identify it as a Wilson's Phalarope—the third for Scotland, and only a few miles from where the first was found in 1954 (*Scot. Nat.* 1954: 188; *Scot. Birds* 2: 366).

White forehead; grey-brown cap on crown continuing in a narrow line down nape and gradually widening to merge with mantle; wings grey-brown with darker outer primaries, but no wing stripe or superficial markings; rump white; tail white, tipped grey or brown; eye enclosed in dark brown or black eye streak; chin, cheeks and whole of underside white, shading to faint dirty white on flanks; bill short like a Reeve's, fine, straight and dark; legs, seen very briefly, appeared greenish-yellow, and showed just beyond tail in flight.

Its association with Redshanks was again in evidence, and when flocked Lapwings flew overhead the phalarope joined them on two occasions and began to weave an erratic course through the slower-flying birds, at times climbing and diving quite steeply. Pursued twice by single Lapwings it shook them off by turning fast down wind and climbing in a zig-zag flight to about 200 feet and then descending in a steep dive, twisting and turning before settling in the pondweed. After one of these dives it touched the water with wings raised overhead like a Swallow, then carried on at speed, landing in an adjacent weed-bed, with very little water disturbance.

During the week the bird was watched by several members of the S.O.C. It was last seen on 25th October by John M. S. Arnott, who recorded one in Dunbartonshire in 1962 (*loc. cit.*)

and thought that the present bird was a little greayer on the flanks.

G. DICK, L. LEES, J. POTTER, I. TAYLOR.

Nuthatch in Perthshire

On 8th February 1964 I went to investigate a report of a Nuthatch visiting a bird table in North Perthshire. About 11 a.m. a Nuthatch appeared on a fat-filled coconut shell barely 6 yards from where I stood. The bird was in full sunlight, and the smoky-grey-blue back, pinky-buff underparts, narrow black line through the eye, very short tail and strong, sharp bill were clearly seen. The Nuthatch pecked at the fat two or three times and then flew up into the nearby trees. A few minutes later it returned and alighted on the stone bird table only 3-4 yards from me and already occupied by Great, Blue and Coal Tits. The Nuthatch looked around with head cocked up and sideways in the typical manner before seizing a large lump of fat and flying off with it.

This bird was reported to have been visiting the feeding table at roughly weekly intervals since November 1963. Adjoining the garden is a private wood of very large old deciduous trees, plus a few conifers, which would appear very suitable for Nuthatches.

Although this is the first Nuthatch I have seen in Britain I am familiar with two of the American species and have no doubt at all that the bird which I saw was a Nuthatch.

VALERIE M. THOM.

(We have also received details from the Earl of Mansfield about this bird, which appears to be the first Nuthatch reliably recorded in Scotland since 1945.—Ed.)

Without Comment

"Pewits in trees. Whilst in Belfast at Christmas time a tree was pointed out to me, the last of a row of medium-sized elms opposite Broadcasting House in Bedford Street. It seems to have a particular attraction for a congregation of pewits, or "willy wagtails," as they are sometimes called.

I saw the tree twice in one day, the second time being at about 10 o'clock in the evening, when I estimated that about 200 willy wagtails were roosting in its branches. During the day the tree is empty, though the ground around and the branches are white with bird droppings. No other tree in the row seems to have a similar attraction."

Letter in *The Field*, 9th January 1964.

Current Notes

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Unless otherwise stated, January to April dates refer to 1964 and all others to 1963).

Distribution

Observations made before 1st November are not included in this section except to amplify more recent topics.

A count of **Great Northern Divers** between West Loch Tarbert and Loch Coalisport, Argyll, on 15th December gave a total of 63, including flocks of 11, 17 and 23 (AGG, TDHM). The first **Red-throated Diver** of the year was seen and heard in Shetland on 29th February, and most of the breeding lochs were occupied by 28th March—several weeks earlier than recorded in *Birds and Mammals of Shetland* (RJT).

A **Great Crested Grebe** was at Cullivoe, Yell, on 12th January: it is a rare bird in Shetland (RJT). At Seafield, Leith, peak counts of the winter population may reach several hundred, but 660 there on 1st February was quite exceptional (CT). Though not recorded at Morton Lochs when Grierson wrote in 1962 (2: 163) Great Crested Grebes have been reported by many observers since; for instance, a pair was displaying and building a nest on 7th May 1961 (JB, AM); and a pair with two chicks on 13th July 1963 constituted the first record of breeding at Tentsmuir (DWO). In 1964 one arrived on 5th February and was joined by another next day, and on 1st March they were displaying mildly (CVC).

In the Forth two **Red-necked Grebes** were at Portobello on 4th January (MFMM), one at Gullane Point on 23rd February, and two there on 8th March (MGW); one appeared on Kil-

conquhar Loch, Fife, on 20th March (DWO); and in Angus one was seen at Lintrathen on 25th March (HB). Twenty-five **Slavonian Grebes** were counted within sight of the shore in the Sound of Gigha on 9th November (ME, AGG, TDHM); at Stornoway the highest count was 22 on 19th January (NE); and one appeared on Kilconquhar Loch in a gale on 14th and 15th March (DWO). Reports of **Black-necked Grebes** are of one on Loch Creran, Argyll, on 22nd December (TDHM); three on Loch Arienas, Morvern, Argyll, on 11th and 12th January (PEW); one in Stranraer harbour on 17th (ADW); one at Strachur, Argyll, on 18th (TDHM); one near Parton on Loch Ken, Kirkcudbrightshire, on 7th March (GAR); one at Gullane Point, East Lothian, on 2nd February (RMu), and two there on 30th March (TCS); and a very recently dead bird on the beach at Ardross, Fife, on 22nd March (DWO).

There was a sudden return of **Gannets** to the Forth, with good numbers making their way up the estuary on 12th January past Elie, where none was seen the day before (DWO). Six **Cormorants** were far inland in Perthshire on an old wooden jetty in Loch Tay near Kenmore on 4th December (JW); and one at Loch Doine, near Balquhidder, on 15th March (ADKR).

A **Bittern** was flushed from a marsh near Brydekirk, Dumfriesshire, towards the end of 1963 by a party of wildfowlers. Several 1962-63 records have been noted (2: 312, 373, 383), and another is of a bird which had succumbed to the hard weather of February 1963 being mobbed by crows at the roadside near Ae, Dumfriesshire (ED). At Broomrigg Marsh, near Dumfries, one was noted on 18th and 19th January 1964 (RD, DS); and one frequented swampy ground at Loch Park, Banffshire, from mid February to the end of March (RH).

At Barr Loch, Renfrewshire, a pair of **Gadwall** was seen on 21st December (AGG, TDHM) and 2nd February (LAU). **Wigeon** there were at the highest level recorded in ten years of watching, with about 750 on 16th February and 15th March. Good feeding (see below, under Whooper Swan) may have been the attraction (WHW). Single drake **Pintail** at slightly unusual places were at Glencorse Reservoir, Midlothian, on 26th January (ADKR); Lochend Loch, Edinburgh, on 15th February (DRA); and Elie Ness, Fife, on 29th (DWO).

Fourteen **Scaup** were inland on Kilconquhar Loch, Fife, from 25th January until 1st February, when there were eight, and thereafter six until 9th February (DWO). Numbers of wintering **Goldeneye** at Seafield, Leith, have tended to increase in recent years, but counts in the order of 2500 birds on 23rd December (ADKR) and 1st February (CT) are exceptionally high. Small numbers of **Long-tailed Ducks** were seen off the south Ayrshire coast for most of the winter (RCW) and the species is said to have been more in evidence in the county

than usual, though in small numbers, with one at Prestwick on 1st December, four there next day and on 20th March, and six at Newton on Ayr on 18th January (GAR). A spectacular movement on 29th March is reported from Joppa, Edinburgh, between 5.45 and 6.45 p.m. BST, when 762 were counted at high tide flying east in parties of up to 25 along with smaller numbers of other sea duck (TCS). **Common Scoter** were seen inland at Mochrum Loch, Wigtownshire, where there was a duck on 23rd February (TDHM); at Dunwan Dam, Renfrewshire—four drakes on 14th March; and at the Renfrewshire end of Rowbank Reservoir—three drakes next day (LAU). A total of some 1450 **Eiders** at Seafield, Leith, on 1st February was several times the usual maximum count (CT).

On 1st March a flock of about 200 **Red-breasted Mergansers** was scattered between Burntisland, Fife, and Inchcolm (GD, JP, IT). Further sightings of **Smew** (see 3: 36) are reported:

Loch Flemington, Inverness/Nairn—red-head from 4th Jan to 14th Mar (RHD, JL, MM).

Blane Burn, Killearn, Stirling—red-head on 12th Jan and 2nd Feb (TDHM)

Cramond, Mid/West Lothian—red-head again on 11th (RMu) and 26th Jan (CAP) (see 3: 36).

Threipmuir, Midlothian—red-head on 8th Feb (CT).

Woodend Loch, Coatbridge, Lanark—red-head on 1st and 2nd Mar (WS).

Rowbank Reservoir, Renfrew—still two red-heads on 8th Feb (see 3:36) and also a drake which stayed until 15th (RCD); one red-head on 18th Mar (GAR).

A **Shelduck** visited Kilconquhar Loch, Fife, on 14th March—doubtless driven there by the gale (DWO).

Three **White-fronted Geese** of the European race were seen with Greylags at Castle Douglas, Kirkcudbrightshire, on 22nd February (TDHM). Greenland Whitefronts at the Endrick mouth, Dunbarton/Stirlingshire, numbered five on 3rd November, 13 on 16th November, and 17 on 2nd February (AGG, TDHM). There are not many records of Whitefronts in Wester Ross, and it is therefore interesting to learn of six near Sand (north side of Gair Loch) and five at Red Point (south side of Gair Loch) in December, and 38 at Loch Badachro for over a week from 26th February, three there on 7th March, and 25 on 16th (ENH). It seems that the Castle Douglas **Bean Geese** failed to appear this winter for the first time in recent years, and only three were certainly identified (ADW). A **Pink-footed Goose**, unusual so far west, was with Whitefronts at Machrihanish, Argyll, on 15th March (TDHM).

There was a **Light-breasted Brent Goose** with Greylags at Rhunahaorine, Argyll, on 15th March (TDHM). Away from their regular haunts there seem to have been more odd **Barnacle Geese** seen than usual (see also 3: 37):

Stornoway, Lewis—3 on 16th Feb, 12 on 22nd, and about 50 on 27th; not usual in the area (NE).

Crinan, Argyll—1 with Greylags on 1st Dec (AGG, TDHM).

Corran, West Loch Tarbert, Argyll—1 with Greylags on 15th Mar (TDHM).

Comrie, Perth—3 with Greylags on 8th Mar (TDHM).

Aberuthven, Perth—1 with Greylags on 13th Mar (DJ).

Forteviot, Perth—1 with Greylags on 8th Mar (TDHM).

Bridge of Earn, Perth—2 with Pinkfeet on 27th Mar (TCS).

Morton Lochs, Fife—26th Jan (1) (CT), 2nd (1), 9th (3) and 16th Feb (2) (CVC), and 27th Mar (1) (TCS), all with Pinkfeet.

Loch Leven, Kinross—1 with Greylags on 19th Jan (AGG, TDHM).

Carsebreck, Perth—1 with Pinkfeet on 6th Oct (AGG, TDHM).

Lake of Menteith, Perth—1 with Pinkfeet on 5th Oct (TDHM).

Dalmaly (near Gartmore), Stirling—4 with Greylags on 9th Feb (RSB, GdK, AT).

Five **Canada Geese** were seen at North Third Reservoir, near Stirling, on 22nd February (PC), and the same number on 1st March at Gadloch, Lanarkshire, where they were previously reported in the autumn (2: 487) (WW, BZ).

At Barr Loch numbers of **Whooper Swans** increased further (see 3: 37) to 202 on 16th February and 199 on 15th March. Changes in drainage, and the dry winter, have left the water about 4 feet lower than usual; large areas of pondweed and other aquatic plants have been exposed on the surface, and it may be this which has attracted the wildfowl (RGC, WHW). Large flocks feeding on farming land include 86 on stubble by the eastern part of Flanders Moss near Thornhill, Perthshire, on 24th November (AGG, TDHM); and up to 155 on a cleared potato field between Loch Leven and Leslie from 30th January to 12th March (GD, JP, IT). **Bewick's Swans** are reported from several places:

Tynninghame, East Lothian—an immature on 5th Jan (TB).

Faldonside Loch, Selkirk—two on 5th Jan had not been there the previous day (AJS).

Barr Loch, Renfrew—at least 13 (probably 15) on 23rd Jan (RGC), and 15 on 2nd Feb (LAU).

A **Rough-legged Buzzard** was seen on the ground near Golspie, Sutherland, on 7th March, and in the air with a common Buzzard next day (JDO).

On 3rd February a cock **Capercaillie** flew through a $\frac{1}{4}$ " plate-glass window into a corridor of Stirling High School, the second recent occurrence within the burgh boundary (see 2: 378). Although its only obvious injury was a broken upper mandible, the bird died later. The species is evidently increasing in the woods round the town (GTJ).

In hard weather during the winter **Water Rails** again appeared on the rubbish tip at Moffat, Dumfriesshire (see 2: 365). Up to seven were noted for a week or more from 22nd December, and they evidently came from the adjacent moor. They

were rather shy this winter (RWA, ED). It is not always easy to know what to make of observations from zoological gardens, and we therefore merely note without comment that at the Edinburgh Zoo a **Moorhen** swimming in an enclosure on 16th March was already accompanied by a chick, estimated to be a week or more old (DD).

Winter **Black-tailed Godwits** were noted at:

Stornoway—one already reported (3: 37) was last seen on 18th Feb (NE).

Loch Stiapavat—one (different from above) on 24th Feb (NE).

Eden estuary, Fife—at this regular haunt seven were seen on 18th Jan, 5 on 22nd Feb (DWO), and 58 on 1st Mar (CT).

Seafield/Portobello, Edinburgh—one on 11th Jan had been seen occasionally since the autumn by various people (MFMM).

Stranraer, Wigtown—two on 17th Jan (ADW).

Merse at Wigtown—one on 22nd Feb (RS).

There was a **Green Sandpiper** at Rowbank Reservoir, Renfrewshire, on 27th January (LAU); and the **Spotted Redshank** at Aberlady (3: 36) was seen again on 17th November and 1st December (MGW). Two **Greenshanks** were seen at Browhouses, near Annan, Dumfriesshire, on 5th January and one on 24th February (RTS, JHS, AFGW); and there was one by the Clyde at Libberton, Lanarkshire, on 9th February (LAU). The carcass of a female **Knot** was picked up by the roadside 4 miles south of Moffat, Dumfriesshire, on the Lockerbie road on 23rd January: it may have been killed by a passing vehicle, but equally it might have been thrown from one (ED). Occasional mention of larger flocks of **Knot** than usual makes one wonder whether there may have been an increase in numbers; for instance, 4000 at low tide at Seafield, Leith, on 14th March was an exceptional number, though a lot depends on the state of the tide and degree of disturbance at this site (CT). In fog on 19th January a single **Ruff** was seen wading on a flooded road near Beeswing, Kirkcudbrightshire (JND).

A **Great Skua** at Tynninghame on 1st December has already been reported (3: 38). On the same day one, perhaps the same bird, flew east past Gullane Point (MGW).

Some winter records of **Lesser Black-backed Gulls** in Ayrshire were noted in our last issue (3: 38). It seems that in the Girvan area small numbers winter regularly. They have been seen in every winter month during the past eight years, about the estuaries of the Girvan and Stinchar, and along the coast between; and during the present winter one or two have fairly frequently been noted inland, on daily trips between Girvan and Barrhill, since November (WP). Away from the Shetlands and Hebrides, where they are more regular, single immature **Glaucous Gulls** were in Aberdeen harbour on 23rd November (NP), and at Prestwick, Ayrshire, on 13th March; and an adult was at Ayr on 28th February (GAR). An immature **Iceland Gull**

was at Inverness on 6th March (MR). An adult took up residence on the *Carrick*, moored on the Clyde in the middle of Glasgow, and was still there on 7th March after several weeks (CVC). Like other birds seen by large numbers of local bird-watchers, it has been reported by none, presumably on the basis that someone else would attend to the matter! Since **Little Gulls** are more usually noted in Angus than in Fife in winter (see 1: 362) it may be worth mentioning six adults and a 1st-winter bird flying up and down offshore at Tentsmuir Point on 4th March (CVC), and another immature at St Andrews on 27th March (TCS), though the localities only serve to emphasise the winter preference for the Tay estuary. At Dunwan Dam, Renfrewshire, a **Kittiwake**, thought to have died within the previous two weeks and to be a 2nd-winter bird, was found on 12th January (LAU); and another inland record is of an adult found dead at Loch Leven, Kinross-shire, on 19th January (AGG, TDHM). There was a sudden return to the waters off Elie Ness, where there had been none all winter, with dozens there on 15th February (DWO).

A **Little Auk**, which had been dead for several days, was found inland 3 miles from Stranraer on 8th February (HF); an exhausted and slightly oiled bird was found at Leuchars, Fife, on 19th February, after strong north-east winds, but flew off when released over the sea (THE); and one recently dead was found $\frac{1}{4}$ mile inland at Kilconquhar, Fife, on 22nd March (DWO). Two **Black Guillemots** in summer plumage off Gullane Point, East Lothian, on 15th March are evidently only the second record for Aberlady Bay Nature Reserve (see 1: 343) (RSB, GdK, AT). Several dead **Puffins** on the shore at Elie on 21st March might suggest some disaster during recent gales but we have had no other similar reports (DWO).

It is difficult to avoid mentioning **Collared Doves** every quarter. The recent claim of a first record for Renfrewshire (3: 39) has produced further information and an earlier date: there was one in a small wood midway between Bishopton and Langbank in the north of the county on 19th April 1963 (HG, GW); one in Paisley (Greenhill Road) on 18th September (GW); six nearby (in Murray Street) from 14th to 16th November (HG, IG, RM, GW); and five, probably the same birds, about $1\frac{1}{4}$ miles away by the Black Cart at Blackston Farm (HG, IG, JAG, GW). In Morayshire Collared Doves continue to thrive and there are now at least five colonies, with a county population estimated to exceed 200 birds: the original and largest colony, at Covesea, probably numbers over 60, as 48 were seen at once on 16th August, and even 52 on another occasion (WC). In St Andrews, Fife, the first record was in May 1961 (1: 486): one was there on 12th May 1963 (MHEC); and one on 5th March (JLSC). Also in Fife one was at Dunotter, near Colinsburgh, on 15th January (WJE); and at Dun-

fermline two appeared on 28th February and were still there a month later, evidently the first since August 1959 (1: 189) (GD, JP, IT). We have decided, now that the species is so widespread, to record certain other records in case they may later help to complete a picture of the spread of the birds. These records, never established to our complete satisfaction but probably all referring to Collared Doves, are of one at High Valleyfield, Fife, on 21st June 1962 (JH); and at Killearn, Stirlingshire, one on 23rd and 30th April 1963 and two on 11th May 1963 (AJBL); they were also rumoured to be at Loch Ard, Perthshire, in June 1962 (per MFMM).

Further reports of numbers of **Long-eared Owls** (see 3: 40) are of 11 in one thicket at Aberlady on 1st January (RSB); and up to 12 wintering at Baltasound, Unst (SS). At Aberlady six **Short-eared Owls**, unusually many for the area, were flushed from boggy ground on 26th January, and there were seven on 2nd February and four on 9th (FK, MGW).

Green Woodpeckers can be seen most days near Craigieburn, Moffat Water, and an adult and three juveniles there in July 1963 indicates breeding in that part of Dumfriesshire (RWA, ED). A **Great Spotted Woodpecker** feeding along some fence posts at Morton Lochs on 1st January seems to be the first record for the reserve (CVC).

Another late **Swallow** (see 3: 40) was drifting southward at Aberlady on 17th November (MGW).

Two **Hooded Crows** were at the Doonfoot, Ayr, on 16th December (AMcR). Many times in January a great procession of **Rooks** and **Jackdaws** was seen over Cupar, Fife, at dusk, passing for more than an hour, and reckoned at 20,000 to 30,000 birds on the 8th (DWO). Jackdaws probably of the Scandinavian form were reported from Stornoway in December (3: 40). On 13th January two there had definite white half-collars and lighter napes than British birds, and a third had a less obvious collar. It seems likely that these, and others reported in the area, were of Scandinavian stock. The observer comments that the collar seems to be formed by white-tipped head feathers coinciding with the line of demarcation between grey and black feathers; the mantle seemed to be very dark glossy blue, and the nape a mottled light grey—lighter than on other nearby Jackdaws (WAJC). In west Fife three **Jays** were seen near Bogside Station on 29th February (JB).

On a visit to the Applecross peninsula in Wester Ross from 7th to 11th February **Great Tits** were recorded in many places, and it was especially interesting to see them, two or three times, along the shore in quite deserted places where there were scarcely any trees of any description (JB).

In Shetland a **Stonechat** was seen at Aywick, Yell, on 26th and 27th February (RJT). An immature or female **Black Red-**

start was captured in a mistnet at St Andrews on 17th January (JLSC).

A hen **Blackcap** visited a bird table in Mayfield Road, Inverness, daily from the last week of January until 14th March or later; a cock appeared on 22nd February and remained for a week or so (UP, MR, MJM). Another hen **Blackcap** came to be fed in Kinghorn, Fife, from the middle of March until 31st at least (GD, MCW).

In addition to those already noted (3: 42) there are quite a few reports of **Great Grey Shrikes**, all single birds:

Golsie, Sutherland—15th and 23rd Jan (JDO, IDP).

Achnaclerach, Garve, Ross—4th Jan (TDHM).

Nethy Bridge, Inverness—14th Jan (RHD).

Boat of Garten, Inverness—16th Jan (RHD).

Gartocharn, Dunbarton—16th Feb (RSh per VMT) and 2nd Apr (JGS).

Barr Meadows, Renfrew—15th and 16th Feb (RCD).

Moffat, Dumfries—26th Jan to 12th Mar (RWA, ED, JKRM).

Two **Hawfinches** were seen flying overhead a little north of the Royal Botanic Garden, Edinburgh, on 7th March (MGW). A flock of 200 **Twite** was seen at Loch Gruinart on Islay on 29th December (CT); and there were about 75 on 17th January on the shore at Kirkcolm, Wigtownshire, which is said to be a regular haunt (JM, ADW).

It is very difficult to know whether reports of **Crossbills** refer to immigrant birds or to the local population, let alone whether some of the birds might this year be **Parrot Crossbills**, and we therefore list the following records with no more than a presumption that they may be immigrants:

Kinnaird Park, Brechin, Angus—2 on 9th Mar (see 2: 483 for breeding record) (GMC, JD).

Near Fortingal, Perth—8+ in larches in narrow part of Glen Lyon on 24th Jan (JW).

Near Gartmore, Perth—13 and later a flock of about 60 on 9th Feb (RSB, GdK, AT).

Inveruglas, Loch Lomond—16 adults, tending to feed in pairs, in larches on 2nd Mar, and 6 next day (TN).

Kilmacollm, Renfrew—about 20 on 13th Feb had been there eating larch cones for about 10 days (DM).

Gifford, East Lothian—1 on 8th Feb (for previous record see 2: 373) (TCS).

Edrom, Berwick—1 on 1st Jan (DGL).

Earlier observations—before 1st November 1963

Single **Marsh Harriers** in Aberdeenshire in 1963 at Strathbeg on 10th August and over the Moor of Forvie on 5th May have been reported (2: 435, 487). At the latter place one, perhaps the same, was noted also on 17th May and 30th July (GMD, WM).

In north-west Glasgow a **Red-necked Phalarope** was seen on the River Kelvin at Summerston on 1st October 1962; it was

watched on the water and in the air, and a detailed description has been submitted to us (WMME).

General observations on plumage, etc.

On 6th March a very dark (melanistic) **Grey Lag Goose** was seen near Newburgh, Aberdeenshire: the belly and undertail were very dark, appearing black; upperparts, including neck and head, dark brown, with individual back feathers appearing edged lighter; pale brown band across front at base of neck, but not at sides or back; outer tail feathers white, the only white seen on the bird; legs very much darker than other Greylags; bill nearly normal (GMD). On 15th March near Maybole, Ayrshire, two dark geese seem much more likely to have been melanistic Greylags than any possible hybrids. One was dark brown on back, breast and belly, with slightly lighter feather-edging giving normal Greylag pattern on back, but even the lighter colour was darker than any Greylag; some 2 inches of white under tail-coverts; in flight wings had grey leading edge, but with some brown freckling, and dark brown trailing edge intruding raggedly into the grey. The second bird was black-brown on back, breast and belly, with nigger-brown back pattern, neck and head; only a little white on upper tail-coverts, and very little grey on brown wing. Both birds were normal in size, shape and soft parts (GAR).

Pink Black-headed Gulls have been noted previously in Aberdeenshire (2: 97). On 7th March one was seen in a field near Tarves in company with normal birds; it had the whole breast, belly and shoulders uniformly suffused with a very delicate pink (GMD).

An injured **Tawny Owl** found by the road at West Calder, Midlothian, on 18th February had an opaque bluish-white area covering at least the lower half of the eye. A similar condition in a **Leach's Petrel** is recorded in a paper in this issue. The cataract could have been congenital or the result of an injury. The owl died a day or two later (HH).

Obituary

IAN MURRAY THOMSON, F.R.P.S.

(Plate 7)

The most valuable commodity of the bird photographer is time—and a busy Harley Street dentist would perhaps seem the last person to have much to spare. It is all the more remarkable therefore how much superb bird portraiture was produced by Ian Thomson during limited leisure time. His best known work was done in East Anglia—Bitterns, Avocets, Bearded Tits, and especially Montagu's Harrier—but he always returned, when he could, to Scotland, where he had been

at school at Loretto in Musselburgh. Over the years he tackled most of the better known Scottish species.

Although he was one of the pioneers in the field the quality of his early pictures, for all the advances in equipment since then, could hardly be improved. He was a perfectionist, a fact which won him his Fellowship of the Royal Photographic Society in the 1920's and which saw his bird portraits hung in major exhibitions up and down the country. He tackled many challenging subjects—not only shy birds like the Golden Eagle, but also many of the difficult smaller birds such as the Siskin and Bullfinch.

He had an eye for sequences of pictures and it is sad that when he started to take up cine photography his health should have let him down. However, S.O.C. audiences will remember some striking colour films, especially of his favourites, the divers, and of the island of Hascosay. But Ian Thomson in a sense anticipated the technical advances of cine film; those who remember his lectures will recall how he used to show a series of black-and-white slides telling a complete story of an incident at the nest which somehow showed one even more clearly than the movie can the excitement of watching and photographing birds at close quarters from a hide. The same interest was conveyed by his only book—*Birds from the Hide*—published in 1933.

After practising for some years in Aberfeldy he retired to Perth but poor health prevented him making full use of hard-earned time. He never sought the limelight and so his work achieved distinction entirely on its merits. But he was a forthright and robust character, always keen to talk shop with any who shared his enthusiasm for birds and his love of wild places. He gave generously of advice and encouragement to others keen to take up the challenge of recording birds with the camera, and there will be many like myself who owe much to his example and enthusiasm. We extend our sympathy to his wife Betty, who shared, as only a bird photographer's wife knows how, the long patient process of waiting for success.

C. K. MYLNE.

Review

A Study of Bird Song. By Edward A. Armstrong. London, 1963, Oxford University Press. Pp. xv +335; tables, text figures and 17 plates. 45/-.

The main reason for the popularity of birds is that they thrust themselves upon the observer; often, like the newsboy, they shout their tidings at you. They cannot be ignored. But what, indeed, are their tidings? Are they songs of joy; or blasts of blasphemy? Is the song of the Nightingale a heart-throb? Can the trill of the Robin be anything but a battle-cry?

Are those Oystercatcher partners yonder, piping and cavorting so

grotesquely on the shore, performing an avian rock an' roll? The Sedge Warbler with its scythe-blade cadences, its cheeky vocal pirouettes, its total abandonment of all acoustic orthodoxy—is it a sort of avian Beatie?

Aristotle of course had something to say about bird notes; at any rate he is credited with observing that Partridge calls differ according to locality—that the birds have dialects. Our modern recording gear proves his point nicely—with other species (such as Chaffinches) anyhow.

Since his time, innumerable naturalists have endeavoured to assess the significance of bird calls and songs. Let it be said without further delay that each and all most certainly do have significance, no less than plumage patterns or bodily posturings. When, in *A Study of Bird Song*, the author points out that song is simply one aspect of a delicately integrated complex of behaviour, how true is he! We must study the whole living bird and see how its songs and calls fit into the whole pattern of its life; only then may we begin to understand the real significance of each vocal component. Beginners would, for this reason, be well advised to read a primer, such as the author's own *The Way Birds Live* before they tackle the present volume.

The book is largely an extensive compilation from the literature, interspersed with observations from the author's own very extensive field experience. Only the more experienced field man—the type of chap who could write an essay about the birds around him, and what they were doing, even though his eyes were closed—will gain full value from each page of massed quotation, simply because only he will have heard such things himself, and know the cognate circumstances. Some of the more straightforward topics dealt with include bird language; the structure and components of song; sub-song; mimicry; territorial song; female song; duetting; corporate song; the influence of weather; and can bird song be Art and Play?

We are back to the questions again! But the author gives us a closely reasoned affirmative to this one; other workers do, too. Birds may, it seems, have some sort of aesthetic sense; they may, according to some researchers, upon occasion sing or call, in quantity as well as quality, over and above the amount needed to achieve the functional needs of the moment. I think we shall be hearing a little more upon this one.

A Study of Bird Song shows us that while we have made a very useful start in our understanding of the subject, we are nevertheless still quite literally at the recording and cataloguing stage. It is a fact that the magnificent B.B.C. Sound Library still has gaps in the recorded call notes of even common native birds; absolute completeness is scarcely attainable, for we can never possess a complete *Checklist* of bird notes on which to base a master *Check Tape*, yet identification and descriptive cataloguing is the basic step in all studies; from this alone can more sophisticated work spring.

While, then, advanced workers undertaking further researches not only on acoustic communication, but on many other aspects of behaviour as well, will particularly welcome this book, it will play its part in stimulating discussion about the subject generally, and thus encourage the many people who find great difficulty in identifying even the commoner bird-notes of our seashores and countryside.

There are 245 pages of closely packed text, an appendix, addenda, over 37 pages of references, 17 plates of well-chosen photographs, and a great many text figures and tables.

C. E. PALMAR.

Official Section

THE SCOTTISH ORNITHOLOGISTS' CLUB

ANNUAL CONFERENCE

The Seventeenth Annual Conference and Twenty-seventh Annual General Meeting of the Club will be held in the Dunblane Hydro Hotel, Dunblane, Perthshire, from 23rd to 25th October 1964.

The decision to hold the Conference in Dunblane has been made by the Council after full consideration of the other alternatives, and of the complaints received concerning service and conditions at Dunblane last year. The Council considers that Dunblane offers the best centre and facilities for the Conference, and after holding very full discussions with the Management, have accepted assurances that there will be no grounds for complaint this year.

A detailed list of accommodation is given below. Terms at hotels other than the Conference hotel are given as a guide only, and prices should be confirmed.

The Conference registration fee will be 10s. The cost of the Annual Dinner to members not staying in the Conference hotel will be 21s inclusive. Both these items should be paid at the Conference registration office on arrival.

The full Conference programme will be printed in the next issue of "Scottish Birds", and this intimation is given in order that members may make their hotel reservations in good time. These are made direct with the hotels and **not** with the Secretary.

Hotel Accommodation in Dunblane

DUNBLANE HOTEL HYDRO (Tel. 2551). Special Conference charge: £6, 10s 0d (or £3, 5s 0d per day) inclusive of service charge. Details as follows: accommodation and all meals from Friday dinner to Sunday luncheon, after-meal coffees, afternoon tea and biscuits on Saturday, and the Annual Dinner (inclusive of wines or soft drinks).

Residents for less than one full day will be charged as follows: bed and breakfast 35s, luncheon 13s 6d, dinner 17s 6d.

STIRLING ARMS HOTEL (Tel. 2156). Bed and breakfast from 25s.

*THE NEUK PRIVATE HOTEL, Doune Road (Tel. 2150). Bed and breakfast 19s 6d to 21s.

*SCHIEHALLION HOTEL, Doune Road (Tel. 3141). Bed and breakfast 18s 6d to 21s.

¶HARDLEIGHTON HOTEL (Tel. 2273). Bed and breakfast 15s to 17s 6d.

*These hotels are some distance from the Conference Hotel.

¶Situating near the Conference Hotel gates.

Hotel Accommodation in Bridge of Allan

ALLAN WATER HOTEL (Tel. Bridge of Allan 2293). Bed and breakfast 38s 6d to 43s 6d.

ROYAL HOTEL (Tel. Bridge of Allan 2284). Bed and breakfast 36s.

Members with cars who have difficulty in obtaining single rooms in Dunblane should find that the above two hotels in Bridge of Allan have ample single accommodation. The distance from Dunblane is about 3 miles.

ABERDEEN BRANCH EXCURSIONS

The following excursions will be held in addition to those already published in the last number of the Journal.

Sunday 12th July

BEN A' BHUIRD or BEN AVON—further details from Branch Secretary on request.

Sunday 2nd August

YTHAN ESTUARY—Leader: Alex. Anderson. Meet at Ythan Hotel 10.30 a.m.

A REPORT OF THE DUMFRIES WEEKEND EXCURSION

The Dumfries weekend is undoubtedly one of the most popular and rewarding of our S.O.C. excursions, and the one held this year from February 21st to 23rd was no exception.

From many parts of Scotland, from London, Bedford and neighbouring Northumberland we arrived in Dumfries, drawn by the magnet of the geese which use the Solway as their winter quarters, the Barnacles and the Bean geese, the White-fronts, Grey Lag and Pinkfeet. Nor were we disappointed, for on the Saturday morning led by Langley Roberts the Warden of the Caerlaverock Reserve, we came on the flock of Barnacles, two to three thousand of them, unmistakable in the thin winter sunlight, the black and white geese we had all come so far to see.

Geese however are not the only attractions of the area, and in fact the search for the elusive Willow Tit gave us much fun and satisfaction over the weekend, while Carsethorn, Loch Arthur, Woodhall Loch and Loch Ken provided us with duck and waders, grey geese and a Sparrow Hawk, and small birds in plenty.

On Saturday evening we all met in the hotel for an informal reception with members of the Dumfries Branch which gave us the opportunity to talk, or to look over the many bird books brought from the S.O.C. Bookshop by our Secretary Mrs Waterston. This was followed by a talk given by a member of the Dumfries Branch, Emilio Dicerbo, who with the assistance of Robert Adamson showed us many of his delightful and unusual colour slides of local birds, accompanied by his own commentary on a tape recorder.

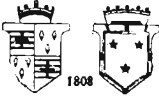
So in two short days we have seen some of Scotland's most exciting birds, we have met old friends and made new ones, and we have decided that next February will see us back on the Solway hunting for geese.

OLIVE THOMPSON.

S.O.C. BOOKSHOP

A selected list of new books or additions to our autumn list.

- CHRISTIAN. Garth, 1963. *While Some Trees Stand*. 21s.
 DELACOUR. Jean, 1964. *The Waterfowl of the World*. Vol. IV. 6 gns.
 DELACOUR. Jean, *The Pheasants of the World*. 7 gns.
 ENNION. E.A.R., 1963. *Birdwatching*. 16s.
 GORDON. Seton, 1963. *Highland Days*. 30s.
 HERIOT. Jo, 1963. *Very Fine Company*. 21s.
 L.N.H.S. Rev. Edition, 1964. *The Birds of the London Area*. 42s.
 PETERSON. R. T., 1961. *A Field Guide to Western Birds*. 38s.
 PETERSON. R. T., 1963. *A Field Guide to Birds East of Rockies*. 38s.
 SALOMONSEN. Finn, 1963. *Oversigt over Danmarks Fugle*. 20s. (Check List with good English vocabulary).
 SOUTHERN. H. N., 1964. *Handbook of British Mammals*. 37s 6d.
 WELTY. J. C., 1964. *The Life of Birds*. 84s.



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b) DW/A67-76 by Eric Herbert
SEA BIRDS

Fulmar, Cormorant, Herring Gull, Lesser Black-backed Gull, Great Black-backed Gull, Kittiwake, Common Tern, Common Tern Chick, Common Gull-inot, Puffin.

c) DW/A57-46 by Eric Hosking
BIRDS' BILLS

Coloured sketch of 9 types. Flesh tearing: Hobby. Fish catching: Bittern. Small sea-fish catching: Razor-bill. Carrion: Crow. Mud probing: Curlew. Mud sitting: Avocet. Sitting and shell cracking: Elder Duck. Insect catching: Redstart. Seed cracking: Goldfinch.

d) DW/A47-56 by John Markham
& others
BIRDS' FEET

Coloured sketch of 9 types. Lobate foot: Coot. Webbed three forward toes: Shelduck. Webbed all four toes: Gannet. Preying: Kestrel. Feathered preying: Tawny owl. Wading: Oyster-catcher. Perching, hopping and clinging: Chaffinch. Perching and walking: Woodpigeon. Climbing: Green Woodpecker.

e) DW/A1-6 by Eric Hosking
BIRDS ON THE WING

Song-thrush, Greenfinch, Lesser Spotted Woodpecker, Kingfisher, Wheatear, Swallow.

f) DW/A7-12 by Eric Hosking
BIRDS AND NESTS

Chaffinch, Long-tailed Tit, Song-thrush, Song-thrush with young, Robin, Black-headed Gull.

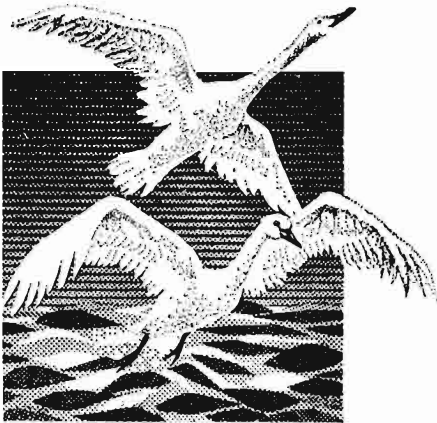
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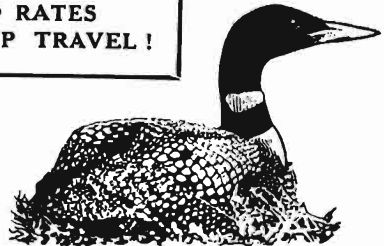
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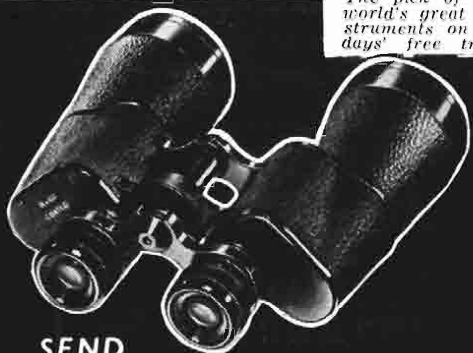
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