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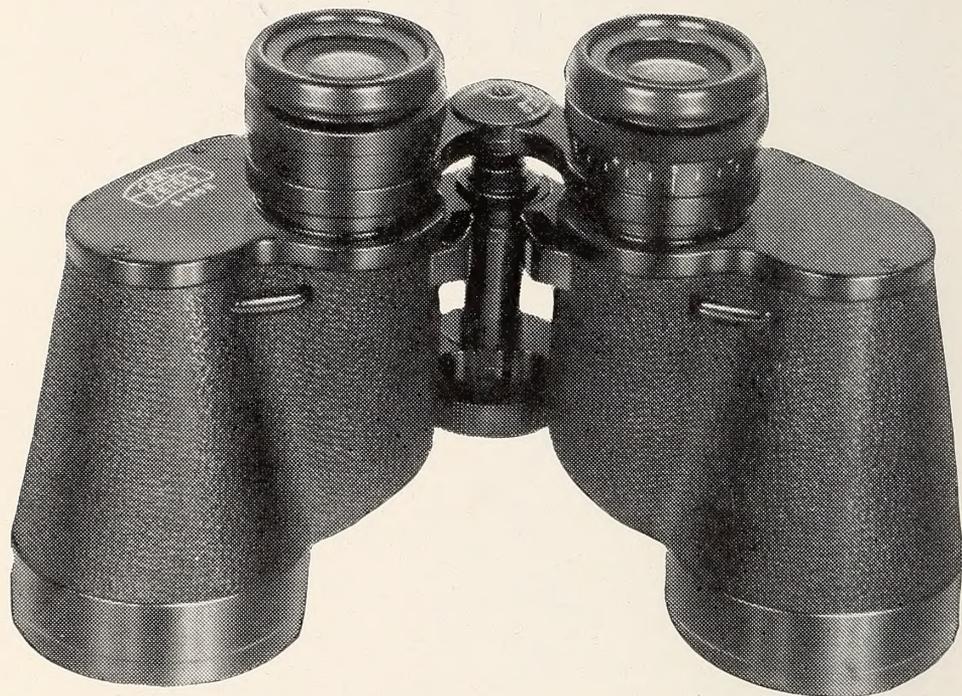
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Volume 5 No 1

SPRING 1968

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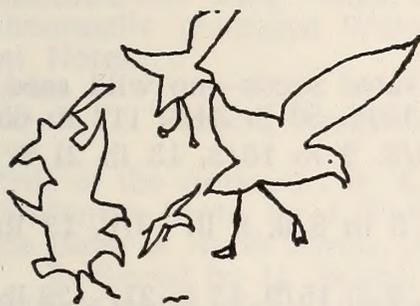
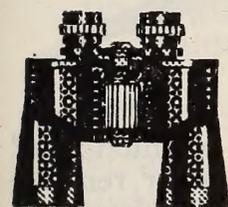
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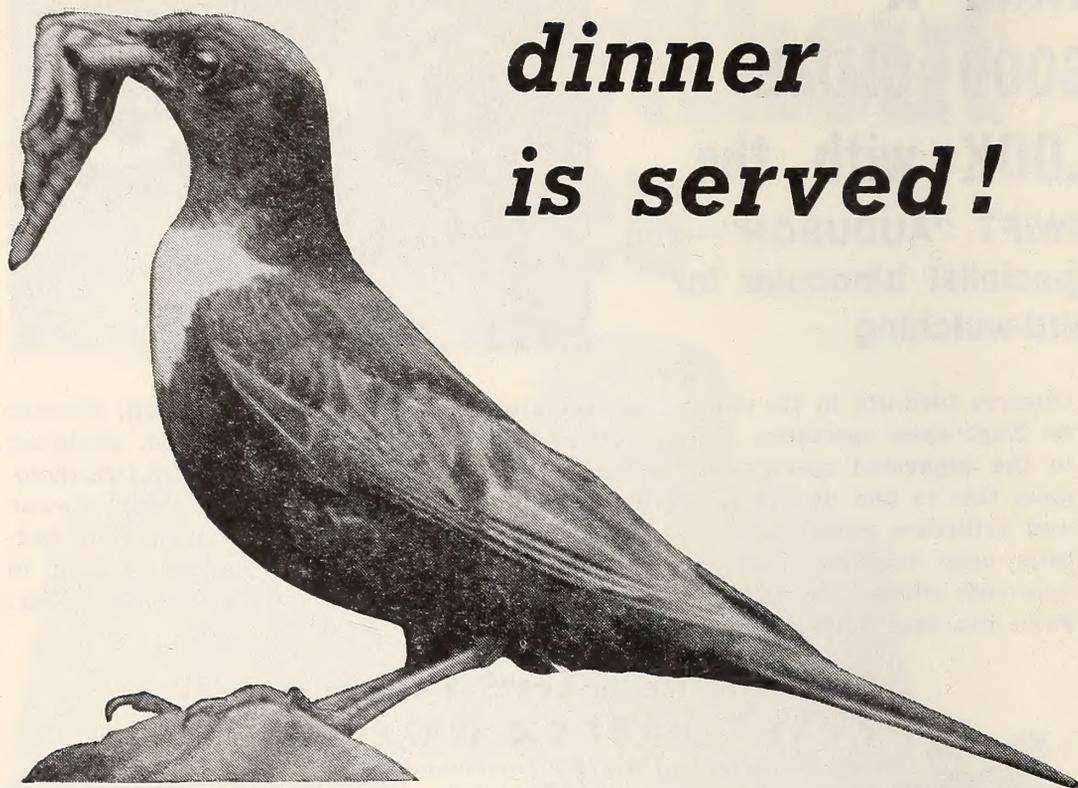
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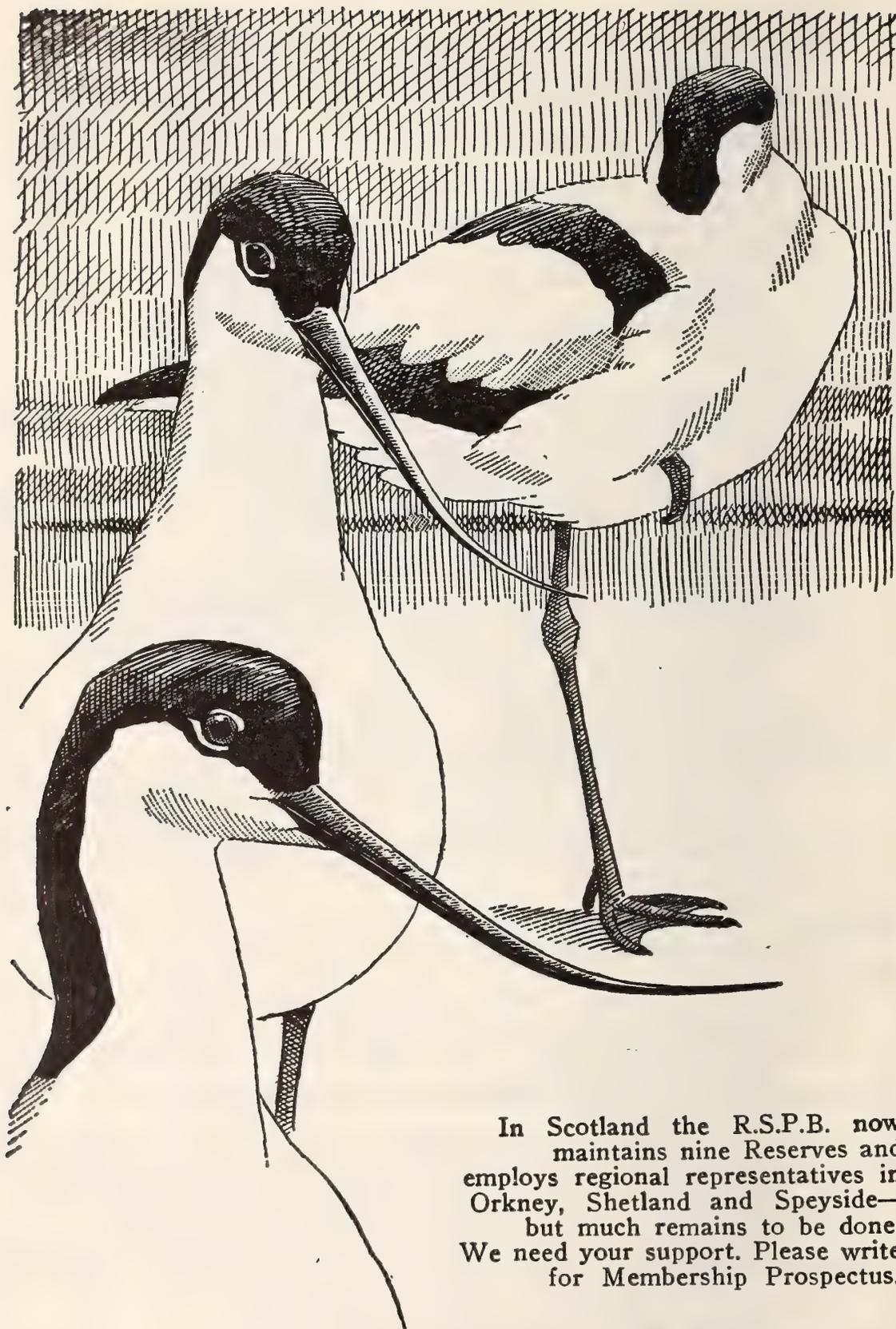
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Edited by Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12.

Assisted by D. G. Andrew, T. C. Smout and P. J. B. Slater.

Business Editor T. C. Smout, 93 Warrender Park Road, Edinburgh 9.



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Vol. 5 No. 1

Spring 1968

Edited by A. T. MACMILLAN with the assistance of D. G. ANDREW, T. C. SMOUT and P. J. B. SLATER. Business Editor, T. C. SMOUT.

Editorial

A new suit of clothes. People may be divided into those who prefer the reassurance of things as they have always been and those who grow restless for change. Various friends have suggested that the cover of *Scottish Birds* might be due for a facelift, though opinions as to how to go about it, or what was good or bad about the old one, or the various ideas for a new one, were as contradictory and varied as the people canvassed for their views. We like the new design more and more, and believe it gives a more lively and up-to-date appearance to the journal, now entering volume 5 and moving towards the end of its first decade. We hope readers like it too. Our sincere thanks are due to Ian T. P. McIntosh, who really got us moving on this, and to John Busby, who designed the new cover and drew his highly individual portrait of the Crested Tit—with perhaps a sideways glance at the editor.

Photographs. For some time we have been keen to have the plates bled off the edge of the page—a printer's way of saying that the picture goes right to the edge and is not surrounded by a distracting white border. The effect is generally more pleasing, but we have hesitated over the slight extra cost for larger blocks and the fear that we would not get enough pictures of adequate quality and sharpness to justify the change. Now we have taken the plunge.

Disturbance. Under the Protection of Birds Act 1967 anyone wishing to photograph birds listed in Schedule 1 (as amended) of the 1954 Act at the nest must get a licence first. Not all these birds are rare, and many of them are popular with photographers in Scotland. No one is allowed to help to catch or ring birds, even as a trainee under full supervision at a bird observatory, without first getting a licence from the Natural Environment Research Council, 19 Belgrave Square, London SW1. We believe that these provisions stemmed from a desire to prevent such things as misguided schoolboys putting bits of bent wire on birds' legs, or law-abiding

sheep farmers keeping eagles from their nests to prevent the eggs hatching. The methods chosen to achieve these worthy aims have been described, with some feeling and much justification, as bureaucracy gone mad. The consequences of this legislation seem to have greatly surprised its supporters, and though it was advocated by birdwatchers it is very difficult now to find anyone to speak in favour of it—among, that is, the few who understand it. We hope shortly to publish a paper dealing with the whole subject, and therefore content ourselves meantime with saying that if you intend doing any of the many things for which a licence is needed, and do not know that you have to have one, you had better find out about it at once, and you may already be too late for 1968.

Current Notes. Readers will now be familiar with the plans for an annual Scottish Bird Report, set out in detail in the Winter 1967 issue. Most regular contributors will have received also a duplicated *aide-mémoire* on the revised arrangements for sending notes to *Scottish Birds*, but anyone who has not had this and would like a copy may have it for the asking.

The last of the old-style Current Notes, to the end of 1967, is published in this issue. It will in future be a very much shorter section and will be confined to matters of special topical interest; the mass of more-general information will appear only in the annual Scottish Bird Report.

A brief summary of what should be done with notes in the future may be useful. Rarities and material for Short Notes should be sent at once, preferably to the appropriate local recorder to forward to the editor. Material of possible interest for the new, short, quarterly Current Notes should be sent to local recorders by the end of March, June, September and December, for collation with other notes and transmission to the editor. Early in November all records for the first ten months of the year (including those already reported, unless you make special arrangements) should be sent to the local recorders, and early the following January those for the final two months should follow.

Index and binding vol. 4. Titlepages and an index to volume 4 are being distributed with this issue. Binding arrangements are described inside the cover of the index, and readers who want their copies bound are urged to give the details asked for on the back cover and to send the parts and the right money to the binders as soon as possible. Charges are up a little, thanks quite largely to the high level of postage, but also to the thickness of many issues of the journal, each of

which has to be divided and rejoined into three sections in the binding process to make a neat job.

Conservancy appointments. At the end of 1967 Dr John Berry retired from the position of Director of the Nature Conservancy in Scotland, a post he had held since it was created in 1949, and in the New Year's Honours list he was awarded the C.B.E. for his work in this and other fields. He is succeeded by Dr W. J. Eggeling, equally well known in Scottish ornithological circles. We send them both our congratulations and best wishes for the future.

Ornithological atlas. Possibly the most important and certainly the most ambitious cooperative enquiry ever tackled by British ornithologists gets under way this summer. The BTO has given the go-ahead to the British ornithological atlas (see *Scot. Birds* 4: 402), and over the next five years it is hoped to map the exact distribution of all the breeding birds throughout the British Isles. A leaflet about the project is enclosed with this issue of *Scottish Birds*, and we hope that as many people as possible will join in and help with the work. It is not very difficult but it is very important. Let us put on a really good show in Scotland, so that the larger part of the country need not be covered by visitors from south of the Border who have finished their own areas. Certainly we will need and welcome help from holidaying birdwatchers to cover the remoter areas, but let us make a big effort to cover as much as we can. If the botanists can do it (and they did), so can the birdwatchers.

Seabird Breeding Distribution Survey. It is nine years since the last Fulmar and Kittiwake census was made in 1959, and counts of these species are therefore due to be repeated in the summer of next year. The Seabird Group has decided that the occasion should be utilised to attempt a national census of the other major colonial seabirds as well, and has entrusted the preparation of this project to a Census Committee which numbers among its members many of those responsible for such historic censuses as those of Fulmar, Gannet and Kittiwake, including James Fisher (Chairman), John Coulson (Scientific Advisor) and George Waterston (Scottish Representative).

It has been decided to prepare for this census (which has the support of the major ornithological societies) by carrying out a distribution survey of breeding seabirds this summer, with the object of establishing the location of the major colonies and the approximate numbers of each species present; the full census can then be carried out more easily in the course of the 1969 season. A pilot survey last summer

has confirmed the feasibility of this procedure and indicated the nature of the main difficulties likely to be encountered in the course of the project. Inevitably the task of counting the seabirds breeding in Scotland must rank as the major of these difficulties, with the country containing so many breeding birds along so much inaccessible coast. Despite these problems SOC members were able to provide considerable information on the distribution of seabird colonies during the pilot work last summer and it is hoped that they will again assist this summer and next.

The object of the breeding distribution survey this year is to obtain as comprehensive data as possible on the presence or *absence* of each species along the coast and on islands, together with estimates at least, and counts where possible, of the numbers present. For the time being, information on inland distribution is not being requested, though this may well be collected in another year. SOC members spending any time on the coast or on islands in the course of the breeding season are invited to participate in the survey. It is intended shortly to base a fulltime Organiser for the scheme in Scotland but until these plans have been finalised further information about the project can be obtained from the Census Secretary, Raymond O'Connor, Department of Physics, Birkbeck College, Malet Street, London WC1.

Seabird Census Organiser. A fulltime Organiser is required by the Seabird Group to organise and coordinate its National Seabird Census 1968-70 and to arrange for the analysis and publication of the results. The salary offered will be in the range £1200-£1500 p.a. For further details those interested should write to Dr W. R. P. Bourne, Shrodell's Hospital, Vicarage Road, Watford, Herts.

Seabird survey. A survey of the dates of attendance of various seabirds at their breeding colonies is being organised with the backing of the Seabird Group. Anyone able to visit a colony regularly throughout the year, or merely during the periods of increase or decrease in numbers, can help. Further details may be had from the organiser, Jeremy Greenwood, Zoology Department, University of Dundee, who would also be glad to hear from anyone who has kept records of regular visits to colonies during past years.

Ringling training. From time to time we are asked where one may learn to become a ringer or a mistnetter. Up to three people will be welcome at weekends at Bamburgh Ringing Station, which also provides cooking facilities and camp beds (bring your own sheets) for 4/- a night. Full details from J. M. Bayldon, Orchard House, Doncaster Road, Thrybergh, near Rotherham (telephone: JMB at Thrybergh 329; if he is out, M. Bell at Newcastle upon Tyne 628196).

R.S.P.B. courses. Courses in birdwatching, open to all members of the R.S.P.B., even complete beginners, have been arranged for 1968 in the Scottish Highlands and half-a-dozen places in England. Mostly these cover the general study of birds, but there is one on bird photography, one on drawing and painting, and one on a sailing ketch off the coasts of Suffolk and Essex. Details from The Lodge, Sandy, Bedfordshire.

Wildlife Photographer of 1967. We are very pleased to see that the British Birds section of the *Animals Wildlife Photographer of 1967* competition was won by Sydney J. Clarke of Duns, and we send him our congratulations on his medal. He is a photographer who concentrates on the ordinary birds round his home (like the Hedge Sparrow—*Scot. Birds* 4: 162) rather than pursuing rarities, and his winning entry was a typical and charming colour cameo of a Song Thrush on a snow-clad branch.

Current literature. Material of interest to Scottish ornithologists in recent periodical literature includes:

Transactions and Proceedings of the Perthshire Society of Natural Science for the Years 1963-65. Vol. xi. 1966. Revived after a gap of 12 years, and including the following ornithological material:

Perthshire heronries. V. M. Thom, pp. 28-29.

Grey geese in Perthshire. V. M. Thom and C. Murray. pp. 38-42

The spread of the Collared Dove. A. M. M. Macfarlane. p. 43.

Birds of Perthshire: a list of selected species. P. F. James. pp. 44-46.

Ornithological Section. pp. 62-63. Formed in 1963.

Fair Isle Bird Observatory Bulletin. Vol. 5, No. 7. 1967.

Among many valuable notes by the warden, R. H. Dennis, may be mentioned 'Changes in the arrivals and departures of seabirds at Fair Isle', pp. 236-240, and 'The status of the Cormorant at Fair Isle', pp. 247-250.

Forth Island bird counts 1967. R. W. J. Smith, 1967. *Edin. Nat. Hist. Soc. News-Letter* 1967: 18.

Ecological studies of seabirds. G. M. Dunnet [1968]. *Seabird Bull.* 5: 2-11. Text of paper given at S.O.C. Annual Conference on 28th October 1967.

University seabird work. University of Aberdeen. Anon [1968]. *Seabird Bull.* 5: 27-28. Survey of present activity.

The plumage of Fulmars. K. G. Walker, 1967. *Bird Study* 14: 247. Letter suggesting that scruffy St Kilda birds are ill, not aged.

The Peregrine situation in Great Britain 1965-66. D. A. Ratcliffe, 1967. *Bird Study* 14: 238-246. Including Scottish data.

- Red Grouse chick survival in captivity and in the wild. D. Jenkins, A. Watson and N. Picozzi. *Trans. 6th Cong. Int. Union of Game Biologists, 1963*. pp. 63-70.
- Heather performance and Red Grouse populations. 1. Visual estimates of heather performance. G. R. Miller, D. Jenkins and A. Watson, 1966. *J. appl. Ecol.* 3: 313-326.
- Population fluctuations in the Red Grouse *Lagopus lagopus scoticus*. D. Jenkins, A. Watson and G. R. Miller, 1967. *J. Anim. Ecol.* 36: 97-122.
- Three papers from the Unit of Grouse and Moorland Ecology at Banchory. See also *Shooting Times* 19.1.67, *The Field* 11.5.67, *Country Life* 22.6.67 (pp. 1602-1603), and *Nature* 16.9.67 (215: 1274-1275).
- Blackgame and Capercaillie in relation to forestry in Britain. G. W. Johnstone, 1967. *Forestry Supplement* 1967: 68-77. Based on Scottish studies.
- Sardinian Warbler on Fair Isle. R. H. Dennis, 1967. *Brit. Birds* 60: 483-485. First Scottish record.

Isle of May Bird Observatory and Field Station Report for 1967

*Prepared for the Observatory Committee by
NANCY J. GORDON, Honorary Secretary*

The Observatory was manned for a total of 194 days between 2nd April and 4th November 1967. The number of observer nights was 815.

The only major gap in observer cover was in October; coverage of spring migration was good, and as in 1966 continuity of observations was maintained throughout the summer by the Durham University team working on the gull populations. As at other east coast stations, spring migrants put in a late appearance, and at no time reached high numbers. The highlight of the autumn migration was the number and variety of warblers, occurring mainly in mid and late August, and mid September. The main fall of Scandinavian migrants came at the end of October.

New species recorded were a Spotted Crake *Porzana porzana*, trapped on 22nd September, and an Olivaceous Warbler of the eastern race *Hippolais pallida elaeica* trapped on 24th September (and later beheaded by a Great Grey Shrike on the 26th)—a first record for Scotland. A third new addition to the ringing list was an Arctic Warbler (30th August). Other rarities included Scarlet Grosbeak, Aquatic Warbler and *Tawny Pipit.

*Subject to confirmation by the Rarities Committee

Spring

Observers were on the island 2nd-29th April, 2nd-16th May and from 19th May onwards.

April. Cold weather and north or westerly gales deterred all but a few migrants during the first week of the month. The few were one or two Wheatears (on 2nd and 3rd), 12 Blackbirds and a flock of 20 Greenfinches on 3rd, one or two Fieldfares and Song Thrushes and local movement of Meadow Pipits. A Long-eared Owl seen on 6th was the earliest spring record. From 7th to 13th April winds were less strong and northeasterly, bringing several influxes of Dunnocks (up to 40 daily) and Robins (up to 60 daily). 70 Chaffinches and 40 Greenfinches appeared on the 8th with 3 Mistle Thrushes (sole spring record). Three Ring Ouzels and a Black Redstart arrived on the 9th, a Great Grey Shrike on the 10th, and another Black Redstart on the 12th. A small depression passing on 14th and 15th April brought 50 Blackbirds, 2 Woodcock and a few Fieldfares and Song Thrushes. During the following week of west winds there was no movement apart from 20 Wheatears on the 19th. On the 23rd, however, after a day of east winds, mist descended and the first Willow Warblers (25) came in overnight, with 60 Goldcrests, 100 Meadow Pipits, and small numbers of Wheatears, Blackbirds, Ring Ouzels, Fieldfares, Song Thrushes, Bramblings and a Woodcock. The first Swallows passed over on the 25th, and the first Whinchat on the 26th. Winds varied with passing fronts during the last few days of the month, the only additional species being a Golden Plover and a few Redpolls.

May-June. Cold northerly winds veered to southeast and strengthened by 4th May, a day of poor visibility and hence an influx of birds: Turdidae, 6 Whinchats, 3 Redstarts, 4 Blackcaps, 6 Goldfinches, 30 Wheatears and 4 Linnets. Similar movement continued off and on for the next 12 days as winds remained easterly and visibility often poor. 5th May added a Turtle Dove, a Whimbrel, 2 Lesser Redpolls, 4 Tree Sparrows, 6 Garden Warblers, 3 Sedge Warblers and a White-throat. New species after the 5th were 2 Lesser Whitethroats, 6 Pied Flycatchers, 2 Yellow Wagtails and 4 Siskins on the 7th, the first Sand Martin and Spotted Flycatchers (4) on the 8th, the first Cuckoo and Swift on the 10th, a Quail on the 12th, a Common Sandpiper and Wryneck on the 13th and a Tree Pipit on the 14th. After a two-day gap, observers returned on 19th May to find many migrants still present despite a return to west winds: 60 Willow Warblers, 60 Whitethroats, 20 Sedge Warblers, 7 Whinchats and 7 Redstarts. Numbers decreased in the clear weather of the next few days, though 6

Tree Sparrows were seen on 21st May and a Cuckoo on 22nd, and a Collared Dove was trapped on 23rd. The spring's last Fieldfare passed by on the 24th with a few Redstarts, Wheatears and Willow Warblers, but little movement was noted for the next few days, and the month ended with the passage of an Osprey on the 31st. Small numbers of martins, Wheatears, warblers and Spotted Flycatchers continued passing during the first few days of June, especially 1st and 2nd, when east winds and fog prevailed.

Summer

In June and July observers concentrated mainly on the island's breeding populations, and the only migrants or vagrants recorded were another Osprey and a Whitethroat on 19th June, 12 Bar-tailed Godwits on 2nd July, a Whinchat on 4th, a Redstart on 5th, and an early Whimbrel on 9th July. Purple Sandpipers returned much earlier than usual—the first on 4th July, increasing to 70 by 20th. A Collared Dove arrived on 11th and the year's third Osprey on 21st.

Autumn

Observers were in residence throughout August and September, 1st-2nd and 8th-16th October, and 28th October-4th November. Autumn migration was heralded by the first few Willow Warblers during the last week of July.

August. Apart from a Garden Warbler on 2nd, and a few Willow Warblers daily, 3 Pied Flycatchers on 7th and an Icterine Warbler on 8th, little migration was in evidence until a big influx on 9th after 48 hours of fog and east winds. Warblers predominated, with 20 Garden Warblers, 2 Icterine Warblers, 15 Sedge Warblers, a Wood Warbler, 5 Willow Warblers, a Blackcap and 2 Whitethroats, and also 30 Pied Flycatchers and 8 Wheatears. Movement continued for another two days in variable west winds, with 10 Whimbrel and a Greenshank on 10th, 3 Dunlin, 2 Sandwich Terns and 2 Sand Martins on 11th. East winds on 13th-16th brought another Whimbrel, a Green Sandpiper on 13th, more Wheatears, Garden and Sedge Warblers and an Aquatic Warbler on 14th, and an Icterine Warbler on 15th. A return to west winds produced a quieter spell with a trickle of Swallows and warblers, numbers increasing on 21st with light east winds and mist. A good influx on 25th brought 200 Willow Warblers, a Red-backed Shrike, 12 Whimbrel and a few Pied and Spotted Flycatchers. Coastal movement continued (warblers and Wheatears) in sunny weather for the rest of the month, which closed auspiciously with the capture of an Arctic Warbler on 30th, and a Reed Warbler on 31st.

September. The month began with a small movement of Tree Sparrows and Goldcrests, soon stemmed by westerly gales on

2nd and 3rd. As these lessened, local movement continued until 8th with Meadow Pipits and Swallows. On 9th interest was revived by the advent of 3 Barred Warblers and a Chiffchaff. On 11th, winds backed to the east, and at least 14 Fieldfares arrived, with a Redstart, a Garden and a Barred Warbler, 2 Whinchats, 20 Willow Warblers and 25 Goldcrests. East wind and poor visibility until 19th ensured a continued supply of interesting migrants, especially on 12th-14th (warblers, hirundines, Redstarts, Fieldfares, Whinchats, a Scarlet Grosbeak and a Red-breasted Flycatcher). Single Yellow-browed Warblers were recorded on 18th and 20th, 2 more Red-breasted Flycatchers on 17th and 20th, and a Spotted Redshank on 20th. After two or three days of north and west winds, a return to easterlies on 22nd brought 3 more Red-breasted Flycatchers, with Chaffinches, Garden and Willow Warblers, Blackcaps, Redstarts, a Whitethroat, and the island's first Spotted Crake. 23rd September was one of the peaks of the autumn migration, including at least 500 Swallows, a Red-breasted Flycatcher, a Yellow-browed Warbler, Fieldfares, Redwings, Starlings, Ring Ouzels and Song Thrushes, a Black Redstart and 3 Grey Wagtails. On 24th, with a Great Grey Shrike, 4 Garden and 8 Willow Warblers, there arrived a new species for the island, an Olivaceous Warbler, which was ringed but survived only until decapitated by the Great Grey Shrike. There was slight passage up to the end of the month of Fieldfares, Wheatears, pipits, Skylarks and Swallows. A Black Tern, a Great and an Arctic Skua were seen on 25th, and a Jack Snipe and 2 Lesser Redpolls on 28th. Redwing numbers reached 70 on 29th. Merlins were seen on 27th and 29th, and a Yellow-browed Warbler was caught on 30th.

October-November. Strong west winds blew almost continuously until 17th, and the only good day for migrants was the 9th, when 20 Goldcrests, 3 Blackcaps, 40 Fieldfares, 30 Redwings, 30 Song Thrushes, a Merlin, 3 Bramblings and a Red-necked Grebe were recorded. Other species worth noting were a Long-tailed Duck and 4 Black Guillemots on 12th, a Merlin on 13th, a Peregrine and a Blue Tit (the first for 10 years) on 14th. After a gap of 12 days observers returned on 28th, and north and west winds stayed with them until the end of the month. At first they saw only small movements of Fieldfares, Blackbirds and Redwings, with 2 Snow Buntings, 3 Whimbrels, a Woodcock, a Sparrowhawk, a Merlin and a late last Swallow arriving on 29th. By the 31st the wind shifted eastwards, and during this day and the next over a thousand each of Blackbirds and Redwings, and several hundred Fieldfares, passed through the island, with 12 Waxwings and a Long-eared Owl on 31st, and 20

Bramblings and another Sparrowhawk and Merlin on 1st November. After overnight gales, 2nd November saw more movement of Turdidae, but also a great increase in Goldcrests, which arrived in hundreds, and 20 Robins, 10 Blackcaps, 2 Great Grey Shrikes, 4 Long-eared Owls, a Black Redstart and a Water Rail. Between 31st October and 2nd November a total of 4 late Redstarts was recorded. Many of these birds (apart from the Goldcrests) had moved on by the 3rd, when the wind veered west once more, bringing few but noteworthy new arrivals—a Tawny Pipit, a Goldfinch and a very late Yellow-browed Warbler. The Observatory closed on 4th November after recording only 2 or 3 Siskins, Redpolls and Snow Buntings as new arrivals.

Unusual occurrences

Red-necked Grebe One, 9th-16th October. Seventh record.

Pochard One, 16th-23rd August. Sixth record (first since 1956).

Osprey One each, 31st May, 19th June, 21st July. Eighth year of occurrence, and a record number for a single year.

Quail One, 12th May. Eighth year of occurrence.

Spotted Crake One, 22nd September. First record.

Bar-tailed Godwit Twelve, 2nd July. First July record, and largest flock ever seen.

Black Tern One, 25th September. Third year of occurrence.

Collared Dove Two, 25th-26th May; one, 11th July. Fourth year of occurrence.

Long-eared Owl One, 6th April. Earliest spring record.

Blue Tit One, 14th October. Only seventh record, and first for 10 years.

Aquatic Warbler One, 14th August. Sixth record.

Olivaceous Warbler One, 24th September. First Scottish record.

Arctic Warbler One, 30th-31st August. Second record.

Yellow-browed Warbler One, 3rd November. Latest autumn record.

***Tawny Pipit** One, 3rd November. Third record.

Great Grey Shrike One, 10th-13th April. Third and earliest spring record. One, 24th-27th September. Earliest autumn record.

Goldfinch Six, 4th May. Largest number in one day.

Breeding populations

As in 1966, the largest of the breeding populations (the Herring Gulls) received the most attention, from the Durham University team (Jasper Parsons and assistants) who were on the island from mid April to mid August continuing large-scale ringing and research on egg-laying, chick survival and post-fledging mortality in eight demarcated areas of the gull colony. From the 1967 studies, the size of the Herring Gull population was estimated at 11,000 pairs—a considerable increase on previous estimates. Though included in the study and ringing programme, Lesser Black-backed Gull numbers were not estimated. Great Black-

*Subject to confirmation by the Rarities Committee

backed Gulls bred for the sixth successive year. Three pairs bred, but no young reached the flying stage. As in 1966 a pair (one a ringed bird) bred on the original site near the South Horn. Two chicks hatched but disappeared a week later. A second pair nested nearby, but their two eggs were gone three weeks later. A pair on the North Ness failed to hatch one egg. In June the Eider Duck population received some attention from Ian Marshall, who has been working on this species. His count of 58 nests included 8 that had been predated. The remainder contained a total of 171 eggs, but, as in previous years, probably only a small percentage of these hatched and fledged successfully amongst the dense gull colonies. No estimate was made of the Kittiwake or auk populations, though observers agreed that the Puffin colony continues to increase, judging by the numbers of birds present around the island and the spread of nest holes west of Holyman's Road, and on Rona, where at least 30 pairs bred. Two or three pairs of Razorbills nested on ledges at East Tarbet for the first time. The colony of Fulmars had a record year, rearing at least 25 chicks. Several pairs used new sites, near the South Horn, and on the Burrian rocks. Oystercatcher numbers increased, over 20 pairs breeding, but fledging success was as low as ever, probably about four broods.

At least two broods each of Blackbirds, Swallows and Dunnocks fledged, and one brood of Pied Wagtails.

Ringing and recoveries

8559 birds of 69 species were ringed—2000 more than the record total of 1966. The total includes a record number of gulls ringed mainly by Durham University—5410 Herring Gulls and 625 Lesser Black-backed Gulls. Other record totals were Shag (630), Redshank (30), Purple Sandpiper (5), Collared Dove (2), Swallow (12), Wren (57), Redpoll (7) and Gannet (2). High totals were Long-eared Owl (5), Yellow-browed Warbler (5), Red-breasted Flycatcher (6), Dunnock (62) and Curlew (3). New birds ringed were Spotted Crake, Arctic Warbler and Olivaceous Warbler. A Blue Tit and a Common Tern were the first to be ringed for more than a decade. Low totals were Chaffinch (19) and Brambling (5); no Siskins or Linnets were ringed.

The total of 156 recoveries includes 105 Herring Gulls and 12 Lesser Black-backed Gulls. There were fewer Shag recoveries than usual—only 18. Nearly 8% of ringed gull pulli were recovered before leaving the island. The remaining recoveries showed the usual southerly dispersal pattern—many around the Firth of Forth, only one north of Dundee, many over 100 miles to south and west, four from Holland and one

from France. The Great Black-backed Gull recovery was from the first brood to be reared on the island. This and the other foreign recoveries or controls are listed below:

		Ringed	Recovered	
Great Black-backed Gull	Pull	4. 8.62	Zeebrugge, Belgium	19. 8.67
Lesser Black-backed Gull	Pull	26. 7.66	San Fernando, Cadiz, Spain	20. 8.67
Lesser Black-backed Gull	Pull	1 .7.67	Ovar, Beira Litoral, Portugal	11. 9.67
Lesser Black-backed Gull	Pull	1. 7.67	Mira, Beira Litoral, Portugal	— . 9.67
Lesser Black-backed Gull	Pull	1. 7.67	Peniche, Estremadura, Portugal	4.11.67
Lesser Black-backed Gull	Pull	2. 7.67	Rio Barbate, Cadiz, Spain	16.11.67
Herring Gull	Pull	19. 6.66	Hoogeberg, Texel, Holland	7. 4.67
Herring Gull	Pull	9. 7.66	Broekpolder, Vlaardingen, Holland	15. 4.67
Herring Gull	Pull	6. 7.67	Breskens, Zeeland, Holland	7.11.67
Herring Gull	Pull	4. 7.67	Groningen, Holland	16.11.67
Herring Gull	Pull	8. 7.66	off Baie de Somme, France	16. 7.67
Song Thrush	Ad	23. 3.64	St Julian-en-Born, Landes, France	6.11.67
Blackbird	1st S♂	9. 4.62	Oppland, Jossund, N. Trondelag, Norway	1.11.67
Blackbird	1st W♂	31.10.63	Nol, Starrkär, Alvsborg, Sweden	1.11.67
Blackbird	FG♂	13.10.66	Skanevik, Nordaland, Norway	23 .7.67
Blackbird	1st W♀	23.11.66	Brasted, Arendal, Norway	26. 3.67
Garden Warbler	Ad	3. 9.63	Heligoland, Germany	1. 6.66
Chaffinch	1st W♂	1.10.65	Urangsvag, Bremnes, Hordaland, Norway	14. 5.67

Other observations

No changes were observed in the population of grey seals and no pups were born. Rabbit numbers continued to increase during the third season free from myxomatosis.

The lichen survey of the island carried out in 1965 by Messrs B. W. Ferry and J. W. Sheard has been published in *The Transactions of the Botanical Society of Edinburgh* (1967) Vol. 40, Part III.

The Committee wishes to thank firstly the Principal Keeper and his staff for all the help given to the Observatory during the season, and secondly the skippers of the Breadwinner who took on the job of Observatory boatmen in June 1967.

Review of ornithological changes in Scotland in 1966

DOUGAL G. ANDREW

Introduction

This is the fourteenth report of the Scottish Bird Records Committee, and it is concerned with records *published* during 1966. The periodicals searched, with the abbreviations used in this report, are as follows:

SB	<i>Scottish Birds</i> , Vol. 4: 1-336
BB	<i>British Birds</i> , Vol. 59
BS	<i>Bird Study</i> , Vol. 13
FIBOR	<i>Fair Isle Bird Observatory Report</i> , 1965
FIBOB	<i>Fair Isle Bird Observatory Bulletin</i> , Vol. 5: 155-226
	<i>Birds</i> , Vol. 1: 1-123
	<i>Ibis</i> , Vol. 108
Bull BOC	<i>Bulletin of the British Ornithologists' Club</i> , Vol. 86
	<i>Seventeenth Annual Report of the Wildfowl Trust</i> , 1964-65
ENHS	<i>Edinburgh Natural History Society News-Letter</i> , 1966
NSBR	<i>North Solway Bird Report</i> , No. 1—1965
	<i>The Seabird Group—Seabird Bulletin</i> , Nos. 1 & 2

There have been no changes in the composition of the Committee since the publication of our last report (SB 4: 286).

Birds new to Scotland

GREY-CHEEKED THRUSH *Catharus m. minimus*. The Morayshire record (see under "Birds new to areas and counties" below) provides the first definite identification of this race for Britain.

[BLUE ROCK THRUSH *Monticola solitarius*. One, North Ronaldsay, Orkney, 29th August-6th September 1966 (BB 59: 352; SB 4: 451); there are circumstances which suggest that this bird was an escape from captivity.]

PALLAS'S WARBLER *Phylloscopus proregulus*. One, Fair Isle, 11th October 1966 (BB 59: 438; SB 4: 454).

OLIVE-BACKED PIPIT *Anthus hodgsoni*. One trapped, Fair Isle, 17th-19th October 1964 (FIBOR 1965: 28; BB 60: 161). A second bird of the same species was trapped at Fair Isle, 29th-30th September 1965. These are also the first and second British records.

Birds new to areas and counties

RED-THROATED DIVER *Gavia stellata*. One (subsequently found

- dead), Endrick Mouth, 23rd January 1966 (SB 4: 238); first for West Stirling.
- BLACK-NECKED GREBE *Podiceps nigricollis*. One, Horselaw Loch, Yetholm, 19th-20th March 1966 (SB 4: 239); first for Roxburgh.
- GREAT SHEARWATER *Procellaria gravis*. At least six off Girdleness, 22nd September 1965 (SB 4: 222); first for Dee and North Kincardine.
- CORY'S SHEARWATER *Procellaria diomedea*. 88 counted flying past Fair Isle between 18th and 23rd September 1965 (SB 4: 218); first for Shetland faunal area and Fair Isle. The exceptional nature of this movement is illustrated by the fact that there are only four previous Scottish records of this species, all of single birds.
- SOOTY SHEARWATER *Procellaria grisea*. Four off Rudh' Re, 2nd September 1966 (SB 4: 314); first for West Ross.
- FULMAR *Fulmarus glacialis*. One over Clairinch, Loch Lomond, 5th June 1966 (SB 4: 239); first for West Stirling.
- GANNET *Sula bassana*. Counts of up to 1600 off Inverness in February/April 1966 (SB 4: 239); first published occurrence for East Inverness, though in fact the species is regular off the coast between Nairn and Longman Point (J. MacGeoch and Dr Maeve Rusk); this also provides the first published occurrence for Nairn.
- BLUE-WINGED TEAL *Anas discors*. Adult drake, North Ronaldsay, 10th November 1966 (BB 59: 438; SB 4: 503); first for Orkney.
- SCAUP *Aythya marila*. Female, Gartmorn Dam, 30th October 1965 (SB 4: 107); first published record for Clackmannan, though in fact there are unpublished records of odd birds on the Clackmannan shore of the Forth in winter, going back to 29th January 1922 (T. Paterson).
- SMEW *Mergus albellus*. Drake, Loch Eriboll, 11th June 1966 (SB 4: 242); first for North Coast and North Sutherland.
- GREENLAND WHITE-FRONTED GOOSE *Anser albifrons flavirostris*. Two adults, Tibbermore, 18th December 1965 (SB 4: 108); first record of this race for North Perth.
- BARNACLE GOOSE *Branta leucopsis*. One, Dornoch, 30th October 1965 (SB 4: 109); first for South East Sutherland.
- [RED-BREASTED GOOSE *Branta ruficollis*. Five near Greenlaw, Berwickshire, 21st March 1966 (SB 4: 323), were probably escapes from captivity.]
- BLACK KITE *Milvus migrans*. One, Harray, 18th-19th May 1966, and what was probably the same bird near Sumburgh Airport, 27th May-2nd June (SB 4: 295); first for Orkney and Shetland faunal areas respectively. There is only one pre-

vious Scottish record.

HEN HARRIER *Circus cyaneus*. One seen in the Glenbervie area several times in early January 1966 (SB 4: 243); first published occurrence for North Kincardine, although in fact the species is regularly seen in this division, both in winter and summer, and there is an unconfirmed report of a nest having been destroyed by a keeper (per Dr D. Jenkins).

LITTLE RINGED PLOVER *Charadrius dubius*. First-year bird trapped, Fair Isle, 4th-7th September 1965 (SB 4: 224); first for Shetland faunal area and Fair Isle. One, Whalsay, 17th-19th September 1965 (SB 4: 225); first for Shetland other than Fair Isle. One, Aberlady, 12th October 1965 (SB 4: 225); first for Forth and East Lothian. An earlier record of one at Aberlady on 1st July 1950 (*Edinburgh Bird Bulletin* 1: 7) was later withdrawn (*The Birds of Aberlady Bay Nature Reserve*, p. 13).

KENTISH PLOVER *Charadrius alexandrinus*. One, Elie Bay, 21st April 1966 (SB 4: 226); first for Forth and South Fife. Third Scottish record.

WOOD SANDPIPER *Tringa glareola*. In the North Perthshire division of Tay a single bird was display-fighting on 11th June 1966; in the first week of July two birds were behaving anxiously in the same area and breeding was suspected (SB 4: 228); first occurrence for North Perth.

TEMMINCK'S STINT *Calidris temminckii*. First-winter male seen and subsequently shot, Islesteps, near Dumfries, from about 10th to 16th November 1965 (SB 4: 111, 230); first for Solway and Kirkcudbright.

CURLEW SANDPIPER *Calidris testacea*. One, Gruinard Bay, 18th September 1966 (SB 4: 318); first for North West Highlands and West Ross.

STONE CURLEW *Burhinus oedicnemus*. One near Abington, 21st April 1966 (SB 4: 296); first for Lanark.

PRATINCOLE *Glareola pratincola*. One, South Ronaldsay, 6th October 1963 (SB 4: 90); first for Orkney.

CREAM-COLOURED CURSER *Cursorius cursor*. Three, near Cumbernauld, 10th October 1949 (*Glasgow Bird Bulletin* 2: 31; SB 5: 28); this record was not accepted in an earlier Report (*Scottish Naturalist* 1955: 102) but fuller details have now been made available to us and we agree with Dr David Bannerman (*Birds of the British Isles* XI: 2) in considering the record to be valid. We accordingly accept it as the second Scottish record, and it is also the second for Lanarkshire. One, Aberlady 9th-21st October 1965 (SB 4: 230); this is the third Scottish record and the first for Forth and East Lothian.

GLAUCOUS GULL *Larus hyperboreus*. One seen on the Beauly

- Firth (at Bunchrew), 30th December 1965 (*SB* 4: 112); first published record for East Inverness, though the observer (R. H. Dennis) informs us that he has several earlier records for this area, the first being of a first-winter bird at Thornbush Quay, Inverness, on 1st April 1963.
- WHITE-WINGED BLACK TERN *Chlidonias leucopterus*. One, Ancum Loch, North Ronaldsay, 11th-13th June 1966 (*Birds* 1: 121; *SB* 4: 373); this is the second Scottish record and the first for Orkney.
- GULL-BILLED TERN *Gelochelidon nilotica*. One, Dalmeny, 3rd September 1966 (*BB* 59: 440; *SB* 4: 448); this is the third Scottish record and the first for West Lothian.
- COLLARED DOVE *Streptopelia decaocto*. Two, Milnathort, 10th May 1966 (*SB* 4: 309); first for Kinross. One, Lamlash, 13th September 1966 (*SB* 4: 309); first for Arran. Two, Little Cumbrae, early in April 1966 (*SB* 4: 309); first for Bute. One, St Kilda, 29th April 1965 (*SB* 4: 309); first for St Kilda.
- BEE-EATER *Merops apiaster*. Three, Binscarth Plantations, about 31st May-5th June 1966 (*SB* 4: 310); first for Orkney. One, Fair Isle, 13th June 1966 (*FIBOB* 5: 194); first for Fair Isle.
- GREEN WOODPECKER *Picus viridis*. Adult which had been dead for about two months found near Ballater, 15th June 1966 (*SB* 4: 247); first for Dee and Aberdeen. In an earlier Report we noted the first record for Clackmannan as taking place on 16th April 1965 (*SB* 3: 373; 4: 290); it now transpires that birds have been present in this division since 1963, and that 5-6 pairs were established there in 1965, when breeding was proved for the first time (*SB* 4: 95).
- SHORE LARK *Eremophila alpestris*. Male seen and at least three more heard during an enormous weather movement of Skylarks, Powfoot, 19th February 1966 (*SB* 4: 247); first for Solway and Dumfries.
- NORTHERN TREECREEPER *Certhia f. familiaris*. One, Isle of May, 12th September 1965 (*SB* 4: 74, 78); first definite record of this race for Forth and Isle of May.
- [WHITE'S THRUSH *Turdus dauma*. One, North Ronaldsay, Orkney, 1st October 1965 (*BB* 59: 88); this record has not been accepted (*BB* 59: 303).]
- GREY-CHEEKED THRUSH *Catharus minimus*. One (died during night), St Kilda, 29th October 1965 (*SB* 4: 310); first for Outer Hebrides and St Kilda. First-winter male found dying, Lossiemouth, 26th November 1965 (*BB* 59: 88; 60: 55); first for Moray Basin and Moray. The first of these probably and the second certainly belonged to the typical race. This

species has been recorded twice before in Scotland.

BLACK REDSTART *Phoenicurus ochruros*. Female, Balgay Hill, Dundee, 22nd May 1966 (SB 4: 249); first for Angus.

BLUETHROAT *Cyanosylvia svecica*. One near Thurso, 20th October 1965 (SB 4: 114); first for North Coast and Caithness. One of White-spotted race *C. s. cyanecula* found dead near North Berwick, 2nd October 1965 (SB 4: 114); first record of this race for East Lothian.

REED/MARSH WARBLER *Acrocephalus scirpaceus/palustris*. One, Barns Ness, 30th August-1st September 1966 (SB 4: 322); first record of either species for East Lothian.

SUBALPINE WARBLER *Sylvia cantillans*. Male, Out Skerries, 10th-11th May 1966 (*Birds* 1: 97; SB 4: 469); first for Shetland other than Fair Isle.

PALLAS'S WARBLER *Phylloscopus proregulus*. See under "Birds new to Scotland" above; first for Shetland faunal area and Fair Isle.

OLIVE-BACKED PIPIT *Anthus hodgsoni*. See under "Birds new to Scotland" above; first for Shetland faunal area and Fair Isle.

SCANDINAVIAN ROCK PIPIT *Anthus spinoletta littoralis*. Single birds seen at St Andrews, 14th March 1965, and at Isle of May, 27th May 1965 (SB 4: 100); first identification of this race for Forth, North Fife and Isle of May.

[LESSER GREY SHRIKE *Lanius minor*. One, Barns Ness, East Lothian, 14th October 1966 (BB 59: 440); this record has not been accepted (BB 60: 338).]

WOODCHAT SHRIKE *Lanius senator*. Female trapped, Barns Ness, 4th-15th September 1965 (SB 4: 102); first for East Lothian.

[CONTINENTAL CROSSBILL *Loxia c. curvirostra*. During the 1966 invasion flocks of continental birds, distinguished from the local birds by their call, were noted on Speyside from 5th July and eight were at Loch Broom on 21st August (SB 4: 321); we feel that more positive evidence of racial identification is required before accepting these as the first definite identifications of this race for East Inverness and West Ross respectively.]

[WHITE-THROATED SPARROW *Zonotrichia albicollis*. One trapped, Fair Isle, 13th May 1966 (FIBOB 5: 193); this would be the first for Shetland faunal area and Fair Isle, but the possibility of escape cannot be excluded—see BB 60: 332.]

LAPLAND BUNTING *Calcarius lapponicus*. Two, mouth of River North Esk, 22nd September 1966 (SB 4: 322); these birds were seen on both sides of the river and provide the first record for South Kincardine.

First breeding records for areas and counties

[LEACH'S PETREL *Oceanodroma leucorhoa*. The statement that this species has recently been found nesting in Shetland (James Fisher, *The Shell Bird Book*, 1966, p. 39) is not supported by any evidence known to the Committee.]

FULMAR *Fulmarus glacialis*. A colony of under ten pairs breeding at Muncraig in 1957 (*BS* 13: 57); this is the first published report of breeding in Kirkcudbright, but the first proven breeding was in fact in 1952 when an egg was seen at Port o' Warren (R. T. Smith and W. Austin per A. D. Watson).

EIDER *Somateria mollissima*. Duck with young, Sandgreen, near Gatehouse-of-Fleet, 8th June 1966 (*SB* 4: 315); first breeding for Kirkcudbright since 1908.

CANADA GOOSE *Branta canadensis*. Has bred in Wigtownshire every year since first introduction in 1963 (*SB* 4: 242); first breeding for Wigtown. A pair reported as nesting at Morton Lochs, North Fife, on 23rd April 1966 (*SB* 4: 242) were not in fact pure Canadas but descendants of a Barnacle x Canada cross-breeding in captivity nearby. This pair had bred at Morton Lochs in previous years (*SB* 4: 325).

BUZZARD *Buteo buteo*. "In Wigtownshire, where it is considered a very local breeder, a nest of eggs was robbed by a farmer" in 1965 (*NSBR* 1: 4); first published report of breeding for Wigtown. "A number of pairs bred successfully in wooded glens in Dumfriesshire where no evidence of decline" (*NSBR* 1: 4); this is the first published report of recent breeding for Dumfries, but in fact the species now breeds widely throughout the county (about twelve pairs in one area in 1964), where the current breeding history goes back to well before 1955 (A. D. Watson).

HERRING GULL *Larus argentatus*. Pair bred on a chimney stack in Church Street, Inverness, 1965 (*SB* 4: 116); first breeding for East Inverness. Pair with nest at Loch Broom, near Ballinluig, 7th June 1966 (*SB* 4: 245); first breeding for North Perth apart from the old record of a clutch of eggs taken in 1884 at Loch Dirdonnie (not Loch Rannoch as has been stated: Loch Dirdonnie cannot be identified on contemporary or modern maps but it seems to have been on Rannoch Lodge estate—Miss V. M. Thom). Several pairs on Loch Thom (two chicks found) and one pair on Gryffe Reservoir (one chick found), June 1964 (*SB* 4: 253); first published breeding for Renfrew, but in fact a pair nested at Loch Thom as far back as 1947 (Dr J. A. Gibson). About 45 nests on Inchmickery, summer 1966 (*ENHS* 1966: 21); first published breeding for Midlothian, although in fact this colony dates back to 1959, when a nest with three eggs was found on 8th July (G. L. Sandeman).

COMMON GULL *Larus canus*. Nest with two eggs, Fair Isle, June 1966 (FIBOB 5: 202); first breeding for Fair Isle.

COMMON TERN *Sterna hirundo*. Three adults with two chicks, Westwater Reservoir, 31st July 1966 (SB 4: 319); first breeding for Tweed and Peebles.

COLLARED DOVE *Streptopelia decaocto*. Two nests with eggs, Dornoch, summer 1966 (SB 4: 309); first breeding for South East Sutherland. Nest with two eggs, Bearsden, June 1965 (SB 4: 309); first breeding for Dunbarton.

GREEN WOODPECKER *Picus viridis*. Nest with one newly-hatched chick and two eggs, Wood Hill, Alva, 17th June 1965 (SB 4: 96); first breeding for Clackmannan.

GREAT TIT *Parus major*. Adult feeding three fledged young, Stornoway Woods, 27th June 1966 (SB 4: 248); first breeding for Outer Hebrides.

COAL TIT *Parus ater*. In Stornoway Woods (where a pair had been present in summer 1965) a party including young birds was seen on 25th June 1966 (SB 4: 248); first breeding for Outer Hebrides since 1906.

MARSH TIT *Parus palustris*. Adult feeding two newly-fledged young near Yetholm, 20th June 1966 (SB 4: 248); first breeding for Roxburgh.

GARDEN WARBLER *Sylvia borin*. Nest with five eggs near Rowardennan, 5th June 1954 (SB 4: 264); first breeding for West Stirling, where in fact the species now seems to be quite well established.

PIED FLYCATCHER *Muscicapa hypoleuca*. Two nests at Inver-snaid, summer 1966 (SB 4: 251); first breeding for West Stirling.

HEDGE SPARROW *Prunella modularis*. Pair nested at Halligarth, 1965, and laid three eggs which failed to hatch (FIBOB 5: 218); first breeding for Shetland faunal area and Shetland. There is nothing to indicate the race to which these birds belonged, but it may be noted that there is as yet no definite identification of the British race *occidentalis* in Shetland other than Fair Isle. All specimens critically examined have been referable to the continental race *modularis*.

Records carried forward

The following records have still to be carried forward for further consideration:

BAIKAL TEAL *Anas formosa*. Fair Isle, 30th September 1954 (FIBOB 2: 194); Loch Spynie, Moray, 5th February 1958 (Bull BOC 78: 105).

EASTERN SUBALPINE WARBLER *Sylvia cantillans albistriata*. Fair Isle, 23rd April 1964 (FIBOR 1964: 19).

Black-browed Albatross summering on the Bass Rock

GEORGE WATERSTON

(Plates 1-3)

During the summer of 1967 an adult Black-browed Albatross *Diomedea melanophrys* spent the period from May to August consorting with Gannets on the Bass Rock. It was first spotted in early May by the lightkeepers, but its identity was not established until 18th May when Professor W. H. Thorpe recognised it as an adult Black-browed Albatross. He found it sitting among a group of nesting Gannets and was able to photograph it at a range of ten yards. Later observers found that it would tolerate the presence of about a dozen people down to ranges of eight or ten feet without much sign of uneasiness. Murphy (1936) described this species as being the most fearless of man.

The publication in mid June of some fine close-up photographs of the bird in the *Scottish Daily Express* quickly attracted birdwatchers to the Bass in the hope of seeing this unusual vagrant from the southern oceans. Many however were unlucky, as during the daytime it was often away from the Rock. It was most frequently seen in the evenings, gliding in spectacular fashion among the Gannets and settling among them in their nesting area. It was often surprisingly difficult to pick it out from the swirling throng of airborne Gannets, among which were a few immatures with a good deal of black feathering. It was of course longer in the wing and more bulky than the Gannets, and its characteristic gliding flight, on stiff rigid wings like a giant Fulmar, were useful identification features. A fuller description has been given by Waterston (1968); and Warham, Bourne & Elliott (1966) have considered the problems of identifying the various albatrosses likely to be seen in the North Atlantic.

When it landed among the Gannets, it did so lightly and quite gracefully without any suggestion of a 'belly-flop.' It would stand for a time like a gull and then squat down on its tarsus. It took off by just stretching its wings and legs and lifting into the air on the strong up-currents of wind, and would glide around in steep banking circles to return again to the same spot close to the Gannets.

What surprised us was its inter-relationship with the Gannets, which showed little sign of aggression towards it; they appeared to accept it as one of themselves. Gulls on the other hand resented its intrusion and frequently mobbed it. This affinity with Gannets is a curious one. In the nine-

teenth century a Black-browed Albatross lived in a Gannet colony on Myggenaes Holm in the Faeroes from 1860 until it was shot there in 1894. To the Faeroese it was known as the King of the Gannets. I am indebted to W. A. Crow for drawing my attention to a note in Edwin Way Teale's *North with the Spring* (London, 1954 edition, p. 36) of an albatross, 'the King of the Gannets,' said to have lived 18 years in a Scottish gannetry and ended up in the American Museum of Natural History. With the help of Dr W. R. P. Bourne we have checked this with Dr Dean Amadon of the Museum and, through him, with the author of the book. As the statement was based on notes made at a lecture, it seems clear, as the author agrees, that there has been some confusion with the well known Faeroe saga. There is evidently no such specimen in the American Museum of Natural History.

On 20th July 1966, for one day only, an albatross was seen among nesting Gannets on Vestmannaeyjar off Iceland. From a photo taken by P. Steingrímsson it was identified by Dr J. A. Falla as a Black-browed. This bird did not reappear at Vestmannaeyjar in 1967; so there is a possibility that it may have been the one which turned up in that year at the Bass.

The courtship display of albatrosses is of a highly ritualised nature. It was therefore a surprise to find the lone bird on the Bass indulging in an incomplete form of courtship display directed at a Gannet. Irene Waterston and A. G. S. Bryson were fortunate enough to be on the spot when this took place, and the following is a brief summary of their joint observations.

On a flight over a group of Gannets, the albatross hung in the air above one of them sitting beside a nest. The Gannet raised its head, opened its bill widely and called, but 'not fiercely.' The albatross answered with a deep *gah*, before gliding down to land on a ledge immediately below. A second Gannet came in beside the first, just above the albatross and within wing-reach but facing away. The albatross began to preen, first down one side and then the other, and at the same time fanned its tail widely. Then it bowed forward with neck outstretched, and beak opening and shutting very quickly. Shortly afterwards it repeated the same routine to the completely uninterested Gannet. After a short circling flight it returned to its ledge. It then suddenly tipped forward on its breast, with tail up and fanned, and began to shuffle on its axis very like a Lapwing making a scrape, occasionally poking its breast with its bill as though tucking in an imaginary egg, and paddling a little with its feet. It is surely remarkable that a bird which nests in the southern

hemisphere should indulge in a partial breeding display 'out of season' with Gannets on the Bass Rock.

William Auld and the lightkeepers told me that on calm sunny days it usually went away from the Rock, returning late in the evening. It was known to alight on at least seven different sites, usually facing out into the wind. The lightkeepers are almost certain it roosted each night on the Bass. One of them, Duncan Jordan, caught the bird at 2 a.m. on 19th August in the dark by torchlight. He picked it up without a struggle, tucked it under his arm, and carried it down to the lighthouse station to remove a piece of courlene which had got entangled in one of its feet. In daylight, later in the morning, it struggled and pecked at Jordan when he released it.

Both Fred Marr and William Auld observed that the albatross was able to take off from the surface of the sea with remarkable ease, even on a calm day. R. G. Caldow saw it plunge once head-first into the sea from about 15 feet above the water and momentarily submerge. Bannerman (1959) quotes instances of albatrosses diving when occasion requires.

Twice during the summer it was seen close inshore, once off Tantallon Castle and once off the West Bay at North Berwick. It was also reported as having been seen off the Bell Rock by the lightkeepers there. It remained on or around the Bass Rock all summer and was last seen there on 22nd August. The last sighting of the season was on 28th September when M. J. Everett saw it off Fidra; the Fidra lightkeepers told him that they had watched for the bird during the summer but had only one probable sighting.

The recent upsurge of interest in seawatching from suitable vantage points around the coast of the British Isles has resulted in an increased number of sightings of albatrosses—mainly Black-browed. There are several records from Cape Clear in Co. Cork. In Scotland, apart from the records of the bird in the Forth area in 1967, there are only two records of albatrosses: one in Orcadian waters on 18th July 1894 seen by Harvie-Brown (1895), species unknown; and one, probably a Black-browed, seen by Waterston, Hughes-Onslow and Vicary circling the Sheep Rock at Fair Isle on 14th May 1949 (Williamson 1950).

The occurrence of the Black-browed Albatross on the Bass Rock in 1967 is the first 'natural' land record of this species in the British Isles.

In conclusion I would like to thank the many members of the SOC who kindly sent me notes on their observations; also Dr W. R. P. Bourne and I. J. Ferguson-Lees for valuable assistance in compiling this paper. A more complete account

of the bird at the Bass Rock has appeared in *Brit. Birds* 61: 22-27.

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Short Notes

American Wigeon in Shetland

A pair of ducks similar to Wigeon but differing in the colouration of the head, flanks and upperparts was first seen by M.S. and Lance Tickell and later observed by F.J.W. at Haroldswick, Unst, on 22nd-23rd May 1967. They appeared tired and allowed close approach, as they fed among the gulls at the water's edge in a shingle bay. Although the glossy green band from eye to nape in the male was not present, we concluded that they were American Wigeon from the following field description:

Male. Forehead and front of crown pale greyish-white; rest of head, back and neck grey, mottled darker; dark area round eye; rump grey; breast, flanks and scapulars reddish-mauve, with flanks barred slightly darker; posterior flanks white; under tail-coverts black; wings dark brown with white speculum and axillaries; bill blue-grey.

Female. Forehead pale brown; darker brown area round eye and dark greyish-brown cap; rest of neck brown, speckled darker; upperparts brown with back appearing darker; tail dark brown; flanks light brown; underparts greyish-white; small white patch on closed wing gave impression of two white bars enclosing darker area when wings spread.

This is the third record of this species in Shetland and follows close on that of an undoubted wild bird, ringed in Canada, and shot in the south of Shetland on 7th October 1966 (*Scot. Birds* 4: 445).

MAGNUS SINCLAIR, F. J. WALKER.

Scaup breeding in Orkney

The 1965 breeding record from North Ronaldsay is described in the editorial note (*Scot. Birds* 4: 504) as the first satisfactory breeding record for Orkney, but there are in fact earlier breeding records which have never been published.

These relate to Loch of St Tredwall on Papa Westray during the period 1954-59. The first proof of breeding was in 1954: on 1st July one drake, two ducks and a single duckling were seen by P. J. Conder, Dr Constance Dunbar and James Henderson. In June 1955 Henderson reported that three pairs were still present on the loch and strongly suspected that there was at least one nest. In 1956 Henderson found two nests, each with 7 eggs, and reported that both hatched successfully. In 1957 one pair was again present but no nest was found. Breeding last took place in 1959, when Henderson reported that two pairs nested, of which at least one reared young.

I am indebted to Peter Conder and Edward Balfour for providing the information on which this note is based.

DOUGAL G. ANDREW.

King Eider in Aberdeenshire

On 24th May 1967 I discovered a group of ten male common Eiders feeding and preening on a small mussel bed on the Ythan estuary, Aberdeenshire. With these was a bird resembling a common Eider in general shape and size, but with the following distinctive features:

Head grey-blue with lighter streak running back over crown; large orange shield on upper mandible; black back with two small, but distinct, black sails; sides black except for narrow white line running longitudinally on each side; small white patch on hind flanks; breast white; belly black; legs pale orange.

The bird was clearly a male King Eider in full plumage, an identification confirmed by W. Murray the same evening. A lone female eider was also with the group and appeared to be being defended from the other males by the King Eider; unfortunately its bill structure was not seen clearly enough to decide to which species it belonged.

P. B. HEPPLESTON.

(This record is the first for Aberdeenshire. A King Eider which was present for over a month in March and April 1951 off Aberdeen apparently remained on the south side of the Dee and therefore in North Kincardineshire (*Scot. Nat.* 1951: 133).—ED.)

Buzzards breeding in Aberdeenshire and North Kincardineshire

In Deeside the Buzzard was apparently exterminated as a breeding species during the 1800s, but from 1947 onwards birds began to be seen regularly in the Ballater area (*Scot. Nat.* 1952: 177), and Dr David Jenkins tells me that the

species now breeds regularly in the Dee valley above Bal-later, Aberdeenshire. A pair has also nested every year since 1963 in a small wood at Glassel in North Kincardineshire. Four different nests were built in this wood, all within a radius of 200 yards, during the five years 1963-67, and there is some evidence that at least one young bird was reared successfully in each of these years although I was not able to confirm this personally until 1967, when I saw two old birds escorting a fully fledged young bird on 29th July only 100 yards from the nest. I had first discovered this nest on 10th April, when the bird was apparently already incubating.

DOUGAL G. ANDREW.

Possible nesting of Marsh Harriers in Scotland

Although apparently not rare in southern Scotland in the early 1800s, the Marsh Harrier has never been proved to breed, though a pair may have done so in Fife in 1937 (*Scot. Birds* 2: 142). There were no Scottish records at all between 1903 and 1932, but since then, and especially in the past ten years, it has occurred with increasing frequency and has even summered in Scotland.

On 8th May 1966 a pair of these birds was found on a Scottish marsh, where they were seen frequently until the 18th, but not after that date. On the 21st, however, a Marsh Harrier was seen at another marsh about 40 miles away, and next day there was a pair. Since the dates fit, and the male was in first-summer plumage at both places, it is assumed that there was only one pair. The birds stayed on the second marsh throughout the summer and may have attempted to nest.

Display was said to have occurred near a large *Phragmites* bed at the end of May, and both birds were seen often until 5th June. From then until 8th July the male was seen at least twelve times but the female only twice. Most sightings were near the large reedbed, which was watched for a total of 45 hours between 5th June and 8th July.

No aerial food pass and no carrying of nest material was seen. The female was once seen to land in a spot in the reeds from which she did not reappear before the watcher left four hours later; the male was once seen to hover over this spot and once to land in it with food. His favourite perch was a low bush some 50 yards west of the spot, and he was twice seen to go to roost about 50 yards further west.

By mid July the female was being seen again and both birds were sometimes absent for several hours. In spite of further watching, no food was seen to be brought in, and on 15th July it was decided to search the area. No nest was

found, but there was a small trampled platform in the reeds about 25 yards north of the possible nest site. There were a few Marsh Harrier feathers and some raptor droppings on this platform, and it may have been a cock's nest (see the *Handbook*). It is possible that a nest was missed, since progress was difficult and sometimes dangerous, and visibility among the reeds was only about five feet in places.

Both birds remained until at least 20th September, the male continuing to roost in the same place and defending the area against Herons as late as 1st September. A regular habit of either bird was to hunt low for some time, and then drop into the reeds and thick sedge, out of sight, remaining hidden for long periods. The only kills found that could be attributed to the harriers were two immature Starlings and an unidentified young bird, possibly one of the Rallidae.

When first seen, the two birds were distinguishable only by size, the female being clearly larger. Both were almost uniform chocolate brown, with straw-coloured crowns and shoulder patches. The female had also a small pale patch on the throat. Her plumage did not change very obviously during the season, but by September the male in flight showed prominent silver-grey 'sleeves' on his wings and his tail was the same colour but for two dark brown central feathers; his chest and nape also appeared paler. It was not possible to make more precise observations as all watching was done from about 300 yards away.

The reasons for suspecting an attempt at nesting may be summarised: display was followed by the virtual disappearance of the female for about the normal incubation period; both birds showed interest in a particular spot in suitable breeding habitat, and the male perched and roosted near it and behaved aggressively when other large birds came near; and both birds remained in the area until autumn. There was almost no disturbance by man, and the reeds had not been entered when they were searched on 15th July. If there was a nest there, it was not robbed by man. Other possible causes of failure could have been the immaturity of the male, although first-summer birds have nested in Britain (H. E. Axell, pers. comm.), and the severe floods which occurred in mid June, destroying many duck and wader nests on the marsh.

In spite of frequent visits to the marsh, there were only two sightings in the summer of 1967, both of a female, on 16th May and 13th July. There were no reports from the first marsh.

At the request of the observers this note is published over the editor's name to avoid giving any clue to the locality.

ANDREW T. MACMILLAN.

Little Ringed Plover in Lanarkshire

As I was walking over an expanse of rubble on the Clyde upstream from Hamilton on 1st July 1967, my attention was drawn by the call of a wader which was new to me. It flew over and settled nearby, allowing me to observe it for about 20 minutes.

Although strikingly similar to a Ringed Plover, the bird lacked a wing bar and its slimmer build was obvious when it was on the ground. The bill appeared dark with a little yellow at the base. The call, which was uttered frequently, was quite different from that of the Ringed Plover, being higher pitched and more reedy. I was left in no doubt that I had seen a Little Ringed Plover. On several subsequent visits, including one on the following day, I failed to rediscover the bird.

DONALD STALKER.

(In England the Little Ringed Plover, breeding mainly at gravel pits, continues to spread into the northeast (*Brit. Birds* 60: 110). Scottish occurrences have been reviewed recently, and there is no previous one for Clyde (*Scot. Birds* 4: 226). In the next few years we may expect more Scottish records, and possibly breeding.—ED.)

White-rumped Sandpiper in Caithness

At Brims Ness, Thurso, on 10th September 1966, I came upon an unusual wader, slightly smaller than a Dunlin. It was also seen briefly in flight by Keith Goodchild, who thought it was about the same size as a Dunlin. The bird was feeding in a pool in the rocks; freshwater vegetation was growing in this pool, whereas most of the others were salt. It was watched for about 20 minutes and seemed very reluctant to fly, though its general behaviour was timid. When moving, it appeared more upright than a Dunlin. When disturbed, it gave a call that I noted as *teety teety*. The light was fairly good but dull, and the following description, from which I identified it as a White-rumped Sandpiper, was taken at the time, using 7x50 binoculars and at ranges down to four yards. It was not at all like a Curlew Sandpiper, a species with which the *Field Guide* compares it.

Upperparts pale grey ash brown, streaked indistinctly; crown and sides of head same grey ash brown, with faint but distinct eyestripe; wing coverts, primaries and secondaries same pale grey ash brown, but odd primary coverts dark brown centred, with faded edges; upper breast as upperparts, but flanks and lower breast white-grey; legs dark brown with yellowish tinge; bill straight and black; iris dark. In flight a faint wing-stripe showed; tail coverts and part of tail feathers white, with broad dark band at tip of tail.

DAVID M. STARK.

(This is the third Scottish record of this American wader; the fourth record has already been published in *Scot. Birds* 4: 506.—ED.)

Cream-coloured Coursers in Lanarkshire

In the 1953 *Glasgow and West of Scotland Bird Bulletin* 2: 31, I was reported as having seen three Cream-coloured Coursers in Lanarkshire on 10th October 1949. No description of the birds was published. In the "Review of ornithological changes in Scotland in 1953" (*Scot. Nat.* 1955: 102) the Scottish Bird Records Committee stated: "Before acceptance as the second Scottish record, further corroboration is required of the report."

I saw the three Cream-coloured Coursers at 11 a.m. on 10th October 1949 on some newly ploughed land close to my old home in Luggiebank, north Lanarkshire. My notes, written immediately afterwards, read:

"Stopping at the field gate, I noticed movement on the furrows about 30 feet away. The movement was momentary like a Partridge flattening. There were three creamy-buff patches on the dark furrows. I lifted the puppy and edged nearer."

"The three patches were three birds, crouched flat, throats to earth. I looked at them from ten paces, noting the buff plumage, the black wing feathers, and the white eye-band edged with black. I drew back with the puppy, but the birds that had crouched at my approach took wing when I retreated, and I watched their flight in dismay. Luckily they did not fly far—no more than 40 yards. When they pitched again they did not crouch. They started running about the furrows, in short spurts, feeding."

"I left quietly and kennelled the puppy, and when I returned to the field gate the coursers were still in sight, about the same place. For the better part of half an hour I watched them. They were whisking about, pecking at the soil, behaving like plovers. Periodically they stopped to preen their feathers with their near-black curved beaks. Their legs were long and cream-coloured. On the ground they appeared much smaller than in the air. Their short flights were slow and leisurely, but when they finally left the field they flew high and fast without wavering."

"I saw them once again, later in the day, in flight, after which they appeared to have left the neighbourhood."

I made a sketch of the birds at the time, which I still keep, but I was completely unable to get a half-decent photograph.

DAVID STEPHEN.

(This record was accepted by Bannerman in 1962 (*The Birds of the British Isles* XI: 2) after personal investigation. The Scottish Bird Records Committee has now seen the original notes and sketch and accepted it as the second record for Lanarkshire, Clyde and Scotland. Though spanning almost a century, all three Scottish records fall between 8th and 10th October (see *Scot. Birds* 4: 230-232.—ED.)

**White-winged Black Terns in the Outer Hebrides, Shetland,
Caithness and Aberdeenshire**

At Loch Stiapavat, Lewis, on 7th May 1967 I saw a White-winged Black Tern flying over the narrow strip of water at the end of the machair. Much smaller than a Common Tern, the bird had a black body and white, slightly forked, tail. The wings were white, but with the flight feathers and undersides black. The bird was watched without binoculars for about 15 minutes in bright sunshine.

ALLAN SMITH.

In the late afternoon of 30th June 1967 we saw a White-winged Black Tern in full summer plumage at Burrafirth, Unst. We had good views of it both on the ground and in flight, when it was seen dipping to the surface of the water several times in true marsh tern fashion. We were immediately struck by the white shoulders, white tail and black underwing. The white forewing was very noticeable when it perched on rocks; the rest of the wings were grey with tips darker. At a range of 40 yards we were able to note the red legs, feet and inside to mouth, the black bill and dark eye. The bird was seen again the following morning by Magnus Sinclair and F. J. Walker as it flew along the sands at the south end of Burrafirth. It was last seen on 6th July by E. Fellows.

ROY H. DENNIS, ROBERT J. TULLOCH.

We discovered a White-winged Black Tern feeding in the manner of a Black Tern over the water and reeds at Loch Heilen, Caithness, on 12th July 1967. It seemed annoyed at our approach and half-heartedly mobbed us with shallow dives, uttering a hoarse, double, or extended *kay-ey* note. The flight was more buoyant than that of nearby Arctic Terns, and even at a distance the contrast of the black body and under wing-coverts with the white tail, tail-coverts and upper wing-coverts was very conspicuous. The flight feathers were pale grey above and below. We took a detailed description and this was supplemented by the notes and sketches of R. A. Hume, who found the bird independently the following day.

E. M. SMITH, R. W. J. SMITH.

On 21st June 1967 I saw an unusual tern, similar to a Black Tern but with white on the wings and tail, flying over Meikle Loch of Slains, Aberdeenshire. The weather was poor at the time but the bird remained in the area till 28th June, during which time it was seen by several observers who were able to confirm that it was a White-winged Black Tern. Good views were had of it and such features as the red legs and red inside to the black bill were noted. The primaries were greyish compared with the very white upper wing-coverts. Its flight was swift and erratic, as it spent much of the time hawking for insects.

R. DONALDSON.

(All these records have been accepted by the Rarities Committee on the basis of detailed field notes. The only previous Scottish records are of single birds in the Outer Hebrides on 23rd May 1964 (*Scot. Birds* 3: 258) and Orkney from 11th to 13th June 1966 (4: 373). The present spate of records comes in the wake of a large influx of Black Terns in the north (4: 514), the Lewis bird being seen at the same time as these and the others within the following two and a half months.—ED.)

Green Woodpecker breeding in Perthshire

There have been sporadic records of Green Woodpeckers in North Perthshire since early in the present century, yet as recently as 1960 the species could still only be classed as 'occasional' (H. Boase, *Birds of North and East Perthshire*, see *Scot. Birds* 2: 266). Most of the early reports referred to the Perth-Scone area and to the Carse of Gowrie, and it was not until December 1962 that the first record for South Perthshire was made, at Menteith (*Scot. Birds* 2: 318). In the last five years there has been a big increase in both the number and the scatter of reports, and it has seemed probable that the species was breeding.

In February 1965 A. Chapman saw a pair of Green Woodpeckers at a nest-hole near Glencarse but was unable to obtain definite proof of breeding. In June 1967 students at Faskally Forestry Training School, Pitlochry, located a nest-hole about 45 ft up in an ash tree on the hill above Faskally. Examination of the hole with a torch and a mirror revealed the presence of four nestlings. On 5th July, when I was taken to the site, the last of the young birds flew as the forester approached the hole.

The frequency of reports from the vicinity of Perth, Dunkeld and Pitlochry in the last two or three years suggests that the species is now established in these areas. Elsewhere there have been scattered records, not all of them published,

from Glenfarg, Crieff, Glenalmond, Strathtay, Killiecrankie and Blair Atholl in the east of the county, and from Menteith, Loch Ard, the Trossachs and Glen Lochay in the west.

VALERIE M. THOM.

Hooded Crow making child-like cry

At Toe Head in South Harris on 3rd October 1965, my wife and I were watching a family of Golden Eagles when we were startled to hear what we took to be the cry of a young baby. As we were over a mile from the village of Northton and there was nobody about, we were puzzled by this plaintive calling and started to look for its source. I eventually traced the noise to a small depression in the moor, where I saw two Hooded Crows. The crow making the call was parading round the other, which was perched on a boulder. They were so engrossed in this performance that they allowed approach to within five yards before flying off.

This episode makes me wonder if such a thing gave rise to the Hebridean legends of fairy children crying underground, because unless the crow was actually seen to make the sound it would not be associated with it.

T. M. CAMERON.

Fieldfares breeding in Orkney

On 24th July 1967 two visitors to Orkney, Mr and Mrs Veitch, checking a report from some children, found a pair of Fieldfares nesting by a burn in a little valley. I was able to see the nest that same evening with W. Scharf and to inspect the three young, which were at least a week old. The nest was in the middle of a small elder, about 5 feet up, and completely hidden in the foliage. Rather like a Blackbird's, but with less mud, it was made mostly of dead grasses.

From a man living in a nearby cottage I learned that the Fieldfares had been in the area since at least 22nd June. They were very demonstrative, coming quite close and continuously scolding with harsh *chack* notes, and chattering as they flitted from post to post. They were about the size of Blackbirds, with grey heads and rumps and chestnut-brown backs. The male's bill was all yellow, but the female had some brown on the upper mandible. I am of course very familiar with Fieldfares in winter.

On 1st August the adults were hunting in rough grass and heather and bringing large green caterpillars, thought to be those of the emperor moth, to the young birds, now out of the nest and hidden in the bushes. Three days later they

still remained in thick cover, tended by their parents, but one was flushed and its grey rump plainly seen.

This is the first satisfactory record of the Fieldfare nesting in the British Isles. Considering the number of recent breeding records of the Redwing in Scotland, which is near the southern limit of its range, it is curious that the Fieldfare does not breed here more often, for in Scandinavia and continental Europe it breeds far to the north and to the south of Scotland.

E. BALFOUR.

Redwings breeding in Scotland

The breeding of Redwings in Inverness-shire is briefly mentioned in a recent summary of Scottish records (*Brit. Birds* 59: 501), and further details may be of interest.

On 21st May 1955 a cock Redwing was singing from the top of a spruce at Dunlichity Lodge in Strathnairn, about 10 miles southwest of Inverness. The pale supercilium and splash of orange on the flanks were noticeable. Eventually I found the nest 200 yards away beside a ruined croft, being drawn to the site by the agitated behaviour of the adults. The birds were always very noisy when anyone was near the nest, which was about 6½ feet from the ground between three slender boles of a rowan. It had a rather deep cup, and was made and lined with dead grass. The six blue-green eggs were heavily freckled with auburn spots and rather smaller than Blackbirds'.

I had to be away from 30th May, but my gardener visited the nest every other day. There were six small young on 4th June, and two days later the blue sheaths of their wing feathers were beginning to show; but on the 8th they were dead in the nest. It had been very cold on the night of 6th-7th (33° F), and I suspect that the young birds' death could have been caused by Kestrels that were nesting nearby killing the hen. The cock was heard calling for a day or two and then disappeared.

Another pair of Redwings suffered much the same fate in 1936 at Farr, also in Strathnairn. Fuller details are not now available, but Miss E. P. Leach and the late H. F. Witherby saw the nest while staying with the late Colonel and Mrs Mackenzie of Farr, and when staying with me Miss Leach often referred to this record.

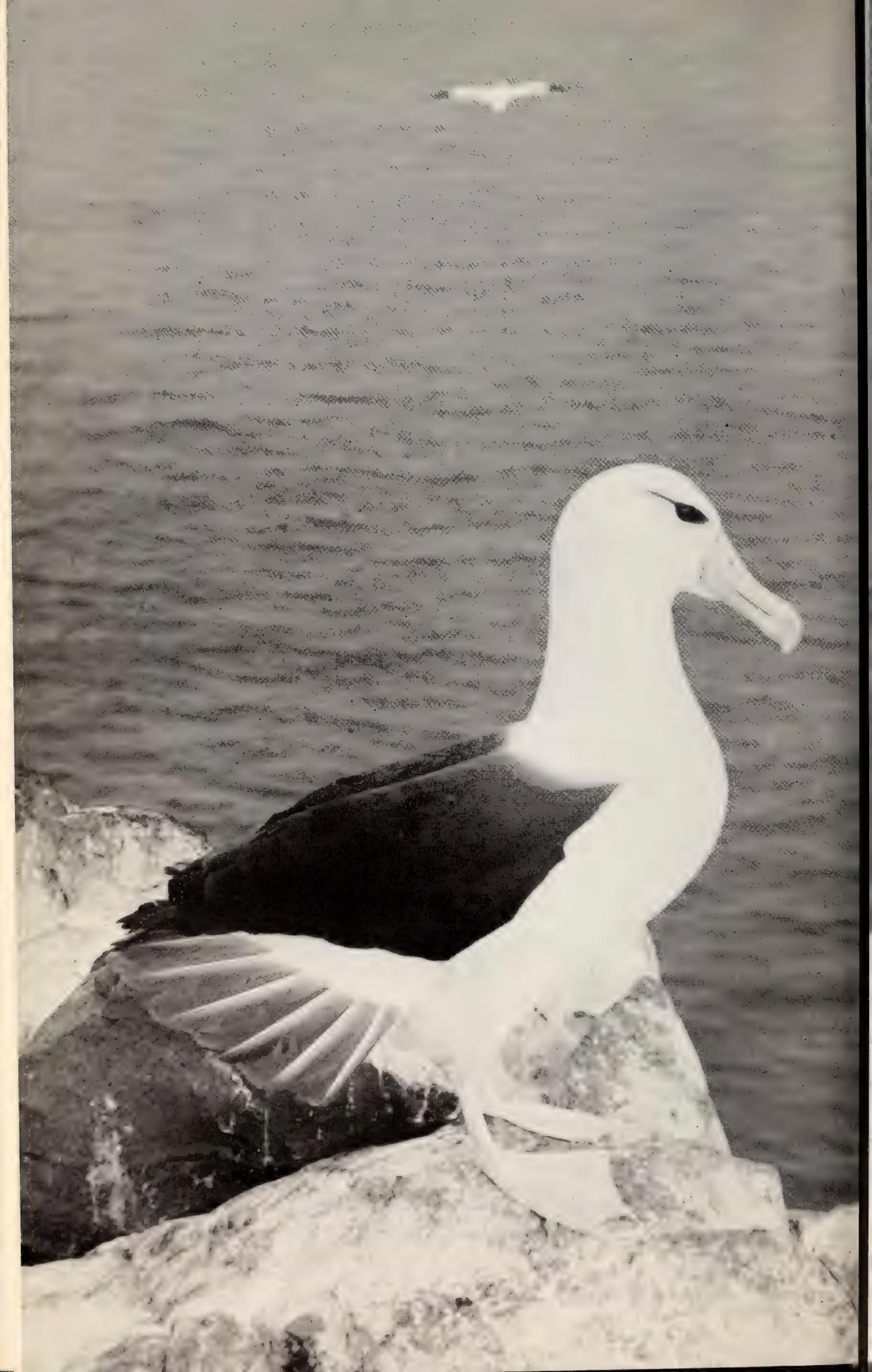
CECILIA KNOWLES.

On 15th June 1967, while walking in extensive wooded grounds at a locality well down the Great Glen, but still within the faunal division of East Inverness-shire, my wife



PLATE 1. Black-browed Albatross in flight, Bass Rock, East Lothian, 11th June 1967, showing the broad white central stripe and black margins, broader at the leading edge, on the underwing (see page 20).

Photograph by W. Kenneth Richmond





PLATES 2 AND 3. Black-browed Albatross, Bass Rock, June 1967. Note the soft outlines and squat, rather ungainly, shape, the short greyish tail fanned out and showing the white shafts, the unexpectedly trivial 'black brow', the shape of the bill, and the pale legs and feet. It will be seen that the long Fulmar-like wings scarcely project beyond the tail, and that they are crossed much flatter than those of the immature (2 or 3 year old) Gannet perched behind.

Photographs by Scottish Daily Express



PLATE 4. Albin Black-headed Gull, Horse Island, Ardrossan, Ayrshire, 25th June 1967. This bird was mated to an ordinary Black-headed Gull, and the single egg in the nest was marked normally. In flight the bird seemed conspicuously whiter than others and the wings appeared broader and rounder at the tips, probably because of the lack of dark markings. As may be seen from the photograph, the usual brown, black and grey markings on head, wings and body were absent; eye, bill and leg colours were normal.

Photograph by Gordon Fraser

and I heard some birds making alarm calls in the bushes. They proved to be a pair of Redwings with at least one fully grown juvenile. The adults were very agitated by our presence and we had good views of their pale eyestripes and red underwings. My wife saw one of them feed the fledgling. As we could not find them next day, the birds were evidently on the move.

J. K. HASLER.

On 1st June 1967 my husband found a pair of Redwings with a nest containing five well grown young birds. It was built in a dead stump in a copse on the banks of a loch in central Wester Ross. We were in the area until 3rd June and saw the birds several times. They were readily identified by their pale eyestripes and chestnut patches under the wings. Whenever we approached the nest they became more and more agitated, flying close to us and calling, and we therefore did not stay for more than a few moments.

K. MONICA SHAW.

On 10th June 1967 in open woodland by a stream in the northeastern part of Southeast Sutherland I saw a Redwing in a birch tree. It did not seem to want to move out of the area, and later I found one or both parents feeding three well grown young (with short tails but fairly well marked eyestripes). They were being given small worms, which the parents found under piles of dead branches, and they were just able to fly short distances.

On 25th and 29th June I flushed a single adult from a clump of birch but could find no nest. I was away during the summer, but on revisiting the area on 2nd September found two Redwings feeding on rowan berries only 150 yards from the original site. They were greyish about the head and I wondered if they could be immatures or moulting adults (the red flanks were quite distinct).

JEAN A. R. GRANT.

On 13th June 1967 I was told that in the past few years a pair of Redwings had been seen in summer at a house in the northern part of the faunal division of Southeast Sutherland. In 1967 they had nested 20 feet up a conifer 25 yards from the front door. Next day I saw the nest and was told that the young had flown a week earlier and had been skulking in the heavy undergrowth of an overgrown vegetable garden. I could not find them but had good views of the two adults and tape-recorded the cock giving what I took to be an alarm call from a regular perch on a post, while the hen clucked in the background. I visited the area again on 12th July with D. Macdonald. A good bit of the nest had

been blown away in a gale, and we did not see the birds.

I gather that the locality is about 11 miles from that mentioned in Mrs Grant's note.

WILLIAM A. SINCLAIR.

On 21st July 1967 we found an adult Redwing with a fully grown young one in the area described above by Mr Sinclair. The birds were not particularly wild, and kept within the bounds of a single walled field, where we watched them for some time. The young bird showed pale flecks over the upperparts and was large enough to fend for itself. It could have flown a mile or so, but it seemed more likely to us that a pair of Redwings had bred in the vicinity.

M. T. BARNES, G. M. S. EASY.

A pair of Redwings reared two broods in a small wood on one of the northern islands of Shetland in 1967. Redwings were present on 6th May, and one was in full song on the 26th. The first nest was about 2½ feet from the ground on a stump at the edge of the trees, and contained four eggs on 10th June. On the 17th there were four smallish young, and a week later these were well feathered, with pronounced pale superciliaries.

The second nest was found on 7th July about 2 feet up in the offshoots of a small sycamore in the middle of the wood. There were three eggs then, and also on the 15th, when we caught one of the young from the first brood. I was unable to visit the area for some time after this, but learned that the young of the second brood fledged and were seen about the area for several days.

Both nests were untidy and rapidly disintegrated, the first while the young were still in it.

F. J. WALKER.

(In addition to the remarkable series of 1967 Scottish breeding records, we have received several other reports of Redwings in the summer: one in full song 5 miles south-west of Wick, Caithness, on 10th May, but not seen on later visits (Mrs J. A. R. Grant); one singing from a high tree in a plantation at Loch Choire Lodge, North Sutherland, on 12th and 13th May (G. Waterston, Mrs M. I. Waterston); and two in birchwood at Ben Hope, North Sutherland, on 1st August (D. C. Hulme). One in song at Gairloch, Wester Ross, from 25th May to 15th June has already been noted (*Scot. Birds* 4: 517).

Previous breeding records, to the end of 1966, were summarised recently (*Brit. Birds* 59: 500; 60: 398); and fuller details of two of these have been given above. Even allow-

ing for the increased number of birdwatchers in the north of Scotland in spring, the number of Redwings remaining to breed or summer in 1967 seems exceptional, and amply supports the view that the species at present breeds in Scotland every year. There are vast areas to search, and apart from a few obvious places the breeding pairs are not easily found unless one hears and recognises the song.

It may be doubted whether there would be any great risk in giving more precise localities for the 1967 nests but in deference to the wishes of some of the observers and to avoid any risk we have left them vague. The actual localities have been notified to the RSPB for their confidential files and are entered on the editor's own copy of *Scottish Birds* and on the editorial reference copy.—Ed.)

Blackbird and Song Thrush laying in the same nest

In 1967 I discovered a pair of Blackbirds building a nest outside my dining room window at Hazlehead, Aberdeen, on the same site as a pair of Song Thrushes had nested the previous year. While the hen Blackbird was laying, I noticed that a pair of Song Thrushes was trying to gain access to the hedge, and I subsequently found the nest, which was not lined with mud, to contain four Song Thrush and four Blackbird eggs. A struggle lasting eleven days followed, the cock Blackbird being most determined in his efforts to defend the nest. The Song Thrushes, however, succeeded in gaining complete control of the nest for the last five or so days of incubation. Unfortunately one of the thrushes disappeared at about the time that the first egg hatched, and the other was unable to cope with such a large brood on its own, so that the chicks died one by one.

GORDON M. LEES.

(A similar instance has been described (*Brit. Birds* 53: 89), in which a mixed clutch of six eggs was incubated entirely by a hen Blackbird; and the young, four Blackbirds and two Song Thrushes, were reared successfully by a single Song Thrush.—Ed.)

Abnormally plumaged Willow Warbler

While walking through a wood on the outskirts of Dornoch, Sutherland, on 5th September 1967, my attention was suddenly attracted to a small, unusually pale bird which flitted out from a clump of birches in pursuit of insects. This fleeting glimpse of the bird gave me the impression that it was an escaped canary. On closer observation I found that it was a Willow Warbler in most abnormal plumage. It was a strikingly beautiful bird, feathered a bright yellow all

over, the wings and mantle being slightly darker and having a faint greenish hue. The bill and legs were exceptionally bright, even showing a tinge of orange, but the eyes were dark. In flight the tips of both primaries and secondaries looked so pale as to appear almost transparent.

The fact that two recent notes (*Scot. Birds* 4: 97) on similar aberrations also refer to this species suggests that it is particularly prone to such abnormalities.

D. MACDONALD.

C u r r e n t N o t e s

Compiled by A. T. MACMILLAN

(Key to initials of observers : W. Alexander (WAl), D. R. Anderson, J. A. Anderson, D. G. Andrew, W. Austin (WAu), R. S. Baillie, I. V. Balfour-Paul, Miss P. G. T. Baxter, Miss E. P. Beattie, J. A. Begg, Miss F. M. Black, H. Boase, T. Boyd, W. Brackenridge (WBk), D. Brooke-Webb, W. Brotherston (WBr), Miss E. Brown, R. Brown, Miss C. F. H. Bruce, G. H. C. Byford, T. M. Cameron, R. A. Cheke, Sir C. G. Connell, G. M. Crichton, Miss M. H. E. Cuninghame, W. A. J. Cunningham, R. H. Dennis, E. Dicerbo, R. C. Dickson, Miss M. Donald, H. E. M. Dott, J. Dunbar, Capt. J. B. Dunbar of Pitgaveny, Dr G. M. Dunnet, J. Edelsten, N. Elkins, Sir R. Erskine-Hill, M. J. Everett, Miss K. Forrest, I. Gibson, D. C. Gladwin, S. Gordon, W. D. Grant, Mrs R. Hamilton (RHa), C. G. Headlam, P. B. Heppleston, R. Hodgkinson (RHo), J. A. D. Hope, C. Hughson, E. N. Hunter, E. T. Idle, Miss A. Jackson, J. E. Jackson, R. A. Jeffrey, Dr D. Jenkins, P. Johnson, T. H. Jorgensen, G. Kerr, Miss H. Knight, A. J. Knox, R. Lambie, D. J. Law, A. F. Leitch, D. Lloyd, J. A. Love, W. G. Luton, J. McCraw (JMc), A. Macdonald, D. Macdonald, M. A. Macdonald, K. S. Macgregor, R. D. Macgregor, E. A. Machell, I. M. MacLean, A. V. MacLeod, A. T. Macmillan, Miss M. Macmillan (MMc), M. Marquiss (MMq), W. Matheson (WMa), J. Maxwell (JMx), Prof. M. F. M. Meiklejohn, J. K. R. Melrose, B. G. Miller, M. G. Miller, J. Mitchell (JMi), Mrs S. Morgan, W. Moss (WMo), H. Murdoch, W. Murray (WMu), C. K. Mylne, Dr I. Newton, C. Ogston, D. W. Oliver, G. Oliver, J. Osborn, N. Picozzi, R. K. Pollock, A. Pringle, A. D. K. Ramsay, C. P. Rawcliffe, G. W. Reid, W. K. Richmond, A. Robb, E. L. Roberts, Dr E. Rowling, S. Saxby, J. A. Scott, R. Shaw, D. C. Shenton, A. Sillitto, J. H. Simpson (JHSp), M. Sinclair, D. Skilling, P. J. B. Slater, Mrs E. Slee, J. Slee, Mrs E. M. Smith, H. D. Smith, R. T. Smith, R. W. J. Smith, W. Stein, A. I. Stewart, R. W. Summers, J. H. Swan (JHSw), I. Taylor, R. G. Thin, Miss V. M. Thom, D. B. Thomson, E. Thomson, D. A. Tindal, A. L. F. K. Tod, R. B. Tozer, R. J. Tulloch, Miss M. van Oostveen, F. J. Walker, K. G. Walker, R. Walker, Dr A. Watson, J. Watt, G. T. White, D. F. Whyte, Mrs J. A. Whyte, W. H. Wild, Prof. V. C. Wynne-Edwards, L. Young, J. G. Young, B. Zonfrillo.

Unless otherwise stated all dates refer to 1967.)

Distribution

Records from before 1st August 1967 are not included in this section except where related to more recent ones. These

are the last Current Notes in the present form. From the next issue, as already announced, this section will be quite short, and much of the material will appear instead in the annual Scottish Bird Report.

Ten **Great Northern Divers** were counted at Rattray, Aberdeenshire, on 5th November (MMQ). The same day, 239 **Red-throated Divers** were off the $3\frac{1}{2}$ miles of coast between Collie-ton and the Ythan, Aberdeenshire (ADKR); the previous day there had been a compact group of 15 close inshore in Gullane Bay, East Lothian (MFMM). Off one mile of coast at the Sands of Forvie, Aberdeenshire, the highest total between the end of September and mid November was 178 on 22nd October (HEMD), and there were 55 off the mouth of the Ythan on 11th November (ADKR, IT).

Further **Red-necked Grebes** (see 4: 563), all single birds, were at Norwick, Unst, on 1st October; Baltasound, Unst, on 21st October (FJW); Fair Isle from 5th to 13th October (RHD); the Ythan on 5th November (ADKR); and Aberlady on 4th November (MJE). A **Slavonian Grebe** was seen on Glencorse Reservoir, Midlothian, on 24th December (ADKR). A **Black-necked Grebe** was at Duddingston Loch, Edinburgh, on 24th December (DGA); on the sea, there were two off Tentsmuir, Fife, on 5th November (JD, RWS, DBT), and two at Loch Ryan, Wigtonshire, on the 18th (RCD).

Two exhausted **Leach's Petrels** were found in Stornoway harbour on 19th October at a time when there were many in the area (WAJC). A **Storm Petrel** at Longniddry, East Lothian, on 5th December was struck by a car as it flew into the headlamp beam (JMc).

At the Sands of Forvie a **Great Shearwater** was flying north, close inshore, in heavy gales, on 4th October (CO). A very late **Sooty Shearwater** (cf. *Ibis* 105: 347) was seen twice on a boat trip from Arbroath, Angus, round the Bell Rock on 2nd December (JD, NE, DCG, DWO, RWS).

A count of at least 250 **Cormorants** in the area of Inchcolm (on Carr Craig, the Haystack and Oxcars) on 10th September may in fact be quite usual, but illustrates the abundance of the species well up the Firth of Forth (DGA). Inland records of **Shags** are of two sitting on posts in the middle of the Lake of Menteith, Perthshire, on 8th October (TMC); one at Bardowie Loch (near Milngavie), Stirlingshire, on the 19th (AJ); and one at Rowbank Reservoir, Renfrewshire, on 10th December (FHB, MD).

There were over 30 **Hérons** at Newburgh, Aberdeenshire, on 16th September (BGM). One found dead at Baltasound, Unst, on 19th November is reported to have been ringed as a nestling on 2nd July in Norway, at Stofvik, 60°58'N, 7°50'E (JAS per FJW).

A **Garganey** was at Kilconquhar Loch, Fife, on 1st October (DWO). A female **Gadwall** was on Drumpellier Loch, Coatbridge, on 29th October (WS); a drake at Seafield, Leith, on 4th November, had almost certainly come down to the sea from Dunsappie (DGA). A high count of **Wigeon** for the area was of 1000 on Loch Milton, Kirkcudbrightshire, on 20th November (DS, JGY). Big numbers of **Pintail** are found in Kirkcudbrightshire; on 19th November there were over 2200 at Carsethorn and Drumburn and high numbers continued into 1968 (JGY). A pair was in Little Loch Shieldaig, Wester Ross, in December with Mallard (but see 4: 510) (ENH). **Shoveler** were unusually numerous on Stormont Loch, Perthshire, this autumn, with 200 counted on 13th October (HB), and 245 on 15th, compared with a maximum of 130 in the past ten years (VMT).

The unusualness of a record of 15-20 **Scaup** at Gullane Point on 27th December, is in contrast to the large numbers which winter further up the Forth (PJ, AFL). Inland there was a drake at Kilconquhar the same day (PGTB). The presumed hybrid **Tufted x Pochard** (4: 553) was back again at Duddingston, if it was the same bird, on 17th December (JAA), the day on which numbers of **Pochard**, after building up all week, reached the fantastic total of 8000 (DGA, DRA). At Strathbeg, Aberdeenshire, the peak count of 900 was on 26th November (NE). Although large numbers of **Goldeneye** are recorded off Edinburgh in winter, a total of seven on Duddingston Loch on 24th October was another record, being two more than previously seen at one time there (DRA).

On 5th November 240 **Long-tailed Ducks** were counted at Rattray, Aberdeenshire (MMq); the same day, about 200 were counted on a seawatch from Tentsmuir, which seems more than recorded in recent years (see 2: 134) (JD, RWS, DBT). Six off Montrose on 17th December were the observer's first for Angus (GMC). The following inland records have been received:

Kinardochoy Loch, Perth—♀ on 25 Nov (VMT).

Kilconquhar Loch, Fife—♀ on 15 Oct (DWO).

Woodend Loch, Coatbridge, Lanark—1 on 12th and 18 Nov (RB, WS).

Castle Semple Loch, Renfrew—1 on 12 Nov (WHW) and 9 Dec (RL, AIS).

Livingstone, Loch Ken, Kirkcudbright—♀ on 3rd and 5 Dec (JKRM, JGY).

A drake **Ruddy Duck**, presumably an escape, and probably the same bird recorded in September (4: 566), was on Kilconquhar Loch from 15th October until the end of the month (DWO).

The flock of **Goosander** on the Beaully Firth totalled 370 on 23rd December (RHD). Two female **Red-breasted Mergansers**

at Portmore on 1st October seem to be the first published record for Peeblesshire, though the area is not in fact in Tweed, the faunal area which embraces Peeblesshire (DGA). Two 'redhead' **Smews** were at Rowbank Reservoir, Renfrewshire, on 26th November and 31st December (IG, GTW), and there were single birds on Loch Ken, Kirkcudbrightshire, on 16th December (RDM, RBT), and Glencorse Reservoir, Midlothian, on 22nd-24th (PJ, AFL, ADKR, DW), and there was a drake nearby, at Loganlea, on 24th (ADKR). There was a **Shelduck** at Barr Loch on 17th and 21st December (IG, RAJ, GTW, BZ).

Not all reports of **Grey Lag Geese** at the beginning of October necessarily refer to arrivals from abroad, but there are sufficiently many to make them worth giving. One bird was at Strathbeg on 1st (NE); 45 flew north at the Ythan at 1630 hrs on 2nd (CO); 150 flew south over Gordonstoun, near Elgin, on 3rd (THJ), and 75 flew west over Port Elphinstone, Aberdeenshire (CO); on 4th, 13 arrived at the Sands of Forvie from the east in a gale (CO); on 5th there were more arrivals there from the east, including 374 in 11 flocks between 0845 and 0945 hrs, and 124 in three flocks in the next hour (CO), and 32 were counted at Kinnordy, Angus (HB), and 16 at Middleton, Midlothian (RW per WBr). There were 400 near the Lake of Menteith on 8th October (TMC). At Fair Isle the main passage was from 15th October, with peaks on 17th (44) and 20th (56) (RHD). Peak numbers at Strathbeg were 7000 on 22nd October (NE), while Angus counts on 27th gave 650 at Lintrathen and 2000 at Kinnordy (HB).

Eleven **White-fronted Geese** were at Strathbeg on 22nd October (MMq). Twenty-three of the Greenland form arrived the same day at the Endrick (and stayed for two weeks) (ETI, JMi, RS), and four Greenland birds (2 adults and 2 immature) were at Vane Farm Reserve, Loch Leven, the day before (JHSw). A single Whitefront was at the Lake of Menteith on 28th (NE). In Wigtownshire, the first 26 Greenland birds were on the Moor of Genoch on 9th November, and had increased to 94 by 13th and 96 on 12th December (RCD). A European Whitefront was seen at Llanbryde, Elgin, on 13th December (RHD).

Early records of **Pink-footed Geese** have already been given (4: 566). The first arrived on the Solway on 14th September, and the flight at Browhouses had increased to 3000 by 14th October (RTS, JGY). Only very small parties (under 100) were in the Moorfoots in September and up to at least 2nd October, but at Loch Leven there were some 800 on 1st October, increasing to several thousand by 4th, and over 6000 by 11th (per WBr). At Strathbeg there were 400 on 30th September (AR per NE), 1400 next day, and a peak of 3000 on

22nd (NE); 1100 passed over Invergowrie on 10th October (HB).

The following records of **Snow Geese** (and **Ross's Geese**), presumably escapes, have come in, though it is clear that not all sightings are reported:

Aberdeen—1 at L. of Skene on 25 Nov (ADKR, IT).

Angus—following the report of 5 near Errol on 2 Oct (4: 566), 5 were with Greylag at Kinnordy Loch from 15 Oct, being last seen on 24th (GWR, DAT); 1 with Greylag at Airlie on 11 Nov (DAT).

Fife/Kinross—1, thought to be Lesser, at L. Leven on 17 Oct (JAA, JEJ); 5, doubtless the same as the Angus flock, at Star of Markinch on 23 Dec (ER). A letter by K. Bishop in the *Dundee Courier* of 12.1.68 reported 5 in the L. Leven/Kinglassie area, and elicited a very interesting reply on 18th from the Earl of Dundee that he had bred Snow Geese at Birkhill, Cupar, for 15 years, and had left some unringed and unpinioned in the last 4-5 years. Usually these disappear, but one group of 5 has kept together for several years, returning in the spring to breed inside the enclosure where they were reared. Except when nesting they are quite wild, and they are strong, fast fliers. Quite a few recent reports of Snow Geese are explained by this valuable information.

Midlothian—1, usually reported as Ross's, with Pinkfeet at Gladhouse on 14th, 15th and 22 Oct and 5 Nov, and at Whiteside Law on 29 Oct (DGA, IVB-P, WBr, PJBS, RW, LY).

East Lothian—1 at Aberlady on 4 Nov (MFMM).

Dunbarton—2 over Gartocharn on 9 Dec, and 1 on 31st (SM).

On Islay there were three **Brent Geese** at Indaal on 8th October and four on 10th, and one at Port Ellen on 14th (HK). A Pale-bellied bird was at Strathbeg on 1st October (NE), and an apparently Pale-bellied one was at Tynninghame on 21st (AM). **Barnacle Geese** were in:

Fair Isle—13 on 19 Oct, and 6 on 22nd (RHD).

Aberdeen—14 on 29 Sept (cf. Caerlaverock) at Strathbeg (BGM), and 1 on 22 Oct (NE, MMq); 1 at L. of Skene on 25 Nov (ADKR, IT).

Angus/Kincardine—1 near Edzell with Greylag on 15 Oct (DGA, JADH); 1 at Airlie with Greylag on 9 Dec, and 6 there on 17th (DAT).

Perth—2 at Lake of Menteith on 18 Nov with Greylag and 6 possible Barnacle x Grey Lag Goose hybrids (with much less white on face) (DCS).

Midlothian—1 with Pinkfeet at Gladhouse on 1 Oct (DGA), and 22nd (PJBS, RWJS).

Dumfries—first to arrive at Caerlaverock were 30 on 28 Sept, increasing to 2500 by 1 Oct (ELR, JGY).

A **Canada Goose** was at Blackford, Perthshire, with a flock of Greylag and Pinkfeet on 28th October (DJ, ATM), and a pair was at Edgelaw, Midlothian, from 14th October until at least 17th December (DGA).

Whooper Swans were scarce at Fair Isle, the first being on 1st October, with counts of 34 on 11th and 12 on 16th (RHD). The hazards of counting are well illustrated by the peak on 22nd October at Strathbeg. One observer counted 822, of which 250 left in parties of 50-100 between 7.40 and 8 a.m. (JE),

another observer reported 690 (MMq), and a third got 350 (NE); the time of day can clearly make a big difference, on top of the variation expected between one counter and another. At Islesteps, Kirkcudbrightshire, the first 11 arrived on 21st October, increasing to 43 by 12th November, when the flock did not include a single first-year bird (JKRM, JGY).

Five **Buzzards** were counted in the bottom half of Glen Esk, Angus, on 2nd October (GMC), and there were singles at Cameron reservoir, Fife, on 29th October (GO), and near the Crook Inn, Peeblesshire, on 6th November (CGC). Isolated reports of **Sparrowhawks** are difficult to assess, but eight widely scattered sightings in Perthshire in the autumn are more than the observer has ever made before (VMT). Single 'ring-tail' **Hen Harriers** were at Fife Ness on 22nd October; Pittenweem, Fife, on 29th (PGTB); and Gladhouse on 11th November (DGA). Five miles SE of Sumburgh Head on 30th September an **Osprey** was seen from the *St Clair* being chased by a Great Skua until it dropped its catch (RE-H, DWO). There was one near Stoer, Sutherland, on 23rd August, and two together between Ullapool and Garve, Ross-shire, on 28th (ALFKT). At Banchory, Kincardineshire, one was being mobbed by Crows on 20th September (NP). **Merlins** were on passage at Fair Isle throughout October, with peaks of 8 on 3rd, at least 10 on 5th, and 8 on 18th (RHD).

Some records of **Water Rails** include: an immature dead under wires at Shieldaig, Ross-shire, on 7th November (DFW, JAW); one by Dornoch Burn, Sutherland, on 7th December (DM); one at West Edge Farm, Burdiehouse, Edinburgh, on 17th December, reported to have been there for about six weeks and to have come out of its ditch to follow the plough in one cold spell (MAM); one calling at Gladhouse on 29th October (DGA); and two at Linton Bog, 1½ miles SSW of Yetholm Loch, Roxburghshire, on 17th December (RSB). At Loch Milton, Kirkcudbrightshire, no fewer than 1120 **Coot** were counted on 17th December (DS, JGY).

There was a **Grey Plover** on Whalsay, Shetland, where it is a scarce bird, on 12th October (JHSp). About ten flew across a line of guns and two got killed on 5th October at Loch Spynie, Morayshire, the only previous entry of the species in the game book being one in 1906 (JBD). **Woodcock** were scarce at Fair Isle, where there were 40 on 23rd October, 20 on 24th, and 30 on 9th November (RHD). The first of the season in Lewis were at Carloway on 25th November (WAJC). A latish **Whimbrel** was at Aberlady on 15th October (WKR), and there was another on the same date on Unst, where one was also seen and heard on 4th November (MS). One flew W past Southernness Point, Kirkcudbrightshire, on 19th November (GK, JMx), six were as far north as Out Skerries on 24th

November (RJT), and four were at Dingwall on 6th December (HDS). At Seafield, Leith, a **Black-tailed Godwit** was noted on 28th October (WMO). Further **Green Sandpipers** (see 4: 569) were at:

Ythan—1 on 2 Oct (CO).

Tynninghame—1 on 12 Nov and 3 Dec (RWJS).

Moffat Water, Dumfries—1 dead at Roundstone Foot on 14 Nov (ED).

Islesteps, Kirkcudbright—1 on 21 Oct had been there for some weeks (WAU, JGY).

One more **Wood Sandpiper** may be added to the short list of records (4: 570)—at Newburgh, Aberdeenshire, on 4th August (BGM). There was a **Spotted Redshank** on the Tarty Burn at the Ythan on 2nd October (CO), and one at Tynninghame on 24th November and 3rd December (TB, EMS, RWJS). Winter records of **Greenshank** come from the mouth of the R. Evelix, Sutherland, where one was seen on 16th December (DM); and the Ythan, where there was one up to 25th November (ADKR) and again on 24th December (NE). At least three were still at Caerlaverock on 27th December (JGY). A **Knot** was at Tynninghame in full summer plumage on 3rd December (TB, EMS, RWJS). The unusual numbers of **Little Stints** have already been detailed (4: 570). On Whalsay, Shetland, they were seen between 1st September and 12th October, and the peak was 50 on 6th September (JHSp); while Out Skerries had three on 5th September, singles on 16th and 18th, and three on 20th (RJT). Further records are of one at Shandwick Bay, Easter Ross, on 1st October (AVM), and eight at Gladhouse on 2nd (EMS, RWJS). Three **Temminck's Stints** on Whalsay on 14th September were closely observed and compared with Little Stints and other small waders. They could not be found next day. The observer's previous record was a single bird on 4th September 1961 (JHSP). The following records of **Curlew Sandpipers** may be added to the many already given (4: 571):

Whalsay—1 on 5 Sept, 5 on 6th, 2 on 7th, and 1 on 8th (JHSp).

Strathbeg—1 on 29 Sept (BGM).

Ythan—1 on 4 Aug, 3 on 24th, and 2 on 16 Sept (BGM).

Montrose—1 on 3 Oct (GMC).

Fife Ness—2 on 1 Oct (DWO).

Gladhouse—1 on 14th and 18 Sept (DGA).

Peak numbers of **Ruff** on Whalsay were 20 on 6th September (JHSp). At Forfar Loch there were 16 on a football pitch on 4th October (GMC). Near Aberlady 19 were back on stubble by 14th October, and similar numbers were still there at the end of the year (DJ). A first-year **Grey Phalarope** was found newly dead in Shetland on 16th December (RJT), and one of two on Fair Isle on 26th October was killed by wires (RHD).

A **Great Skua** in November was seen off Rattray Head, Aberdeenshire, on 5th (MMq). Single **Pomarine Skuas** were at Tentsmuir on 1st October (DCG), Fair Isle on 14th (RHD) and Leith on 15th (WKR). Single November **Arctic Skuas** were at Tentsmuir on 5th and 19th (JD, RAC, CH, RWS, DBT). A **Long-tailed Skua** was on the Atlantic side of Islay on 22nd October (RHo per HK).

December **Lesser Black-backed Gulls** away from their usual haunts were one at Gracemount, Edinburgh, on 3rd (MAM), and two at Aberlady on 17th (PJ). More **Glaucous Gulls**—all first-winter birds—are reported round Shetland (up to 12.12.67) than in the past few winters (RJT). At East Bay, Dunoon, one was seen frequently from 14th November; at high tide it often sat on top of a lamp standard (WBk). There was one in the harbour at Ayr on 25th November (RDM, RBT). There was an immature **Iceland Gull** on Unst on 30th September (MS). South of the Forth there were two **Little Gulls** over Duddingston Loch on 11th October (DRA), and two adults and two immatures at Aberlady on 15th (WMo). **Kittiwakes** stayed very late at Fair Isle, with some still at the colonies on 5th November (RHD). On 10th December numbers were sitting, flying round and calling at two small cliff colonies in Yell, something the observer had never seen before at that season (RJT).

Single **Black Terns** were at Loch Spynie, Morayshire, on 5th October (per JBD), and over the Ponds at Gartocharn, Dunbartonshire, on 13th (WAl, ETI). Last records of '**Comic**' **Terns** in October are of two on Unst on 9th and one on 15th and 21st (MS, FJW), and four at Tynninghame on 15th (RWJS). A **Common Tern**—the observer's fourth there this year, though he had seen none before—was at Yetholm Loch, Roxburghshire, on 16th October (RSB), and an **Arctic Tern** was seen at Whalsay, Shetland, on 12th (JHSp). Finally, to round off this cluster of mid-October dates, a **Sandwich Tern** was close in at Portobello on 15th (TMC).

The first **Little Auk** of the autumn was early at Fair Isle on 24th September. At least 1000 were seen on the crossing to Shetland Mainland on 21st October (RHD). On 24th November there were considerable numbers between Yell and Out Skerries—eight parties of 10-20 on the crossing, all flying SW, and other smaller groups—and fishermen reported that the birds had been there for two weeks (RJT).

The last **Turtle Doves** were seen on Unst on 14th October (FJW), and on Fair Isle on 18th (RHD). A **Barn Owl** was seen at King's College, Aberdeen, in a snowstorm on 18th October (CFHB, ADKR), and there was one over Mount Street on 7th December (JAL). A **Little Owl** was roosting at Caerlaverock Castle, Dumfriesshire, on 13th December (JGY). A

Nightjar was heard once at Duror of Appin about the end of July or early in August (WGL).

Further October **Swifts** (see 4: 573) were one at Strathbeg on 1st (MMq), and 2 on 14th and 3 on 15th at Fair Isle (RHD). A **Kingfisher** was at Belleisle Golf Course near Ayr on 2nd December (HM). The last sighting of one of the **Hoopoes** on Whalsay (see 4: 574) was on 25th September, with one again on 4th October (JHSp). One was in Unst next day (FJW), and on 7th one was flying and alighting in front of a car near Dornie Ferry, Wester Ross (SG). Rather later, one was in a St Andrews garden on 21st November (per MHEC). A dead **Green Woodpecker** was picked up near Comrie, Perthshire, on 30th November (RHa). A **Wryneck** was on Unst on 2nd September and two were there next day (FJW); two were on Whalsay on 21st (JHSp); and Out Skerries had singles on 12th, 18th and 20th (RJT).

A rather early **Woodlark**, described in detail, was on Whalsay on 24th September (JHSp). About 400 **Skylarks** passed over Balgownie Golf Course, Aberdeen, in $\frac{3}{4}$ hour on 21st October (ADKR). A first-winter female **Shorelark** was at Fair Isle on 5th-7th November (RHD).

There was quite a string of November **Swallows**, though probably not all of them were different birds:

11th—2 at Dirleton, E. Lothian (RGT); 1 at Gullane (DCS).

12th—1 at Sands of Forvie (HEMD); 1 at Gullane (MJE), and 2, possibly different, seen there by other observers (ES, JS).

19th—1 at King's College, Aberdeen (ADKR).

22nd—1 at St Andrews (RAC, CH); 1 at Blackness, W. Lothian (per CKM).

24th—1 at Elie, Fife (per DWO).

26th—1 at Tentsmuir (JD, RWS, DBT).

2nd Dec—1 at Aberlady (PJ, AFL).

A late **House Martin** was at Liberton, Edinburgh, on 27th October and 9th November (MAM).

With reference to **Magpies** in Ross-shire (4: 574), there are two or three localities within 10 miles of Evanton at which one may usually see them at any time of year (CGH). There were 20 **Jays** at Strachan, near Banchory, Kincardineshire, on 3rd December (VCW-E).

Close views were had of a **Willow Tit** (with black bib, dull black crown, etc.) which visited a feeding site, frequented by several other species of tits, at Gairloch, Wester Ross, on 15th October and again on 13th November (ENH).

A Black-bellied **Dipper**, the usual form there, was at Fair Isle from 2nd to 20th November (RHD).

A further September record of **Fieldfare** (see 4: 574) was of three at Kinlochewe on 11th (DFW, JAW). Numbers at Fair Isle in October were small until 23rd, with peaks on 11th (350)

and 20th (300), but over 2500 on 23rd, 1500 on 24th and 25th, 1000+ on 26th and 300+ on 27th (RHD). The main influx in the Yetholm district was on 16th October, and flocks were passing S on the evening of the 28th (RSB). A westerly movement was noted on 4th November, with 50 over St Andrew Square, Edinburgh, at 0750 hrs, parties totalling perhaps 300 seen from the bus, and some 700 passing Aberlady between 0850 and 1100 hrs (MJE). In the sea buckthorn near Eyebroughty Point, East Lothian, there were 600 on 12th November (RSB).

Nine **Redwing** were at Yetholm on 30th September, but the main influx there was on 16th October, with birds passing S also on 28th (RSB). They were scarce at Fair Isle in October, with peaks on 13th (350, mostly Iceland), 23rd and 25th (250), and 2nd and 3rd November (300) (RHD). There were hundreds at Colinsburgh, Fife, on 6th October (PGTB). September figures for Unst (see 4: 575) were 50 on 20th, 18 on 24th, 40 on 25th, and 100 on 28th (MS, FJW).

A late cock **Ring Ouzel** was at Lang Crag, Dunbartonshire, on 5th November (DJL). There was a great arrival of 2000 **Blackbirds** at Fair Isle on the morning of 9th November, but they were all gone next day (RHD).

Small numbers of **Wheatears** were regular at Fair Isle until 28th October and the last was seen on 6th November (RHD). The latest **Whinchat** was one at Gladhouse, 900 feet above sea level, on 5th November (EMS, RWJS). Several **Redstarts** were seen early in November: two on 4th and one on 5th and 6th at Fair Isle (RHD); one near Collieston, Aberdeenshire, on 5th (ADKR); and one at Cupar, Fife, on 3rd (DWO). A **Black Redstart** was at Newburgh, Aberdeenshire, on 16th September (BGM); singles were at Fair Isle on 21st, 23rd and 30th October (RHD); there were two on Whalsay on 5th November and one next day (JHSp); and a cock was at Prestwick on 8th and 20th December (JAB). At first light on 6th November there were 43 **Robins** on the lawn of Crombie Hall, Old Aberdeen, in an area of 50 yards x 80 yards, but only three were left an hour later (ADKR).

A **Reed/Marsh Warbler** was at Norwick, Unst, on 21st and 24th September (FJW). There was a peak of 20 **Blackcaps** at Fair Isle on 20th October, and the latest records were of two on 14th November and one on 21st (RHD). Reports that probably refer to wintering birds are of a female coming to feed at Gairloch from 5th to 19th December (ENH), a female at a birdtable at Kyle of Lochalsh on 14th November and a male on 19th (MvO), a male at Elie on 25th November (DWO), and a male in a back garden at St Bernard's Crescent, in the middle of Edinburgh, on 9th December (JO). Following the

two **Barred Warblers** on Out Skerries on 4th September (4: 576), there were two on 5th and 10th, three on 12th, and singles on 13th, 16th and 18th (RJT). At Fair Isle the last **Garden Warbler** was noted on 6th and 7th November (RHD). There were very few **Chiffchaffs** there in October-November, the most being three on 4th-7th November (RHD). Presumed Chiffchaffs, rather than Willow Warblers, in November were three at Halligarth, Unst, on 19th and one on 25th (FJW), at least four at Culterty, Aberdeenshire, on 4th, and one on cliffs nearby at Collieston on 5th (ADKR). Still more **Yellow-browed Warblers** have been reported (see 4: 576): one at Halligarth, Unst, on 21st October (FJW); one at Lerwick on 3rd October (NE); Fair Isle sightings in October on 1st-5th (1-2), 6th (4), 7th (1), 11th (2), 20th-24th (1-2) and 29th (1) (RHD); and one at Slains Castle, Aberdeenshire, on 20th September, probably the first for Dee (BGM).

Large numbers of **Richard's Pipits** at Fair Isle in September have been noted (4: 577); in October there were up to three until 8th, and singles on 11th, 12th and 21st; in November there were up to three from 6th to 9th (RHD). The first **Rock Pipit** to reach Gladhouse was there on 5th and 11th November (DGA, EMS, RWJS). An 'alba' **Wagtail** at Stornoway on three successive Sundays in December, to the 17th, was the latest the observers have seen in Lewis by over three weeks (IMM, WMa). A **Grey Wagtail** by the R. Bowmont at Yetholm on 10th December was the first the observer had seen in any December since 1962/63; the species has been increasing in the area during the past two years (RSB). There was an immature 'Yellow' **Wagtail** at Gladhouse on 5th August (DGA).

There is a most impressive series of records of **Great Grey Shrikes**:

Shetland—on Unst, 1 at Norwick on 21 Sept (4: 577) (FJW), 1 at Halligarth on 23rd (SS), 1 at Saxa Vord on 14 Oct (ET), and 1 at Norwick on 14th and 15th (FJW); on Whalsay, 1 dead on 21 Oct (JHSp).

Fair Isle—in Oct, 1 on 7th, 5 on 11th, 7+ on 12th, up to 3 until 18th, singles until 23rd, and in Nov, 2 on 3rd (RHD).

Ross—1 on 23 Oct at Glascarnoch reservoir (GHCB); 1 at Alligin village on 8 Nov, and 1 in Glen Torridon on 19th (EB).

Inverness—1 at Kingussie on 4 Nov (VMT); 1 in Inverness on 23 Dec (RHD).

Moray—1 at Rothes on 25 Nov (AP).

Aberdeen—1 at Newburgh on 8 Nov (NE), 1 at Tarty nearby on 11th (PBH, DL, ADKR), and 1 at Newburgh on 29th (GMD); 1 at Tillypronie on 10 Dec (AW, VCW-E).

Kincardine—1 at Strachan on 24 Nov (NP).

Perth—1 at L. Chon on 29 Oct (FHB, MD); 1 at Meikleour on 11 Nov (VMT); 1 at Dunning on 19 Nov (VMT); 1 at L. Rannoch on 21 Nov (WDG); 1 at Lake of Menteith on 12 Dec (RKP); 1 at Tibbermore on 29 Dec (IN).

Argyll—1 on Taynult-Connel road on 3 Nov, and 1 in Glendaruel

on 10th (WBk).

Dunbarton—1 near Gartocharn on 2 Dec (WKR).

East Lothian—1 at Tynninghame on 12th and 24 Nov (TB, EMS, RWJS).

Roxburgh—1 at Ale Water reservoir on 3 Nov (KF, MMc).

Kirkcudbright—1 at Trostan, New Abbey, on 12 Nov (JKRM); 1 at New Galloway Station on 18 Nov (AJK).

In contrast, there is just one record of a **Red-backed Shrike**—at Newburgh, Aberdeenshire, on 16th September (DB-W, WMu).

The **Greenfinch** is very uncommon in Shetland, where a female was seen at Haroldswick, Unst, on 22nd October (FJW). Five were at Fair Isle on 1st November (RHD). Various northern observers mention **Goldfinches**, mainly in November, without making clear just how unusual they are, but the following seem worth noting:

Lewis—1 at Butt on 18 Nov (IMM); 8 at Stornoway on 2 Dec, the observer's biggest flock in Lewis, where it is only an occasional winter visitor (WMo).

Sutherland—1 at Dornoch on 26 Nov and 6 on 2 Dec (DM).

Ross—3 appeared at Gairloch on 14 Nov, the observer's first in the northwest (ENH).

Inverness—3, again the observer's first for the area, at Tulloch, Boat of Garten, on 27 Nov, and singles on 22nd and 30 Dec (RHD).

Aberdeen—1 at Dyce on 8 Nov (NE).

Kincardine—1 in Glen Dye on 8 Nov (NP).

Only odd **Siskins** were at Fair Isle in October and November (RHD), but there are indications of immigrants: three at Fife Ness on 8th October (DWO); small party near Oldhamstocks, East Lothian, on 29th October (EPB); a number of December reports from East Lothian, including small flocks between Spott and Stenton and near North Berwick, and 16 at Barns Ness on 16th (AM); and seven at Flotterstone, Midlothian, on 24th December (ADKR). Twenty **Twite** were by the Ythan, Aberdeenshire, on 26th November (HEMD), and 15 on 3rd December (NE). In Dumfriesshire 24 were at Barnkirk Point on 19th November (JKRM), and there were 32 on the Wigtownshire coast near the Moor of Genoch on 3rd December (RCD). Some **Bramblings** have been noted (4: 578); there were singles on Unst on 3rd and 23rd September at Norwick and 40 on 21st October and 17 next day (FJW). At Fair Isle there were fewer than in 1966, with a peak of 280 on 18th and 200 on 21st October (RHD). There were 35 just south of Aberdeen on 21st October, and 17 on Scotstoun Moor, Aberdeenshire, on 25th (CFHB, ADKR). By the end of the year there was a fair scattering in parts of Aberdeenshire (GMD), and a flock of 200 was at Kirriemuir, Angus, on 25th December (JD).

A **Yellowhammer** was on Whalsay on 5th November (JHSp). There were two **Ortolan Buntings** at Norwick, Unst, on 10th

September (FJW). Single **Little Buntings** were seen at Fair Isle on 18th and 20th October and 12th November (RHD). There were two **Lapland Buntings** there on 1st-2nd October, singles until 11th, and 1-2 on 3rd-8th November (RHD). At Newburgh, Aberdeenshire, five were seen on 15th October and one on 19th November (BGM), and there was one at the Sands of Forvie on 3rd December (HEMD). At Aberlady one was seen on 4th November (MJE). Further early-September sightings of **Snow Buntings** (see 4: 578) were of five on Unst on 4th (FJW), and two flying in off the sea at Port Henderson, Wester Ross, on 7th (KSM). At Fair Isle there were peaks of 300 on 27th and 28th October, 880 on 4th November and 700 next day (RHD). Otherwise, the largest flocks reported were 200 on Unst on 6th November (MS, ET), 200 at Strathbeg on 5th November, 200 at Gladhouse on 26th November (EMS, RWJS), and 160 at Aberlady on 2nd December (PJ). A **Tree Sparrow** was at Baltasound, Unst, on 10th September (FJW), and three were seen on 6th November (ET).

Earlier observations—before 1st August 1967

Two **Red-throated Divers** in Nigg Bay on 8th October 1966 and three on 16th are evidently the first published record for North Kincardineshire (ADKR).

In 1966 there were at least ten pairs of **Great Crested Grebes** breeding at Lindores Loch, Fife. In 1967 there were none, and **Little Grebes** were down from two pairs to none. The loch had been sprayed with derris and rotenone to kill the pike, with a view to restocking with rainbow trout. It is a Site of Special Scientific Interest (JW).

In Princes Street Gardens there was a duck **Mallard** with at least one duckling (in the hand of a policeman) on 25th April; and on 18th July there was a duck with eight small ducklings hiding in a flower bed (DGA). A drake **Garganey** in eclipse was at Rosebery, Midlothian, on 22nd July (DGA).

An **Osprey** was at Boddam, Aberdeenshire, on 17th July (BGM). A **Hobby** on Out Skerries on 30th and 31st May ties in well with the report of one in Banffshire on 1st June (4: 568) (RJT).

A pair of **Ringed Plovers** bred on reclaimed land north of the Imperial Dock in Leith in 1967. Breeding was suspected on 25th April and a scrape found. Three birds were present on 27th May; and two pairs were acting as if young were present on 3rd June, when one, 2-3 days old, was in fact found (CPR).

A **Long-tailed Skua** flew along a valley at Norwick, Unst, on 4th June (BGM). Single **Iceland Gulls** (perhaps only one) were on Unst in July, at Springfield Hotel on 1st, Halligarth on

16th, and Baltasound Pier on 21st (EAM, SS, MS, FJW). A pair of **Common Terns** bred in Leith Docks in 1967. There were two eggs on 12th June, and it was later learned that of the full clutch of three, one was addled, one was stolen and one hatched by 3rd July, the chick being seen again on 15th being fed. It was not seen after 16th, and remains found later suggested that it was killed by a rat (CPR).

A **Short-toed Lark** was at Norwick, Unst, on 10th and 11th May (MS, FJW). There were five **Garden Warblers** in the Forest of Birse, Aberdeenshire, on 29th June; this is on the edge of the bird's range (BGM). A spring **Richard's Pipit** was recorded on North Ronaldsay on 13th April (KGW); and there was a **Red-throated Pipit** at Haroldswick, Unst, on 11th and 12th June (MGM, MS, FJW). Two **Yellow Wagtails** in the Carron Valley on 14th April were 16 days earlier than those already mentioned (4: 519) (AS). A **Red-headed Bunting** was on Out Skerries on 27th April (RJT). A **Tree Sparrow** at Burrafirth, Unst, was feeding three freshly fledged young on 20th July (FJW).

General observations—behaviour etc.

On 5th November a **Red-throated Diver**, flying some 20 feet above the water off the Sands of Forvie, slowed down, partly folded its wings, and plummeted head-first into the sea like a Gannet. It went right under the water, then surfaced and ate a fish before flying off in a few seconds. It did not repeat the performance (ADKR).

At Loch Kinardochy, Perthshire, on 25th November there was a female **Goldeneye** with an unusual bill colour. The bill was entirely orange-yellow and appeared somewhat heavier than normal, but perhaps only because of the bright colour. In every other respect the bird was a typical Goldeneye, though only three drakes were available for direct comparison. The closely related Barrow's Goldeneye from the Rocky Mountains are said to have this bill colour quite often (*A Coloured Key to the Wildfowl of the World*) (VMT).

O b i t u a r i e s

Rev. E. T. VERNON

By the death of the Rev. E. T. Vernon at Fairlie on 13th November 1967 the S.O.C. lost one to whom we shall always be indebted. It was 'Edward T.', as many of us affectionately came to know him, who 'held the fort' during those difficult and uncertain war years, and afterwards he acted as interim Honorary Secretary until George Waterston returned in

summer 1946. No meetings were held during the war but, thanks largely to his efforts, the club was speedily reconstituted when things returned to normal, and the first post-war meeting took place in Edinburgh on 10th January 1946.

One or two meetings were held in Glasgow, and it soon became clear that a separate branch could be launched there. Who more obvious than Mr Vernon for its first Chairman, a position he held from 1948 to 1952, also representing the branch on the Council, to which he had been elected in 1939. Under his enthusiastic leadership the new branch grew rapidly and became a model for others which were to spring up all over Scotland.

Edward Vernon was born in the early 1890s, the son of the minister for Edzell in Angus. He went to Edinburgh University, and to New College. He served on combatant duty in the first world war, and was invalided out, having contracted, and nearly died of, enteric fever.

He was ordained at Kinross in 1919, and moved to London in 1924. In 1929 he returned to Scotland to take up the ministry of Queen's Park Saint George's Church—then Queen's Park East—in Glasgow, where he served until 1938. From then until 1947 he was at Hyndland Parish Church, Glasgow, from which he moved to the country as minister at Ranfurly, Bridge of Weir, until his retirement in 1961. He then moved to Fairlie, where the mudflats and their waders had always fascinated him. He was the author of many writings on Church affairs, and was also much loved for his imaginative addresses to children, which were afterwards printed in *British Weekly*. His fondness for nature featured prominently in his sermons and writings.

He studied the birds that happened to be near him and did not go chasing after rarities. For example, he kept methodical records of the song periods of common species and showed clearly that they began earlier in his town parish than in his country one. In this, though not a scientist and with no opportunity for full-time work, he was, perhaps, a precursor of leading modern ornithologists. On the other hand, he came on the Scottish Bird-Islands Study Cruise and thoroughly enjoyed it.

As Branch Chairman, his lucid speaking and pawky sense of humour, coupled with a wide understanding of humanity as well as birds, ensured the success of every meeting. One recalls his story of two canaries called Byng and Walt—"Byng sings and Walt disnae." He tackled all problems with an almost boyish enthusiasm, his powers of persuasion being such that for any member to be asked to undertake some quite dull chore for the club was regarded as an honour. Amongst the feats we remember was his 'promotion' of Miss

Elsie Macdonald, despite her protestations that she knew nothing about birds, to become, under his enthusiastic spell, a model first Branch Secretary.

Mr Vernon leaves a widow and two daughters, to whom we offer our deepest sympathy.

C. E. PALMAR.

DAVID HAMILTON

The death, on 24th August 1967, in his ninetieth year, of David Hamilton has deprived the Scottish Ornithologists' Club of an outstanding Founder, and later Honorary, Member. From the age of about five years, he lived (a first occupant of the newly built house) at 63 Warrender Park Road, Edinburgh, where he early watched cows feeding in the pastures on the other side of the road (a list shows that he had observed 31 species of birds in or about the house and garden during his long residence). That, at the time of his death, he was the foremost *all-round* field naturalist in the Lothians, is an opinion acquiesced in by various experts in particular fields whose opinion has been sought.

David Hamilton, a 'working-man' in the common parlance, worked for many years as a toolmaker with Bruntons of Musselburgh. His enthusiasm for everything relating to natural history was unbounded, which perhaps explains why he never smoked or touched intoxicants and never entered a cinema, preferring to spend his money on books like Bannerman's *Birds of the British Isles*, which he bought when in his eighties. He was denied much of the free time most of us enjoy (even working seven days a week during World War II), and Scottish natural history absorbed every moment of his spare time. During that war, when his wife died, he would rise early, make his breakfast, and pocketing a 'piece' for his lunch, cycle to Musselburgh, start work at 6 a.m. and cycle home at night, perhaps looking over the surface of Duddingston or, as once happened, chasing a Quail in a field near Portobello. His midday meal he would consume while strolling by the Esk, making observations later to be reported in the *Scottish Naturalist*.

Like many of his generation he collected butterflies, moths, beetles, and, one must add, birds' eggs. Even so, his determination to record accurately all his finds made him refuse any specimen not collected by himself. His diaries are a treasure-house of most valuable information, and it is hoped that they will be made over to the club by his Executor. His enthusiasm lasted to the very end, for when his walking powers were diminished, he with the help of 'Dallimore & Jackson' and the car of his friend Mr Andrew Milne, toured the

countryside, collecting cones and identifying conifers.

He will be remembered as the discoverer and recorder of the Bee-eater's attempt to nest in Scotland, and by his extensive observations on the Swift at dusk, which showed how the bird returned silently in the dark to its nest, not spending the night sailing in the upper air, as had been widely supposed. As for his last splendid action—giving his body to Science—it must evoke our profoundest respect.

P. W. G. GUNN.

CHARLES WILLIAM SANDERSON

Charles William Sanderson died at his house, Birnieknowes, Cockburnspath, on 11th June 1967 in his 72nd year. He was educated at Edinburgh Academy and served throughout the first world war in the 7th Royal Scots, in which he became a Captain. During the second world war he was a keen member of the Observer Corps.

Charlie Sanderson's enthusiasm for ornithology started in his boyhood and lasted throughout his life. In this he had the advantages of a keen intelligence, a methodical mind, and a most sensitive feeling for all living creatures. He would never allow anything to disturb or alarm the birds he loved to watch, and he built up a really fine range of photographic equipment from which he obtained memorable results.

He was, it is believed, the first to photograph the Green Woodpecker at the nest in Scotland, and during his periodic visits to Inverness-shire he made delightful studies of the Crested Tit and the Slavonian Grebe and many other species. Nearer home he obtained a very successful picture of a Grey Phalarope on a small loch in the Borders, and further afield his friendship with a Dutch ornithologist enabled him to obtain valuable records of the Black Tern.

He was a man of many interests, although the study of birds was no doubt the greatest. His rock garden at Birnieknowes was known and appreciated by many visitors, and the carnations which he grew and which beautified his house will not soon be forgotten.

It was characteristic of him that none of these interests was allowed to interfere with the management of his large East Lothian farm.

He was a quiet and retiring man, but his humour, kindness and courtesy endeared him to a host of friends who will remember him with a lasting affection.

R. C. NOTMAN.

Reviews

Birds of the Antarctic. By Edward A. Wilson. Edited by Brian Roberts. London, Blandford Press, 1967. Pp. 191; photograph and 320 paintings and drawings (4 unnumbered; 172 in colour). 30 x 24½ cm. 105/-.

To begin with, we must say that this is the most attractive work on birds we have seen for a very long time. The purpose of the book, published some fifty-five years after Dr Wilson's death, is stated in the Introduction as being to "bring together and make available to a wider public a representative selection of his illustrations of Antarctic birds."

Edward Adrian Wilson (1872-1912), by reason of his personal character and the manner of his death with Captain Scott, Captain Oates, "Birdie" Bowers and Seaman Evans in February 1912, has become a noble figure occupying a unique place in the history of Antarctic exploration. Much has been written about him and his companions and their sad fate, on which we need not enlarge here.

But a proper assessment of Wilson's place as an ornithologist, and particularly as a painter of birds, is overdue, and this is the task that Dr Brian Roberts has undertaken so ably in this book. He has had at his disposal all the known work, writing, drawings and paintings, that Wilson had time to do. He has made a selection from this material, known only to a few, of some 300 drawings and paintings, which have been reproduced in splendid style by photolithography in some 60 quarto pages of colour and 42 pages of monochrome illustrations.

We have long been an admirer of Wilson's bird and animal painting, having come across examples in various books over the years, for example Barrett-Hamilton's unfinished work *British Mammals*, Hesketh Pritchard's *Sport in Wildest Britain*, the facsimile volumes of the famous *South Polar Times*, and of course *Scott's Last Expedition*. His ornithological reputation rests chiefly on *The Grouse in Health and in Disease*, of which he wrote about a third, in addition to drawing all the illustrations, and on several reports on birds and seals on the *Discovery Expedition* for the British Museum (Nat. Hist.), *Ibis*, *Geographical Journal*, and others, some of which were illustrated by his paintings. We think that perhaps his greatest strength as an artist lies in his drawing, whatever the subject. This is usually well-nigh perfect, but his plumage work is never quite up to the standard of say Thorburn, the most famous of his contemporaries, or indeed several others. His own words show him to have been aware of room for improvement; he was a stern critic of his own work, and indeed of other people's at times (see remarks re George Lodge, page 31). He was also more than a little unfortunate in the quality of reproduction apparent in most of his published work. The plates in *The Grouse in Health and in Disease* were all reproduced by letterpress, and compare unfavourably with his lithographed plates published by the British Museum (Nat. Hist.) in the scientific reports on the *Discovery Expedition* (Nos. 63-66, 68-76, 93-98, 149, 280-284 and 289-293 in the present book), which we think by far the best plates in the book. We particularly admire the plate of the famous Emperor Penguin eggs, which is as good as anything we have seen by those masters of egg painting, Grönvold and Frohawk. For some reason few painters are successful with eggs, which certainly demand ability to draw in detail.

It must also be remembered that most of the sketches were made under the most difficult conditions. We feel there is no doubt that had Wilson lived to return to England and work on his sketches, the same

rate of development in skill shown on comparison of his earlier pictures with those of 1910 and 1911 might reasonably have been expected—Wilson was only forty years of age when he died. At the same time we must take into consideration Dr Roberts' suggestion (p. 29) that Wilson was more concerned by 1910 with wider fields for his art than bird painting—a distinct probability, as commercial success as a bird and animal painter had so far eluded him.

Of Wilson's standing as a professional zoologist there is no doubt. His merit as a pioneer in ornithological research has been assessed by Dr Lack (*Ibis* 1959: 75). The pity was of course that he did not survive to write the ornithological report of the *Terra Nova* expedition himself. This handsome volume helps to compensate for that loss to ornithological literature, and at the very least, coupled with the recently published 'Discovery' *Diary*, will help to keep forever green the memory of a man of remarkable character, a skilled ornithologist and a very fine painter of birds. Anyone interested in birds is bound to find this book fascinating and, one must say it these days, full value for money.

RITCHIE SEATH.

Thorburn's Birds. Edited with an introduction and new text by James Fisher. First published 1915-18 as *British Birds* by Archibald Thorburn, 4 vols 4to. London, Ebury Press and Michael Joseph, 1967. Pp. 184; endpaper maps and 82 colour plates. 25½ x 19 cm. 50/- [prepublication price 42/-].

Were the sole reason for this book to draw the attention of new generations of ornithologists to the bird paintings of Archibald Thorburn its publication would still be timely and justified.

At the time of his death over 30 years ago, Thorburn (1860-1935), a Scot born and bred, was generally considered to be the best painter of birds and mammals of his time, indeed by many people, of all time. Since contemporary painters of birds and beasts over his working lifetime included Wolf, Lear, Gould, Keulemans, Liljefors, the two Alexanders, Fuertes, Brooks and many other fine painters, some measure of his eminence as an artist in his own field may be appreciated.

Thorburn's famous quarto work in four volumes, *British Birds*, has long been an expensive collector's item beyond the means of most people. In the present work the 82 plates from the original work have been reproduced by photolithography approximately half size. While we cannot expect the sharpness and brilliance of the original quarto plates, which were produced by first-class letterpress process, these reproductions are really very satisfactory indeed and bring the splendid plates within everyone's reach, at moderate cost. Had all the illustrations been of the quality of the book jacket (from plate 71), which is treated on a somewhat larger scale and without the border, no doubt imposed for technical reasons, we would have been indeed fortunate. But on the whole we have nothing but praise for the plates, which will surely rouse in many the ambition to possess a set of the original quarto volumes.

Mr Fisher has written a splendid introduction, a mine of biographical and bibliographical information on Thorburn—difficult subjects because of his extensive output over a long period; in this connection the author has omitted to mention the two post-war volumes of Archer's *Birds of British Somaliland*, which contain some fine posthumously published plates by Thorburn. Due appreciation of his merits as a painter is also given in this introduction.

Thorburn himself made no claim for any great authority for his

letterpress, and Mr Fisher has rightly written a completely new text, bringing particularly our present knowledge of distribution and status up to date, even to the recording of Fetlar's Snowy Owl last summer. The method of estimating numbers of breeding pairs by a geometric or logarithmic order is quite fascinating and very enlightening. Although the text is avowedly confined to distribution and status, had the author only seen fit to give (1) breeding dates and simple nesting facts, and (2) some indication of size, this book, with its fine illustrations and modest price, would have been as good a condensed handbook of British birds as one could wish for. In any case it must find its place in most libraries.

RITCHIE SEATH.

The Birds of North Africa from the Canary Islands to the Red Sea. By R. D. Etchécopar and François Hùe. Illustrated by Paul Barruel. Translated by P. A. D. Hollom. Edinburgh and London, Oliver & Boyd, 1967. First published Paris, 1964, as *Les Oiseaux du Nord de l'Afrique*. Pp. xx + 612; maps and line drawings throughout and 27 plates of birds (24 in colour). 23½ x 16 cm. 168/-.

The authors have studied the birds of North Africa for ten years and in this book have brought together their extensive first-hand knowledge of the region with additional information from the work of other ornithologists. They have covered the whole area from the Canary Islands to the Red Sea and as far south as, approximately, the 21st parallel, thus taking in most of the Sahara. Many of the species found in this region do not breed in Europe, but great numbers of European and Asian breeding birds pass through on migration. All species which have been recorded are described under the headings of identification, behaviour, nesting (where relevant), distribution and subspecies. The section on identification is concise, with a sub-division giving field characteristics. The sections on behaviour and nesting both give interesting and useful information, and for breeding species a distribution map follows the final section of the description.

Descriptions of the species within each genus are preceded by an identification key. Where possible, the most noticeable field characteristics have been used, but in cases where differences are subtle, a technical key is presented for considering identification in the hand. Keys are certainly useful for identifying birds in the hand, although for field identification one is far more likely to turn first to the illustrations.

The 24 colour plates include all the species which are not found in Europe. Most of these plates are of a high standard, and only plate XIX, the wheatears, is spoiled by being too crowded. Three monochrome plates cover the petrels, ducks and terns, and most other species not covered by the plates are illustrated by excellent line drawings. The authors, however, do refer their readers to R. T. Peterson's plates in *A Field Guide to the Birds of Britain and Europe*.

The book has been designed for use in the field, but is rather bulky. A great deal of information has been condensed which will enable a visitor to identify quickly birds which are new to him. It will also give him more information about such species than one would expect from a field guide. The production of this book, which covers such a vast and difficult region, has been a fine achievement, and it is an essential item for ornithologists visiting North Africa. Unfortunately, at eight guineas, it is probably too expensive for those without a special interest in the region.

N. PICOZZI.

Animals and Birds in Australia. By Graham Pizzey. Australia (and London etc.), Cassell, 1966 (London 1967). Pp. 10 un. + 170 + 4 un.; 257 photographs (23 in colour) and 77 maps. 32 x 24 cm. 105/-.

Large, profusely illustrated books of animals from all over the world seem to be the rage these days. However, one rarely comes across the combination of high quality photographs, taken to illustrate the ways of life of animals and the habitats in which they live, and an authoritative but interestingly written text, linking the author's own experience with important factual information about the animals he has encountered. Graham Pizzey has achieved this remarkably well in this book.

Mammals, particularly marsupials, and birds occupy most of the pages but the treatment includes illustrations of insects, spiders, reptiles, frogs and the marine animals of the coral reefs. The material is arranged according to habitat, and most of the conspicuous habitat types in Australia are included, for example, the hard-wood forests, the mallee scrub, the grasslands, the rain forests, and the coast. Unfortunately he does not consider the deserts. Within each habitat, a variety of the more conspicuous species of animals has been illustrated with first-class photographs, black-and-white for the most part, though the twenty or so full-page colour photographs have been very well selected. For each species and for each habitat, there is a concise and interestingly written account.

This is a very pleasing book which gives a clear impression of the great variety of habitats and of animals of many kinds which are still to be found on the Australian continent.

G. M. DUNNET.

Penguins. By John Sparks and Tony Soper. Illustrated by Robert Gillmor. Newton Abbot, David & Charles, 1967. Pp. 263; 24 plates (33 photographs), and line drawings throughout (many coloured). 20 $\frac{3}{4}$ x 14 $\frac{3}{4}$ cm. 45/-.

Few of us have ever seen a wild penguin, and most of us probably never will, but even so we think of penguins as familiar, endearing creatures and share the popular enthusiasm for them—even if we sometimes find it difficult to think of them as birds. We would expect a book about penguins to reflect our feelings for them, and, as we claim to be ornithologists, to tell us all about them accurately and concisely. Much of the appeal of these birds is in their appearance, so we would hope too for a book full of illustrations.

This sounds a tall order; but John Sparks and Tony Soper have written a book which is both eminently readable and, in summarising and discussing every aspect of our present knowledge of penguins, scientifically sound. The photographs are first-class, but the pictorial impact this book immediately makes is due to the numerous lively illustrations and meticulous diagrams by Robert Gillmor, who is clearly in his element drawing penguins.

The opening chapter deals with "Penguins as Birds," describing how they are adapted to their environment and comparing them with other aquatic birds and animals; the section on heat-conservation is especially interesting. The evolution of penguins is not discussed until the fifth chapter, after three chapters on breeding biology and ecology. There is a wealth of detail in these chapters, each being full of interesting facts and ideas; did you know, for example, that a fit penguin can outswim a leopard seal; or that the 'tube-noses' are considered to be their nearest relatives; or that the breeding cycle of the King Penguin lasts for 15

months? A very pleasing feature of these chapters is that most points in the text are illustrated by line drawings or diagrams.

Unexpectedly, there is a chapter giving an account of how penguins were discovered (and often slaughtered in incredible numbers) by early explorers, complete with a series of reproductions of the first drawings of them. Past and present exploitation of penguins by man is discussed, and the need for conservation measures in certain areas is stressed. Mention is made of the ultimately unsuccessful introduction of penguins to Norway in 1936; the last sighting of one of these birds was made as recently as 1954. Full notes on the 17 living species of penguins, with full-page drawings of each, a comprehensive bibliography and an appendix on penguins in captivity complete the book.

Only one thing disappointed me—and that was that I reached the last page all too quickly. It was slightly startling to find “tarsi” spelt “tarsii.” *Tarsius*, as far as I know, is a primitive East Indies primate and not part of a bird’s leg. However, I thoroughly enjoyed this book, and learned a great deal from it. If you like penguins you should buy it—even at 45/-.

M. J. EVERETT.

Hummingbirds. By Walter Sheithauer. Translated by Gwynne Vevers. New York, Thomas Y. Crowell (with Arthur Barker), 1967. First published West Germany, 1966, as “*Kolibris*.” Pp. 176; map, 9 line drawings and 76 colour photographs (33 plates). 24½ x 20½ cm. 45/-.

A review of a book devoted to a family of birds confined exclusively to America and the West Indies may appear out of place in the pages of *Scottish Birds*. I would argue, however, that on more than one count a notice of this one is justified.

To begin with, *Hummingbirds* is just the sort of book to read through and admire, as I did, on one of those dreich, dank, Scottish winter evenings from which we suffer too often; its illustrations would infuse warmth, colour and beauty into the drabest circumstance. Secondly, the book contains a wealth of fascinating facts about its subject that will intrigue any lover of bird lore. Did you know, for example, that size for size some of the smallest of these ‘tiny jewels’ lay the largest eggs of any bird in the world? The Rufous Hummingbird *Selasphorus rufus*, which migrates a distance of about 2400 miles from Alaska to Mexico, weighs less than three-quarters of an ounce; its egg is half an inch long or about half the length of its body. No wonder that egg-laying takes a lot out of it!

The book contains an excellent account of hummingbird flight. The same *Selasphorus* may vibrate its wings at a phenomenal 200 wing-beats a second during courtship display, and at 35-37 beats a second when hovering. On a measured circuit with corners, lap times of over 47 m.p.h. have been recorded for another hummingbird; some species could probably achieve speeds of up to 55 m.p.h. without much difficulty on an uninterrupted course.

Not everyone approves of keeping birds in aviaries but Walter Scheithauer, doing just that with hummingbirds, has provided a fund of new information about them. Particularly valuable also are his instructions on feeding, and the details he gives of how his high-speed photographs were taken. Nearly 10,000 exposures were needed to obtain the pictures illustrating this book, which should not be confused with an earlier one with the same title, by Crawford H. Greenewalt, dealing with the life of hummingbirds in the wild.

W. J. EGGELING.

The Shetland Book. Edited by A. T. Cluness. [Lerwick], Zetland Education Committee, 1967. Pp. ix + [3] + 174; text figures and 24 plates (26 photographs). 24 x 15½ cm. 25/-.

Islands have a special attraction for many of us, and Shetland is doubly attractive, because it is the furthest north we can go in Scotland. It is strikingly different from the more populous parts of the country where most of us live, as witness the northern birds that nest there, the short summer nights, the Norse place names, and the constant presence of the sea.

The Shetland addict revels in the fascinating books that have been written about it and will need no excuse for adding this one to his collection, even if he never quite understands the doings of the old Norse heroes, or just where legend becomes fact. The uncommitted will find much of interest in the book, by way of a broad but highly condensed introduction to many facets of the area.

It is basically a school textbook, designed to give pupils a wide knowledge of their present home and its history. Twenty-eight chapters in a variety of styles, by about a dozen contributors, cover such diverse topics as geology, climate, agriculture, fishing, population, the rule of the Jarls, pressgang days, folklore, place names, prehistoric monuments, botany, biography and animal life.

Birds have always been very much part of daily life in Shetland, but now their tourist potential gives them a new economic significance to the islands. One would not expect a definitive account of them (for that, one must look to *Birds and Mammals of Shetland*) but the short chapter on the subject is by no means superficial.

The book is printed on pleasantly heavy quality paper and illustrated with interesting photographs, many of them by Shetland birdwatchers. If you are at all interested in Shetland or its people this book is worth a place on the shelves of your library.

ANDREW T. MACMILLAN.

Island Saga. The Story of North Ronaldsay. By Mary A. Scott. Including "The Birds of the Island," 42 pages, by Kenneth [G.] Walker. Aberdeen, Alex. P. Reid & Son (28 Market Street), 1967. Pp. 213; map and 33 line drawings. 18¼ x 12½ cm. 25/-.

North Ronaldsay is not a well known island; many ornithologists will remember it as a thin dark line visible on the southern horizon from Fair Isle, but few have ventured closer. Although they have the problems of isolation in common, North Ronaldsay is a very different place from its northern neighbour, as those who read this book will find out. The text wanders widely, from Norse history to beer-making, from shipwrecks to fairy stories. Miss Scott, being a native of the island, is able to give us an insight into the rigours and rewards of life there, and her efforts have been aided by illustrations, poems and anecdotes provided by her friends and relations. The whole is an interesting account of a way of life, which one hopes will be more than its epitaph.

The last chapter, and that which concerns us most here, is on the birds of the island, and is contributed by Kenneth Walker, for some years now a lighthouse keeper there. This is a most useful addition to our knowledge, for little has been written recently on the birds of Orkney. The systematic list shows the difference in breeding birds from those on Fair Isle, reflecting the differences in habitats. There is a close similarity in migrants, however, and considering the amount of cover and lack of coverage on North Ronaldsay, the list of rare birds seen there is surprisingly long. Nevertheless, one cannot but hope that Mr Walker will continue his observations for further years to provide a

fuller account, for the status attributed to some species is curious and accents the current lack of knowledge; only one record of Great Northern Diver could be found, for example, and that was in the last century.

PETER J. B. SLATER.

Where to Watch Birds. By John Gooders. London, Deutsch, 1967. Pp. 313; 8 plates (12 photographs) and 27 maps. 19 $\frac{3}{4}$ x 12 $\frac{3}{4}$ cm. 30/-.

This book is the first comprehensive and fully detailed guide to places of ornithological interest in England, Wales and Scotland. It lists over 500 of the best birdy places, giving a description of each, lists of the birds which are most likely to be seen, and the best time of year at which to see them. Precise directions as to how to get to each place are also given, with information about access to the area and, in many cases, excellent sketch-maps showing the best vantage points from which to watch. The book is an efficient production, well laid-out, with all necessary information clearly and precisely presented.

A field guide to habitats, such as this, must of course be kept up to date, and the author asks people to send him corrections—a wise request. There are a number of inaccuracies in the Scottish section, mostly due to the rapid, man-engendered changes in the countryside. Vast areas of Flanders Moss, for instance, were drained and planted by the Forestry Commission some years ago, and a motorway now runs through the Low Parks at Hamilton. It is to be hoped that Scottish readers will send corrections to the author without delay, so that visiting bird-watchers, on reaching a recommended location, will not be confronted by a row of conifers, or cars, instead of the expected flock of geese.

The book could have been greatly improved by substituting general maps, showing the location of each place, for the photographs, mostly aerial views, which are of no value.

I was very pleased to see that a copy of the RSPB leaflet *Code for the Birdwatcher* was enclosed with each copy. This might well have been made an integral part of the text, which contains no adequate warnings to prevent, as far as possible, harm to the birds from invasions of birdwatchers and others, particularly during the breeding season. If, for instance, they walk along the East Lothian coast from Yellowcraig to Eyebroughty in June and July "to see the moulting Eiders," as recommended, a great deal of damage could be done to shingle and dune nesting birds by inexperienced observers. The author makes the point that by publishing such a book he hopes that many people will be encouraged to visit the recommended places and to take an interest in the protecting and preservation of the birds and of the places themselves. One hopes that this will be so.

R. S. BAILLIE.

Nesting Birds, Eggs and Fledglings. By Winwood Reade and Eric Hosking. Plates of eggs by Portman Artists. Drawings by Robert Gillmor. London, Blandford, 1967. Pp. vi + 275; 209 photographs (168 in colour), 19 plates of eggs (16 in colour) and about 54 line drawings (including 4 double-page). 17 $\frac{3}{4}$ x 11 $\frac{1}{4}$ cm. 25/-.

This pocket encyclopaedia is about "birds at their nests and with their young," but its obvious inspiration is the block of photographs, mostly by Eric Hosking, of "the better known birds found in the British Isles and Western Europe."

Possibly the availability of photographic material has influenced the selection; for example, the Siberian Jay is not likely to be well known

even in Europe, but the fact is that a lot of the appeal of a book of this kind would have disappeared without the European birds. The breeding of the Snowy Owl and Fieldfare in Scotland this last year and, maybe, the Turnstone next year, is sufficient vindication of the more outward look our ornithology sometimes needs. Colour reproduction is for the most part very good, although the Temminck's Stint, Wood Sandpiper and Goldcrest have an unnatural bluish cast. and the Rock Pipit looks quite bleached.

The egg plates are less inspiring. One egg is illustrated for each of 191 species, and it would have been more helpful to show the range of colouration and marking within some species, even though fewer birds were represented.

Miss Reade crams a wealth of accurate material into the text, covering breeding distribution and habitat, descriptions of nest, eggs, nestlings, fledglings and adults, together with hints on nest-finding, for 235 species. Commendably, the danger of disturbance at the nest is often stressed, but readers might be well advised to acquaint themselves with section 4 of the new Protection of Birds Act 1967 in relation to the "finding" of nests of our rare birds. Occasionally the conciseness of text disallows sufficient qualification; for example, that the Fulmar "nests usually on precipitous sea cliffs, but also on inland crags and on flat ground" is barely discriminating enough for Europe, at least not yet.

The brilliant little illustrations we have now come to expect from Robert Gillmor add pleasant relief to these fact-packed pages.

The book will appeal to the advancing beginner of whatever age, but it is good value for whoever buys it, even just for the pleasure of looking at the delightful pictures.

ROBERT G. CALDOW.

A Field Guide to the Mammals of Britain and Europe. By F. H. van den Brink. Translated and edited by Hans Kruuk and H. N. Southern. Illustrated by Paul Barruel. London, Collins, 1967. Based on "Zoogdierengids," Holland, 1955. Pp. 221; 32 plates (20 in colour), 135 maps, 75 drawings, pictorial endpapers. 18½ x 12 cm. 30/-.

F. H. van den Brink is to be congratulated on this most beautifully illustrated field guide, which could mark a turning point in the field identification of mammals, in much the same way that *A Field Guide to the Birds of Britain and Europe* revolutionised the identification of European birds in the wild.

Unlike birdwatching, mammal-watching as a hobby is relatively unknown in Britain, and nearly all studies of mammals are done by professionals or dedicated amateurs working on their favourite projects. Britain has a small number of mammal species, less than one third of the European total, and identifications are either basic or very difficult. This book will enable British naturalists to identify all the animals they might see in the wild, but often the identification of closely related species is still confused. Bats are notoriously difficult for field observers, and the separation of ground and water voles in Britain is more difficult than our most difficult warblers.

This field guide vividly illustrates the challenge of mammal identification awaiting any visitor to Europe. By stimulating interest in field identification it will do a great service, so that in the future the identification of mammals in the wild will approach the high standards of birdwatching.

One hundred and seventy-seven species, terrestrial and marine, are featured in this book. All of them are excellently illustrated in colour

by Paul Barruel, except whales which are shown in black-and-white. The Peterson system of pointers is employed to indicate field characters. The book is closely styled on the Peterson field guides, and birdwatchers will have no difficulty in following the layout. Each species is described in about half a page of text under the headings of identification, habitat, range, habits and similar species. The range of most species is indicated on a map of Europe which is more detailed and informative than in the bird field guide, but almost certainly less accurate because of the lack of information.

The format is so similar in places that users, weaned on the bird field guide, might gain the wrong information unless they read the print carefully. The checklist symbols, to denote the status of the species, have different meanings here. For a field guide, I see no point in marking the British distribution of wolf and brown bear with a black dot, even though it is amended by the symbol E under the illustration to explain that the species is now extinct in Britain. The maps may also be misleading for use in the field, as for example that of the sable, now extinct in northern Scandinavia, which is deliberately 300 years out of date.

Illustrations of tracks, skulls and dental formulae are added for identification purposes. Chapters on "how to use the book," "the problem of species," "the study and protection of species" and "taxonomic notes," along with a checklist, a glossary and a bibliography, make this a very readable and instructive book. The 221 pages contrast with 344 in the bird field guide, but as it is printed on heavier paper the books are similar in size and thickness.

For anyone visiting Europe this book is a must and very good value for money; for the stay-at-home it is a revelation to see how many more species of mammals occur just across the sea in Europe.

R. H. DENNIS.

Estuary Birds and Moor and Heath Birds. Shell Nature Records. British Birds series. Nos. DCL 704 and 706. Two 33 $\frac{1}{3}$ r.p.m. 7" records in illustrated descriptive sleeves. Recorded by Lawrence Shove and others, and edited by him. Published 1967 for Shell-Mex and B.P. by Discourses Ltd, London. 12/6 each.

The sixth and seventh records in this series. For further details see *Scot. Birds* 4: 326, 523.

Letter

SIR,

The Magpie in western Scotland

In his notes on Magpies in Argyll (*Scot. Birds* 4: 449) T. D. H. Merrie states that within the last four years they have been seen regularly in certain areas, including Ardyne Point, Toward. Magpies have been in this area for a much longer period than four years. I can remember seeing my first Magpie's nest in lower Glen Fyne in 1947. As far as I know there has always been a small breeding population in Toward.

WALLACE BRACKENRIDGE.

The Scottish Ornithologists' Club

SUMMER EXCURSIONS

Important Notes

1. Members may attend excursions of any Branch in addition to those arranged by the Branch they attend regularly.

2. Where transport is by private cars please inform the organisers if you can bring a car and how many spare seats are available. All petrol expenses will be shared.

3. Please inform the organiser in good time if you are prevented from attending an excursion where special hire of boats or buses is involved. Failure to turn up may mean you are asked to pay for the place to avoid additional expense for the rest of the party.

4. Please bring meals as indicated (in brackets) below.

ABERDEEN

For all excursions, please notify Miss F. Greig, 9 Ashgrove Road, Aberdeen (tel. 40241, Ext. Old Aberdeen 342, 9 a.m.-5 p.m.), one week in advance.

Sunday 8th September. YTHAN ESTUARY AND LOCHS. Meet Culterty 10.30 a.m. (lunch).

Sunday 20th October. LOCH STRATHBEG (lunch).

AYR

Saturday 27th April. CULZEAN CASTLE, MAYBOLE (by kind permission of the National Trust for Scotland). Leader: S. L. Hunter. Meet Wellington Square, Ayr, 2 p.m. or car park, Culzean Castle, 2.30 p.m. (tea).

Saturday 18th May and Sunday 26th May. HORSE ISLAND, ARDROSSAN (by kind permission of the R.S.P.B.). Joint excursion with the Scottish Wildlife Trust. Leaders: A. G. Stewart and T. B. Kay. Meet Ardrossan Pier 2 p.m. (tea). Boat fare 5s. There will be a maximum of 11 passengers per excursion and members must contact Dr M. E. Castle, 9 Finlas Avenue, Ayr (tel. Alloway 41828), at least 7 days before the excursion.

Saturday 15th June. DRUMLANRIG CASTLE, THORNHILL, DUMFRIES (by kind permission of the Duke of Buccleuch). Leader: J. F. Young. Meet Wellington Square, Ayr, 1 p.m. or entrance to Queens Drive (off main road), Drumlanrig Castle 2.30 p.m. (tea).

Wednesday 19th June. AUCHINCROIVE ESTATE, by AYR (by kind permission of the Principal, West of Scotland Agricultural College). Leader: Dr M. E. Castle. Meet on drive near bus shelter at main gates of College on the Mauchline road 7 p.m. prompt.

Sunday 15th September. ENDRICK MOUTH, LOCH LOMOND NATIONAL NATURE RESERVE (by kind permission of the Nature Conservancy). Joint excursion with the Scottish Wildlife Trust. Leader: Dr M. E. Castle. Leave Wellington Square, Ayr, by coach 9 a.m. (lunch). Members must book seats at least 7 days before excursion by contacting Dr M. E. Castle, 9 Finlas Avenue, Ayr (tel. Alloway 41828).

DUMFRIES

Saturday 25th May. DRUMLANRIG WOODS, THORNHILL (by kind per-

mission of the Duke of Buccleuch). Leaders: J. Maxwell and J. F. Young. Meet Queens Drive, Drumlanrig, 2 p.m.

Sunday 30th June. BASS ROCK (by kind permission of Sir Hew Hamilton Dalrymple). Boat leaves North Berwick Harbour 10 a.m. (lunch and tea). Tickets, about 11s, will be purchased on the boat. If weather is unsuitable for landing an alternative excursion will be arranged. Members should make their own transport arrangements and should be at the harbour half an hour before sailing time. Applications by 16th June to H. M. Russell, Nara, Dalbeattie Road, Dumfries (tel. 3858).

Sunday 1st September. WATERFOOT, ANNAN. Leader: W. Austin. Meet Ewart Library, Dumfries, 2 p.m.

DUNDEE

All excursions by private cars, leaving City Square, Dundee, 9 a.m., except for June and July excursions.

Sunday 21st April. RESCOBIE AND BALGAVIES LOCHS.

Sunday 19th May. ST CYRUS.

Saturday 22nd and Sunday 23rd June. FIDRA AND BASS ROCK (subject to permission). Details of this excursion will be announced at the Branch meeting or may be obtained from the Branch Secretary, Miss J. Stirling, 21 Johnston Avenue, Dundee.

Sunday 7th July. GLEN FESHIE, CAIRNGORMS. Leave City Square 7 a.m.

Sunday 25th August. MONTROSE BASIN AND SCURDYNESS.

Sunday 22nd September. EDEN ESTUARY.

EDINBURGH

Saturday 27th April. ABERLADY BAY NATURE RESERVE (spring migrants). Joint excursion with the Scottish Wildlife Trust. Leader: K. S. Macgregor. Meet Timber Bridge 2.30 p.m. (tea).

Saturday 11th May. WESTWATER RESERVOIR, WEST LINTON (subject to permission). Joint afternoon excursion with the Scottish Wildlife Trust. Applications by 4th May to William Brotherston, 22 Rutland Square, Edinburgh 1, who will supply details of time and meeting place (tea).

Sunday 26th May. THE HIRSEL, COLDSTREAM (by kind permission of Sir Alec Douglas-Home). Excursion by private cars, leaving Edinburgh from square behind National Gallery 10.30 a.m. for Hirsell at 12 noon (lunch and tea). Applications by 18th May to J. A. Stewart, 109 Greenbank Crescent, Edinburgh 10 (tel. MOR 4210), stating number of seats required or available.

Saturday 8th June. ISLE OF MAY (numbers limited to 12). Excursion by private cars. Party meets and sails from West Pier, Anstruther, 10.30 a.m. prompt returning by 5 to 5.30 p.m. (lunch and tea). Cost of boat about 12s 6d. Applications by 1st June to Alastair Macdonald, Hadley Court, Haddington (tel. 3204), stating number of seats required or available.

Saturday 20th July. BASS ROCK (by kind permission of Sir Hew Hamilton Dalrymple). Numbers limited to 60. Boat leaves North Berwick Harbour 2.30 p.m. returning about 7 p.m. (tea). Tickets, about 11s, will be purchased on the boat. If weather is unsuitable for landing an alternative excursion will be arranged from North Berwick. Applications by 13th July to Miss O. T. Thompson, 3a Falcon Road West, Edinburgh 10 (tel. 031-447 1637).

Saturday 7th September. ABERLADY BAY NATURE RESERVE (autumn migrants). Leader: K. S. Macgregor. Arrangements as for April.

GLASGOW

Sunday 5th May. BARR MEADOWS. Leader : R. G. Caldow. Meet Lochwinnoch Station Yard 2.30 p.m. (tea).

Sunday 26th May. INCHCALLOCH, LOCH LOMOND. Leader : E. Idle. Meet Balmaha Pier 12.30 p.m. (tea). Applications by 15th May to Mrs Hutchison, 27 Northbank Road, Kirkintilloch, Glasgow.

Wednesday 12th June. HORSE ISLAND, ARDROSSAN (by kind permission of the R.S.P.B.). Numbers limited to 12. Leader : R. G. Caldow. Meet Ardrossan Harbour 6.30 p.m. Boat fare 5s. Applications by 1st June to Mrs Hutchison (address above).

Saturday 15th June. HORSE ISLAND, ARDROSSAN (by kind permission of the R.S.P.B.). Numbers limited to 12. Leader : R. G. Caldow. Meet Ardrossan Harbour 2 p.m. (tea). Boat fare 5s. Applications by 1st June to Mrs Hutchison (address above).

Saturday 29th June. BASS ROCK (by kind permission of Sir Hew Hamilton Dalrymple). Numbers limited to 12 per boat. Boats leave North Berwick Harbour at 12 noon and 1 p.m., returning 7 and 7.30 p.m. (tea). Tickets, about 12s, will be purchased on the boat. Applications by 1st June to Mrs Hutchison (address above).

Saturday 6th July. BASS ROCK. Arrangements as for 29th June.

INVERNESS

All excursions by private cars. Applications to Outings Secretary, Mrs W. Morrison, 83 Dochfour Drive, Inverness (tel. 32666).

Sunday 12th May. COVESEA CLIFFS. Leader : Miss Janet Banks. Leave Station Square, Inverness, 10 a.m. (lunch and tea).

Saturday 25th May. MUNLOCHY BAY HERONRY. Leader : Mrs W. Morrison. Leave Ness Bank Church, Riverside, Inverness, 2 p.m. (tea).

Sunday 2nd June. INSHRIACH FOREST, SPEYSIDE. Leader : H. A. Maxwell. Leave Station Square 10 a.m. (lunch and tea).

Sunday 16th June. TARBAT NESS, DORNOCH FIRTH. Leader : C. G. Headlam. Leave Station Square 10 a.m. (lunch and tea).

ST ANDREWS

Applications. not later than one week before each excursion, to Miss M. M. Spires, 4 Kinburn Place, St Andrews (tel. 523).

Saturday 18th May. KILCONQUHAR LOCH (subject to permission from Elie Estates). Meet North Lodge 2.30 p.m. (tea).

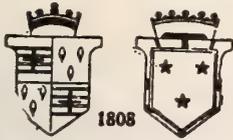
Sunday 26th May. ST SERF'S ISLAND (subject to permission from the Nature Conservancy). With the Warden. Numbers limited. Applications must be made by 18th May (lunch and tea).

Sunday 16th June. AN ANGUS GLEN (provisionally GLEN ESK). Cars leave St Andrews bus station 9 a.m. (lunch and tea).

Saturday 22nd June. TENTSMUIR. Cars leave St Andrews bus station 2.30 p.m. (tea).

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The Annual Dinner of the Glasgow Branch will be held in the Berkeley Restaurant, North Street, Glasgow, on Friday, 29th March 1968 at 7 for 7.30 p.m. Tickets, 25s, obtainable from the Branch Secretary, Mrs Hutchison, 27 Northbank Road, Kirkintilloch, Glasgow.



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Notice to Contributors (revised 1st December 1967)

1. General notes (not of sufficient importance to be published on their own as Short Notes) should be sent to the appropriate local recorders for inclusion in their summary for the annual Scottish Bird Report, not to the editor. A list of local recorders is published from time to time, but in cases of doubt the editor will be glad to forward notes to the right person. All other material should be sent to the editor, Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12. Attention to the following points greatly simplifies the work of producing the journal and is much appreciated.

2. If not sent earlier, all general notes for January to October each year should be sent to the local recorders early in November, and any for November and December should be sent at the beginning of January. In addition, local recorders will be glad to have brief reports on matters of special current interest at the end of March, June, September and December for the journal. All other material should of course be sent as soon as it is ready.

3. All contributions should be on one side of the paper only. Papers, especially, should be typed if possible, with double spacing. Proofs will normally be sent to authors of papers, but not of shorter items. Such proofs should be returned without delay. If alterations are made at this stage it may be necessary to ask the author to bear the cost.

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

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

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

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

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

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

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

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

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THE Scottish Ornithologists' Club was founded in 1936 and membership is open to all interested in Scottish ornithology. Meetings are held during the winter months in Aberdeen, Ayr, Dumfries, Dundee, Edinburgh, Glasgow, St Andrews and elsewhere at which lectures by prominent ornithologists are given and films exhibited. Excursions are organised in the summer to places of ornithological interest.

The aims and objects of the Club are to (a) encourage and direct the study of Scottish Ornithology in all its branches; (b) co-ordinate the efforts of Scottish Ornithologists and encourage co-operation between field and indoor worker; (c) encourage ornithological research in Scotland in co-operation with other organisations; (d) hold meetings at centres to be arranged at which Lectures are given, films exhibited, and discussions held; and (e) publish or arrange for the publication of statistics and information with regard to Scottish ornithology.

There are no entry fees for Membership. The Annual subscription is 25/-; or 7/6 in the case of Members under twenty-one years of age or in the case of University undergraduates who satisfy the Council of their status as such at the time at which their subscriptions fall due in any year. Joint membership is available to married couples at an annual subscription of 40/-. "Scottish Birds" is issued free to members but Joint members will receive only one copy between them.

The affairs of the Club are controlled by a Council composed of the Hon. Presidents, the President, the Vice-President, the Hon. Treasurer, the Editor and Business Editor of "Scottish Birds", the Hon. Treasurer of the House Fabric Fund, one Representative of each Branch Committee appointed annually by the Branch, and ten other Members of the Club elected at an Annual General Meeting. Two of the last named retire annually by rotation and shall not be eligible for re-election for one year.

A Scottish Bird Records' Committee, appointed by the Council, produce an annual Report on "Ornithological Changes in Scotland."

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Forms of application for Membership, copy of the Club Constitution, and other literature is obtainable from the Club Secretary, Mrs George Waterston, Scottish Centre for Ornithology and Bird Protection, 21 Regent Terrace, Edinburgh 7. (Tel. Waverley 6042).

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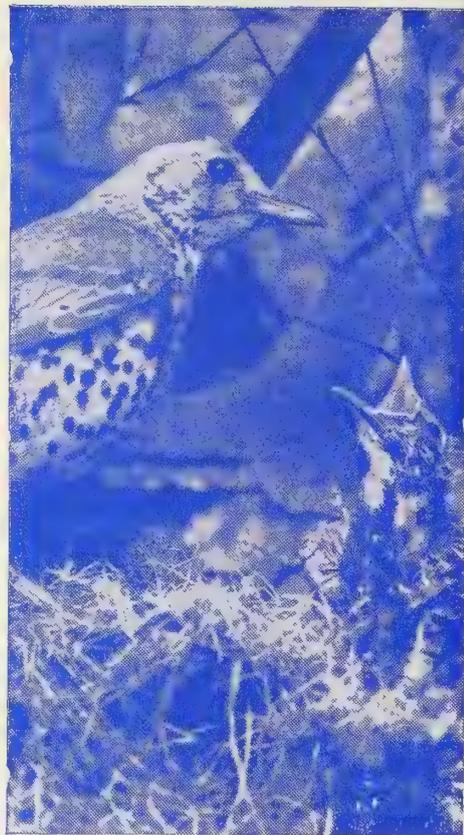
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SUMMER 1968

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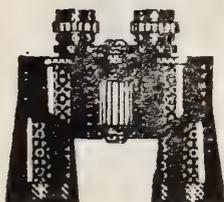
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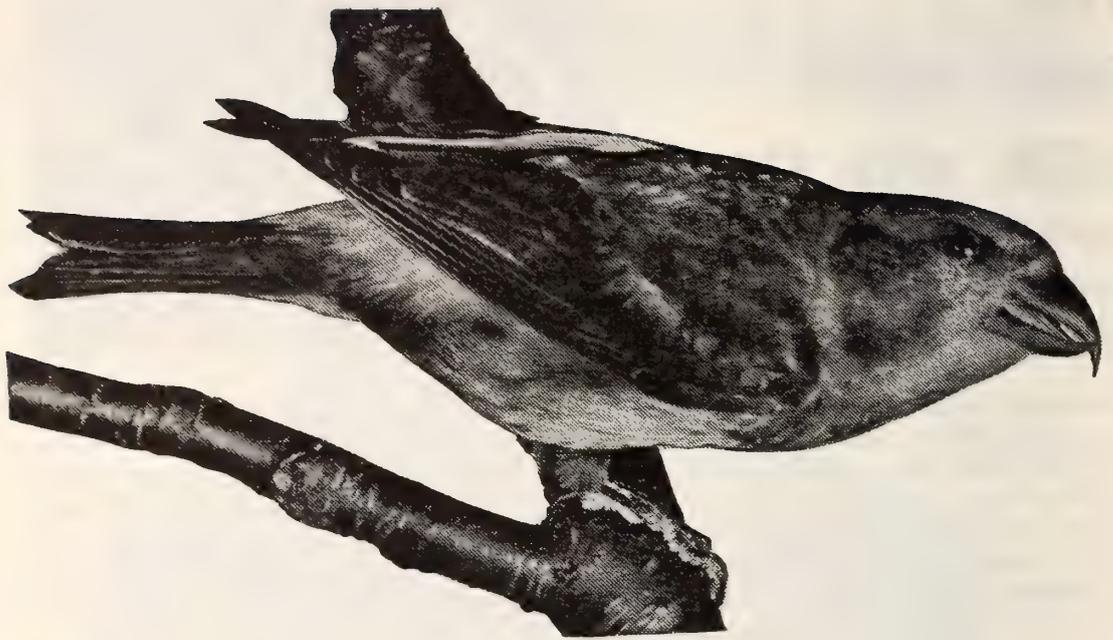
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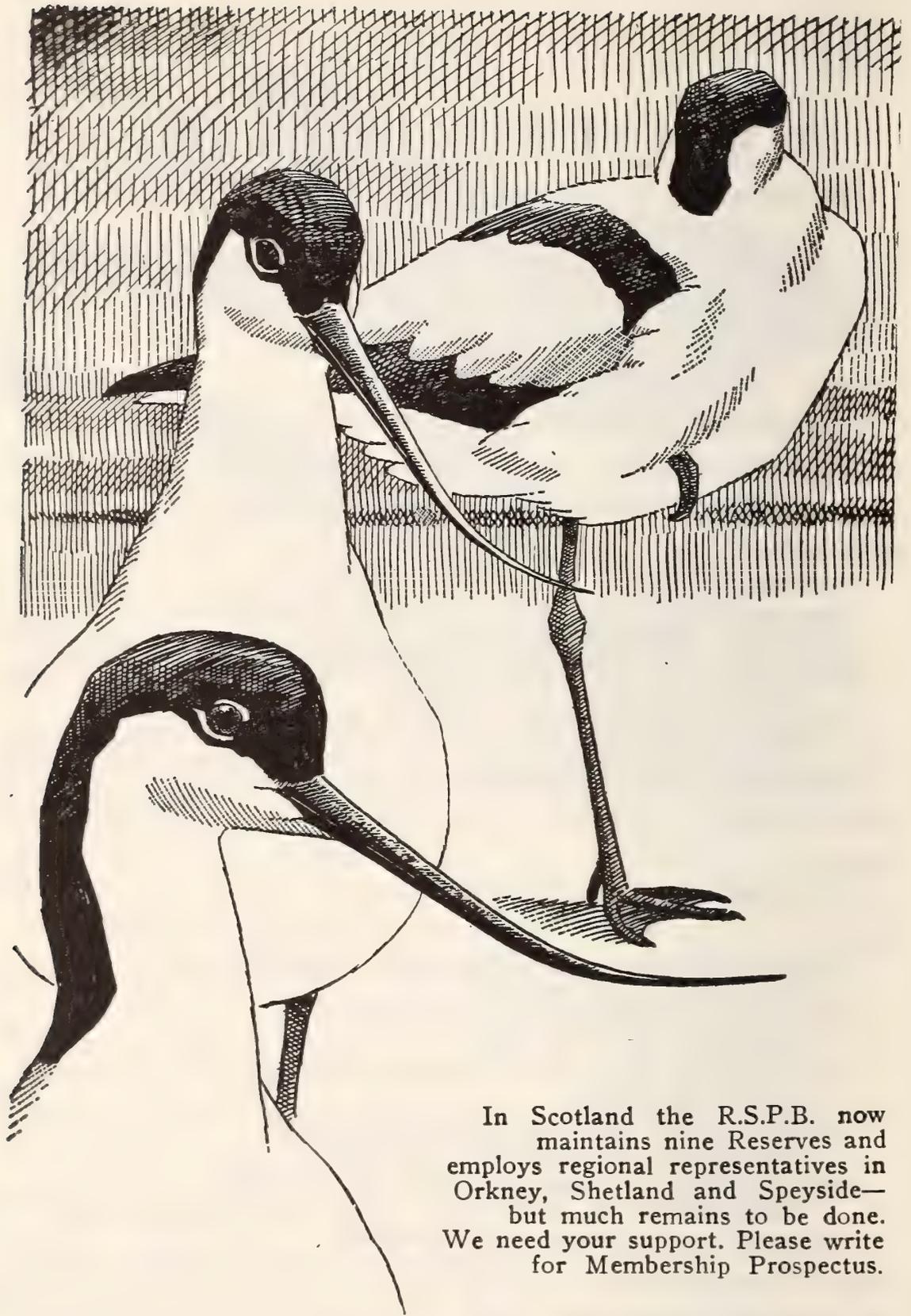
SCOTTISH BIRDS

THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB

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Edited by Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12.
Assisted by D. G. Andrew, T. C. Smout and P. J. B. Slater.
Business Editor T. C. Smout, 93 Warrender Park Road, Edinburgh 9.



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Vol. 5 No. 2

Summer 1968

Edited by A. T. MACMILLAN with the assistance of D. G. ANDREW, T. C. SMOUT and P. J. B. SLATER.

Business Editor, T. C. SMOUT.

Editorial

Fair Isle Bird Observatory Appeal. We are most conscious of the frequency with which we have recommended worthy appeals for funds to readers of *Scottish Birds*. Perhaps because birdwatching can be had for as little as one cares to spend, many societies have been reluctant to raise their subscription rates, and therefore find themselves without the necessary reserves to meet a sudden crisis. The SOC subscription of 25/- a year is of course a fine example of remarkable value, made possible by a large membership; yet one has been able to be a 'Friend of Fair Isle' (a title that suggests one should not expect to get the full value of one's subscription returned in kind) for a mere guinea, and to receive for this a fat annual report and a regular bulletin from the observatory.

There can be few finer birdwatching holidays in Scotland than a visit to Fair Isle at the height of the migration season. For all that, the real value of the island in an ornithological context stems from its unique situation in the chain of British bird observatories and from the quality and continuity of the observations and studies there over the past 20 years. Fair Isle is however much more than a bird observatory; it is a living community of people with a hope for the future, in striking contrast to the inevitable depopulation of more and more remote Scottish islands.

It would be a great shame on us all if we were to let this go, and a great loss both to Scotland and to ornithology. If the observatory failed, the island community would surely follow. Now the old naval huts will no longer do for the observatory and a new building is essential. The Highlands and Islands Development Board has recognised the real value of the observatory with a very practical offer of grants and loans of £26,000. We have to find another £10,000.

Details of the appeal are given in a leaflet enclosed with this issue, and we earnestly commend it to every birdwatcher and to everyone who knows and loves the wilder parts of Scotland.

Internal developments. The first Recent News section appears in this issue of *Scottish Birds*, replacing Current Notes, which will be largely incorporated in the new Scottish Bird Report. This change was planned, but another was not. We apologise for the delay in getting some Short Notes into print and hope that this problem will right itself in the next issue or two.

Film award. The RSPB film *Swallows*, based on C. K. Mylne's *Swallows at the Mill*, won the major award (a Cartier statuette of a Condor in natural stones such as labradorite, coral, jasper and chalcedony, according to *Birds*) at the Second International Cinematography Festival of La Ligue Française pour la Protection des Oiseaux in Paris. The film was edited by Anthony Clay.

Current literature. Some recent papers of interest to Scottish ornithologists are noted below. On the other side of the mirror we were gratified to find in the April 1968 issue of *Ibis* no fewer than 28 papers abstracted from the pages of *Scottish Birds* for a worldwide audience. Some of the abstractor's pungent comments introduce a refreshing air of levity to the pages of the senior ornithological journal; note, for instance, Davis 1963, Diamond *et al.* 1965 and Sandeman 1965.

Black-browed Albatross on the Bass Rock. G. Waterston, 1968. *Brit. Birds* 61: 22-27, 4 plates.

Influx of Great Shearwaters in autumn 1965. R. G. Newell, 1968. *Brit. Birds* 61: 145-159. Relevant to Scottish records.

Movements of Cormorants ringed in the British Isles and evidence of colony-specific dispersal. J. C. Coulson and M. G. Brazendale, 1968. *Brit. Birds* 61: 1-21. Several Scottish colonies analysed. These Cormorants do not migrate, only disperse.

Snowy Owls breeding in Shetland in 1967. R. J. Tulloch, 1968. *Brit. Birds* 61: 119-132, with 14 photographs.

Red-headed Buntings on Fair Isle during 1950-67. R. H. Dennis, 1968. *Brit. Birds* 61: 41-43. Letter and editorial note. Good evidence that all 21 are escapes, as also the 1931 North Ronaldsay specimen, hitherto the only accepted British record, but now struck off.

The Scottish Ornithologists' Club (and Bookshop), 21 Regent Terrace, Edinburgh 7, requires an Assistant Secretary, male or female, who should be willing to take responsibility, have some knowledge of ornithology, and be able to type. Membership, at present 2000, is increasing by 10% per annum. Apply to the Hon. Treasurer giving full details, including salary required and date when available.

Goose emigration from western Scotland

KENNETH WILLIAMSON F.R.S.E.

Introduction

A good deal of scattered information has accumulated concerning the spring emigration of geese which had presumably wintered in Britain, and probably for the most part in Scotland. Much of it has come from several bird-study expeditions to Sutherland and the Outer Hebrides, though in one year (1960) the data were provided by Archibald MacEachern, Principal Keeper at the Butt of Lewis Lighthouse. The species concerned are the Pink-footed Goose *Anser arvensis brachyrhynchus*, Grey Lag Goose *Anser anser*, White-fronted Goose (Greenland race) *Anser albifrons flavirostris* and Barnacle Goose *Branta leucopsis*, all of which have extensive breeding grounds in Iceland and east Greenland. The purpose of this paper is to bring this material together and to examine the meteorological environment of the spring migration.

The movements

1953

John King (1953) was leader of a party of staff and boys of the Edinburgh Academy which spent the period 13th-24th April 1953 at Carbisdale Castle, a few miles west of Bonar Bridge, studying migration in the Kyle of Sutherland. A main aim was to discover to what extent the lines of Loch Shin-Loch More, the River Oykell-Loch Assynt, and Glen Cassley (fig. 1) constituted 'flyways' for migrating geese. Table 1 summarises the movements observed by this party.

Table 1. Goose migration, Kyle of Sutherland, late April 1953

Date (April)	Locality	Total flocks	Total geese	Flight direction
18th	Carbisdale Castle	1	40	NW
19th	Carbisdale Castle	5	112	NW
20th	Loch Eye	1	30+	W
21st	Carbisdale Castle	1	40+	NW
22nd	Carbisdale Castle	2	190+	NW
	Spinningdale	2	40+	W
23rd	Carbisdale Castle	1	40+	NW

King made the following points: passage was not restricted to any one period of the day; no return movements to east or southeast were witnessed; and movements took place on both the north and south sides of the Kyle. At Carbisdale, however, they were always along the south bank and always to the northwest (approximately 330°), whereas at points east of Carbisdale they were due west towards the Kyle (fig. 1).

The first movements were seen in improving weather on 18th April and passage continued until observations ceased on the 23rd. Westerly

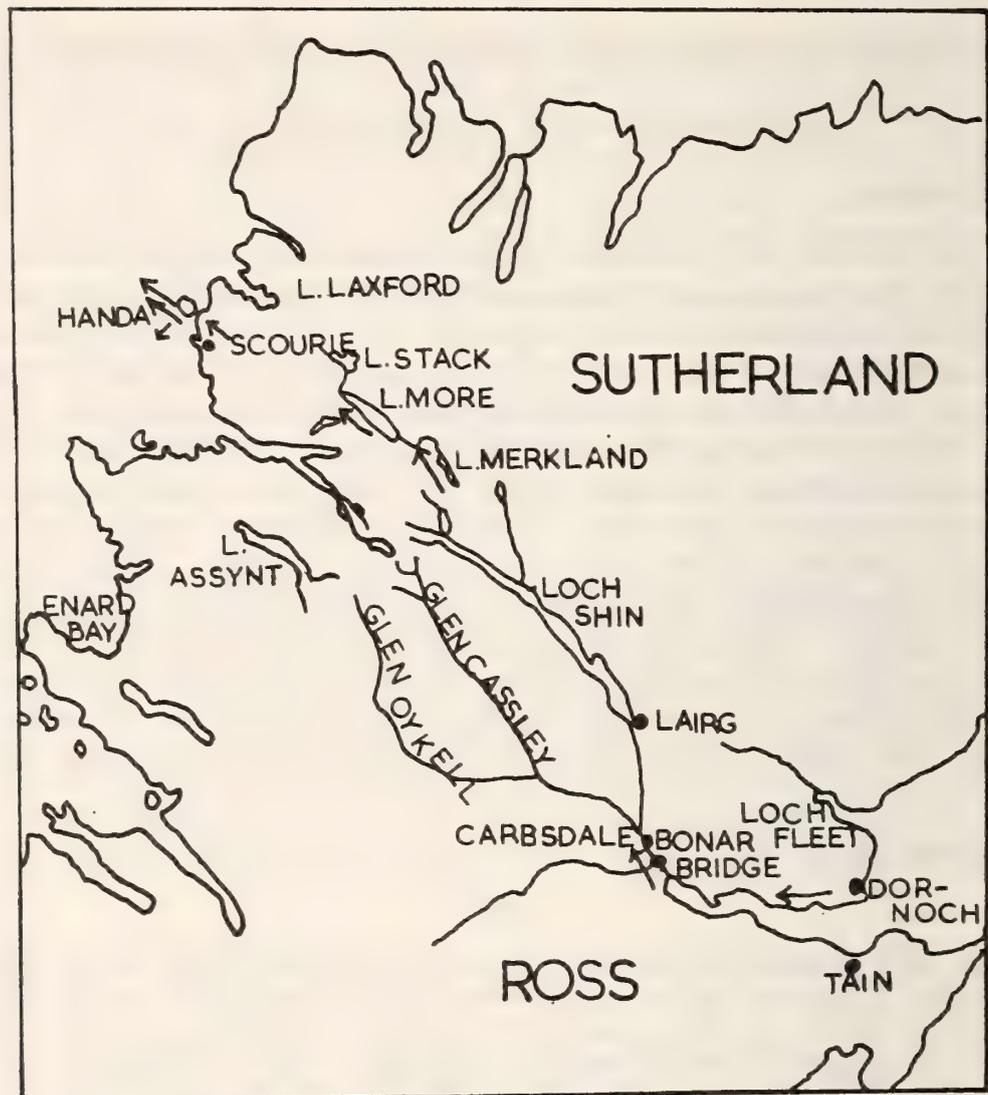


FIG. 1. Spring flight-line of grey geese (shown by arrows) as observed in the Kyle of Sutherland in 1953 and 1957.

winds, from low pressure systems to the north of the British Isles, prevailed until the 17th, when a ridge of high pressure moved northwards into the Iceland sea-area, expanding next day to form an offshoot of the Azores anticyclone which embraced the whole of Scotland, bringing calms and light breezes which lasted until the high retreated eastwards on the 23rd.

There was an unusual influx of Barnacle Geese in 1953 at Fair Isle, south of Shetland, where the species is extremely scarce in spring. A party of 10 arrived on 25th April in westerly weather, the cyclonic conditions continuing until the first days of May. There was some improvement as a high developed over England on 2nd-3rd May, intensifying on the 5th, but maintaining a moderate NW wind at Fair Isle. The Barnacles increased to 25 on the 5th-6th and 14 remained on the 7th; but these had gone by next day with the weather anticyclonic in type and the wind light easterly over the Atlantic.

1954

The primary object of a visit to the Butt of Lewis by R. W. J. Smith and A. Walker (1955), between 24th April and 7th May 1954, was to learn to what extent northern Lewis is used as a 'staging-post' by

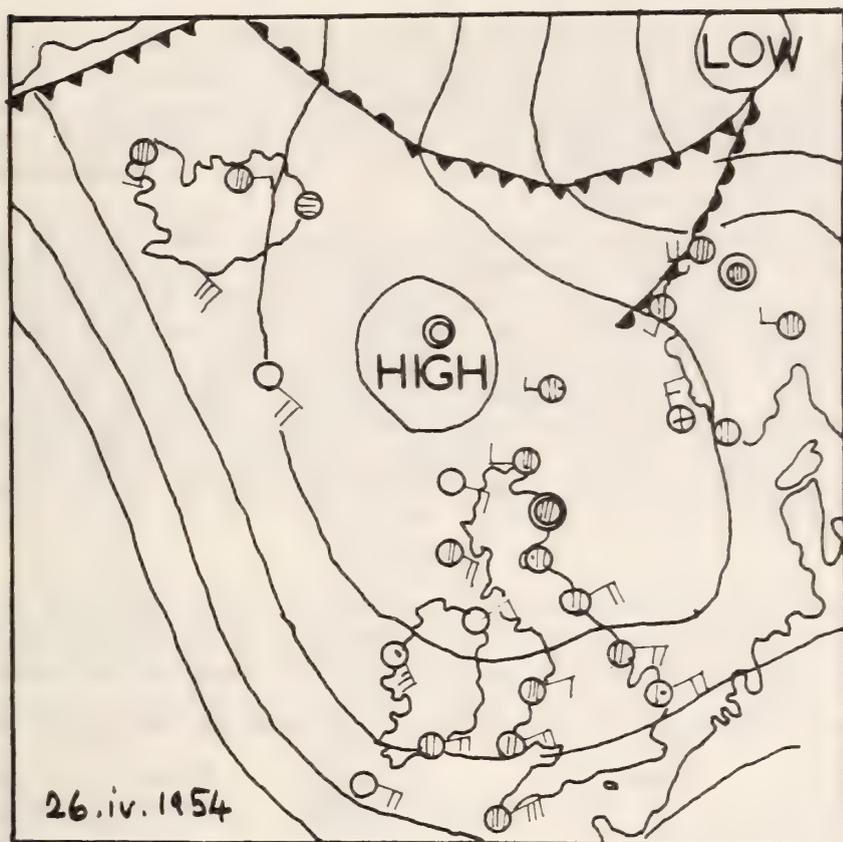


FIG. 2. Goose departures from Butt of Lewis in polar anticyclonic conditions (0600 hrs chart, 26th April 1954).

geese and other birds undertaking a spring journey to Iceland and Greenland. They were too late to see the main goose passage; they had several reports of flocks going northwards during the week preceding their arrival, and the wintering Barnacles were said to have left at the beginning of this period.

During this week there had been an outbreak of polar air into the northern North Sea and Scotland from an Icelandic polar high, bringing a steady SE wind at moderate strength to western Scotland and the Hebrides. A flock of Pink-footed Geese was seen flying northwards at Barvas late on the 25th. The observers' first full day, the 26th, was the last of the anticyclonic spell, and four skeins of 'grey geese', totalling 241 birds, passed Barvas between 1620 and 1820 hrs, with an easterly wind and the prospect of a good airstream all the way to their presumed destination (fig. 2). When low pressure invaded the area on the 27th the passage dwindled, the only big flock, of 110, refusing to face the sea-crossing and settling on the sea at the Butt. Next day a flock of 24, arriving at Barvas just after midday, behaved similarly.

1955

St Clair, Usher and Gardner-Medwin (1956) continued this work, camping close to the Butt of Lewis Lighthouse, but also travelling down the coasts as far as Cellar Head on the east and Aird Dell on the west, between 15th and 25th April 1955. Several of the Grey Lag Geese observed were thought to be local birds, but other grey geese were restless and were doubtless migrants.

The observers arrived during a spell of anticyclonic weather, which had then lasted for several days and continued till the 20th, with calm or light variable airs over Scotland and a south to SE airstream across

the Atlantic between the British Isles and Iceland. By the 18th, when the first geese were seen, the high pressure embraced Britain and southern Norway and the weather was calm and clear in western Scotland. At Cellar Head a flight came in from the southwest and turned northwards towards the Butt, while near Barvas 10 unidentified geese were also seen flying north.

The Atlantic airstream was more SW on the 19th, and it continued to veer to become light to moderate NW. Two birds flew NNW early, and two came down to rest at a pond at 1600 hrs. A skein of 10 Pink-footed Geese started out to sea to NW at 1700 hrs but gave up and returned. On the 20th movement was still going on among the isles, as John Furse saw 25 Greylags and two Whooper Swans passing Coll, but the only arrivals noted at the Butt were 10 Greylags which landed there at dusk. After this date low pressure between Iceland and Britain brought a westerly airstream and changeable weather to the Outer Hebrides and no further movement was seen.

1957

Marr, Rees and Wiseman (1958) arrived in Lewis on 14th April 1957 and concentrated on the east coast and the Butt, where they stayed from late on the 20th to the 26th. During the same period observations

Table 2. Goose migration, Kyle of Sutherland, late April 1957

Date (April)	Locality	Total flocks	Total geese	Flight direction
22nd	Handa	1	3	SW
	Scourie	1	40	NW
23rd	Scourie	1	150	NW
24th	Loch More	1	20	NW
25th	Loch Merkland	1	250	NNW
	Scourie	1	1	NW
26th	Scourie	1	1	NW

were also made by Niall Campbell near Scourie (table 2 and fig. 1), and by J. Morton Boyd and the writer at St Kilda. Most of the geese identified at the Butt were Pink-footed, and, although migration was witnessed at all times of the day, there were decided early morning 'rushes' on the 22nd and the 24th. These observations are summarised in table 3.

The weather in the Outer Hebrides was dominated by westerly winds, reaching gale force at times and bringing frequent rain, until 21st April; but a light southerly breeze on the 22nd was associated with a ridge over north Scotland from a Scandinavian high as frontal disturbances passed away. This was a big day of goose emigration at the Butt, a total of 438 grey geese passing on a line SE-NW, for the most part well clear of the land. A Grey Lag Goose, six Whooper Swans, and a number of waders were also seen departing northwards. The British Isles then became involved in a ridge of high pressure spreading from northern Europe, and on the 24th a total of 228 Pink-footed and 139 unidentified grey geese took a NW direction (fig. 3). A dense sea-fog rolled in at the Butt during the morning, otherwise more geese might have been seen.

This was the first day on which geese passed by at St Kilda, with more following on the 25th as the high moved farther west, while emigration continued in Lewis and the neighbourhood of Scourie at least until the following day, when observations terminated. The St Kilda flocks have been incorporated in table 3.

Table 3. Goose migration, northern Lewis and St Kilda, late April 1957

Date (April)	Locality	Species	Total flocks	Total geese	Flight direction	Pressure (millibars)
17th	Tiumpan Head	"Grey"	1	7	N	1012
20th	Tolsta Head	"Grey"	1	17	NNW	1015
21st	The Butt	Pink-footed	1	21	S	1015
22nd	The Butt	"Grey"	4	438	NW	1023
	Loch Stiapavat	Greylag	1	1	N	
	Loch Stiapavat	Whooper Swan	1	6	N	
23rd	The Butt	Pink-footed	2	57	N	1029
	The Butt	Greylag	1	1	—	
	The Butt	"Grey"	1	12	NW	
24th	The Butt	Pink-footed	4	228	NW	1037
	The Butt	"Grey"	3	139	NW	
	Port of Ness	"Grey"	1	10	N	
	Port of Ness	Pink-footed	1	45	NW	
	Loch Stiapavat	"Grey"	1	150	NW	
	St Kilda	"Grey"	1	26	N	
	St Kilda	Barnacle	1	26	N	
25th	St Kilda	Pink-footed	1	110	NNW	1041
	St Kilda	"Grey"	1	70	N	
	The Butt	Pink-footed	1	55	NW	
	Stornoway	"Grey"	1	200	NW	

1958

Boyd was at St Kilda in April 1958, but again only a few lots of geese were seen, and these were late. On the 30th the islands lay on the western side of an extensive European high, with the wind southerly; a skein of 45 grey geese passed by and a number of 'northwest' waders were present. The weather deteriorated as a cold front moved south through Scotland, bringing poor visibility and a northerly airstream, and on 2nd May a flock of 32 Barnacles flew out to sea when disturbed at the northwestern headland of Gob na h'Airde, but soon returned. They appear to have left under much improved conditions on the 3rd. Cyclonic weather, with east wind and rain at the fronts, seems to have arrested the migration of another group of Barnacles on the 8th-9th; these had gone by the 10th, with anticyclonic weather prevailing to the east.

1959

Marr and Wiseman (Marr *et al.* 1959) returned to Lewis between 18th April and 1st May 1959, in company with J. Reaney and W. H. Truckle. This was a most successful expedition, the party recording more than 2300 geese at the Butt of Lewis alone (table 4).

A major contribution—probably with a bearing on the appearance of Barnacle Geese at St Kilda in the two previous years—was their discovery of an important flyway across the Minch from the direction of Skye, continuing northwestwards through the Sound of Harris. The birds using it appeared to be mainly Barnacles and Greenland White-fronts, while those passing the Butt of Lewis at the same period were predominantly Iceland breeders, Pink-footed and Grey Lag Geese, al-

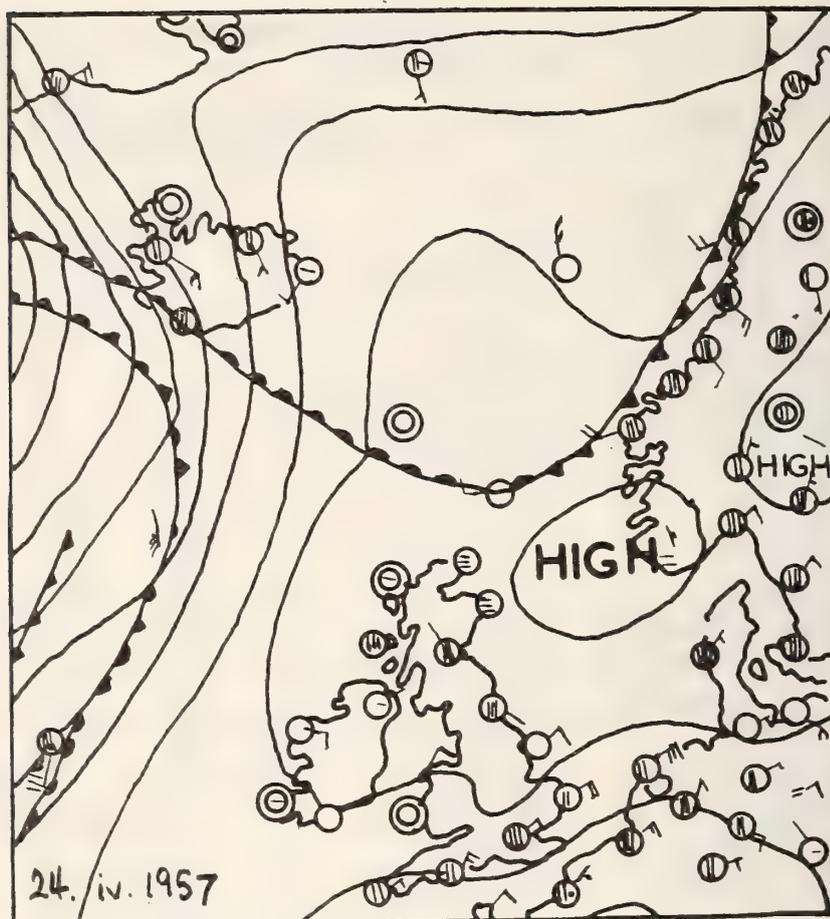


FIG. 3. Goose departures from Butt of Lewis with a Scandinavian polar high centred over the North Sea (0600 hrs chart, 24th April 1957).

though some Barnacles were also seen. The observations are summarised in table 4. It will be seen that departures in NW and NNW directions were general from 22nd to 24th April, but less marked on the 25th and the 27th. No geese were seen on the 26th (but this was the only day in the spring of 1959 when geese were sighted at St Kilda), while from the 28th to the 30th there was a general reluctance on the part of the flocks to continue migration out to sea.

The ridge of a Greenland anticyclone moved south to Scotland on the 18th, and high pressure was centred on the Faeroe Islands next day with calm weather prevailing over most of Scotland, and a light SE wind in the Hebrides. No migration was observed. An occluded front lay between the Outer Hebrides and southern Iceland that night and on the 20th, bringing rain and heavy overcast skies. Visibility continued poor on the 21st with a westerly breeze, the centre of the high having moved to St George's Channel. It had moved farther east by the 22nd, when goose passage really got under way, there being a light southerly breeze in the Outer Isles, with the wind veering but continuing light over the Atlantic. Similar conditions held on the 23rd, but on the 24th the wind became cyclonic SE with the approach towards Iceland of an Atlantic depression, and it veered to SW next day.

One centre of this depression came over Ireland on the 25th, and a strong NE wind prevailed in the Hebrides and northern Scotland; after the wind-change to SW, movement was much reduced and no passage was seen on the 26th. The depression travelled across Scotland to Shetland and beyond, the wind in the Outer Hebrides falling to light NW in col weather on the 27th, and becoming NE with some rain next

Table 4. Goose migration, northern Lewis and Sound of Harris, late April - 1st May 1959

Date (April- May)	Locality	Species	Total flocks	Total geese	Flight direction	Pressure (millibars)
19th	near Stornoway	"Grey"	1	180	NNW	1026
22nd	Sound of Harris	[Greylag]	1	43	NW	1021
	Sound of Harris	White-fronted	2	191	NW	
	Sound of Harris	Barnacle	4	174	NW	
	Sound of Harris	"Grey"	1	19	NW	
23rd	The Butt	Pink-footed	1	22	NNW	1017
	The Butt	Barnacle	2	9	NNW	
	The Butt	"Grey"	7	260	NNW	
	The Butt	Whooper Swan	1	3	N	
24th	The Butt	"Grey"	1	70	W	1005
	The Butt	"Grey"	1	100	NW	
25th	The Butt	"Grey"	2	10	S	998
	Loch Stiapavat	"Grey"	1	40	NW	
27th	The Butt	Pink-footed	1	190	NW	996
28th	The Butt	Pink-footed	1	4	—	997
	Dell	"Grey"	1	220	NW	
	Loch Stiapavat	"Grey"	1	75	NW	
29th	The Butt	Pink-footed	1	4	S	1009
	The Butt	Pink-footed	1	13	S	
	Dell	Pink-footed	1	105	—	
	Loch Stiapavat	"Grey"	1	16	S	
30th	The Butt	Pink-footed	4	485	WNW	1015
	The Butt	Pink-footed	2	225	S	
	The Butt	"Grey"	4	315	NW	
1st	The Butt	"Grey"	1	40	S	1014
	The Butt	"Grey"	1	8	NW	
	The Butt	"Grey"	1	30	—	

Note. Flocks on the ground are shown by a dash — in column six. The behaviour of flocks on the 29th-30th is described in the text.

day. The biggest flock of geese on this day refused to put out to sea.

Another low pressure centre moved across the country to Shetland on the 29th, giving a moderate north to NE wind in the Hebrides, and a light westerly breeze with clear skies in central and southern Scotland. Migrant flocks of geese were still loath to put to sea. The improvement continued during the night of the 29th/30th as a ridge spread northeast from the Azores high, and although south and east Scotland enjoyed the effects of this better weather throughout the 30th the northern part of the Outer Hebrides did not, conditions deteriorating rapidly as a cold front came in from the west, bringing strong SW wind and rain before midday (fig. 4).

The events of the 30th at the Butt of Lewis can be summarised as follows. A total of about 315 unidentified grey geese passed by, up to midday, in four flocks which all came from SE and flew out to sea between west and NNW. Up to 1145 hrs a total of 710 geese identified 4*

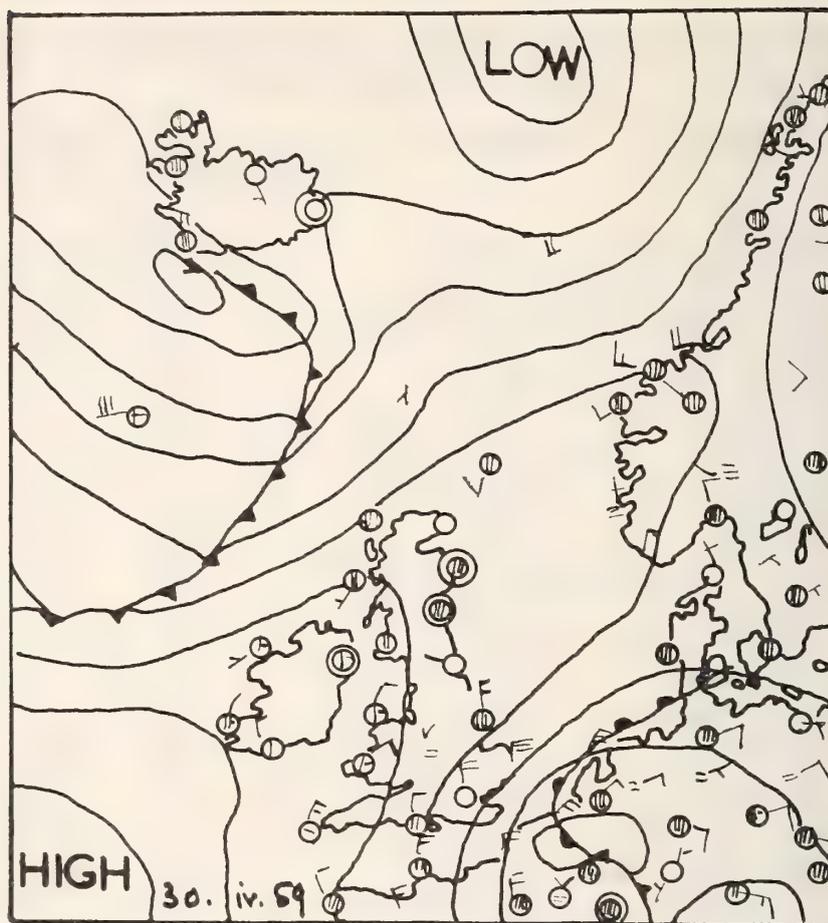


FIG. 4. Goose departures in the ridge of an Azores high (0600 hrs chart, 30th April 1959). Later the same day many geese returned to land, having encountered the cold front advancing SE from the Icelandic low (see text).

Pink-footed passed by in six skeins; of these, some 265 came from SE and flew to the west, about 220 flew from SE and out to sea to WNW, a flock of 140 arrived from SE and turned southwards along the west coast, and a flock of 85 approached the Butt from SE and abruptly changed course to SW. Between 1100 and 1400 hrs a total of 92 Pink-footed Geese came back in from the sea north of the Butt in four parties and flew inland; all appeared to be tired, and the flocks were straggling.

1960

At my request Archibald MacEachern, Principal Keeper at the Butt of Lewis Lighthouse, very kindly made observations on the movements of geese in the spring of 1960. Mr Atkins of the Decca Navigation Station cooperated, counting a number of flocks unsighted from the Lighthouse. The first geese were seen on 18th February, when 9 Greylags passed in a northerly direction (wind SE, force 4); while other groups were observed on 27th March at 1000 hrs, when over 30 Pink-footed Geese flew north (wind east, force 2), and on 2nd April at 0600 hrs, when two Greenland Whitefronts flew by in a southerly direction (wind east, force 6).

Passage of Pink-footed and Grey Lag Geese was steady from 14th April, becoming strong on the 16th, then declining somewhat, and reaching a peak on the 27th-28th (table 5). An interesting feature was a southerly movement of Greylags, usually in small parties (but over 90 on each of two occasions) from late on 30th April to late on 2nd May.

Table 5. Goose migration at the Butt of Lewis, April-May 1960

Date (April -May)	Species if other than "grey"	Total flocks	Total geese	Flight direction	Pressure (millibars)
14th		1	19	N	999
15th		1	10	N	1018
16th		3	154	N	1028
	Pink-footed	1	200+	N	
18th	G. White-fronted	1	2	S	1027
	Pink-footed	1	29	N	
		1	39	N	
20th		1	60	N	1024
21st		1	26	N	1028
	G. White-fronted	1	3	—	
22nd		1	6	S	1026
23rd		1	47	N	1024
24th		1	8	S	1023
25th	Pink-footed	1	300	N	1025
26th	Pink-footed	1	60	N	1027
27th	Pink-footed	3	426	N	1032
		4	800+	N	
28th		4	527	N	1031
	Pink-footed	1	100	N	
29th		1	65	N	1028
30th		1	12	S	1023
	Pink-footed	1	70	N	
1st		1	12	—	1024
2nd		4	195+	S	1017
	Pink-footed	1	151	N	
3rd	Pink-footed	1	36	—	1012
	Barnacle	1	1	—	

Note. Flocks on the ground are shown by a dash — in column five. Atmospheric pressure is the mean of the 0600 and 1800 hrs readings at Stornoway, Lewis, as published in *The Daily Weather Report*.

From 12th to 24th April were days of cyclonic weather with a westerly wind, but an improvement began on the 15th with high pressure coming down from Iceland and rapidly enveloping the whole of Scotland. With this anticyclone firmly established the 16th was a good day for goose passage, there being a light northerly breeze over the sea between Scotland and Iceland. The high moved away and the 17th was again cyclonic; and although Scotland was within a new high pressure area from midnight, the Outer Isles remained exposed to frontal conditions coming in from the Atlantic. The 18th saw some improvement, though a warm front crossing Scotland brought morning fog. Cold fronts with westerly winds again affected the Hebrides and northern Scotland on the 20th, and on the 21st this region lay on the northeast periphery of an Atlantic high, with the wind still westerly. These conditions held until late on the 25th, when, with the centre of the high close to Northern Ireland, the wind fell away to a light breeze, and

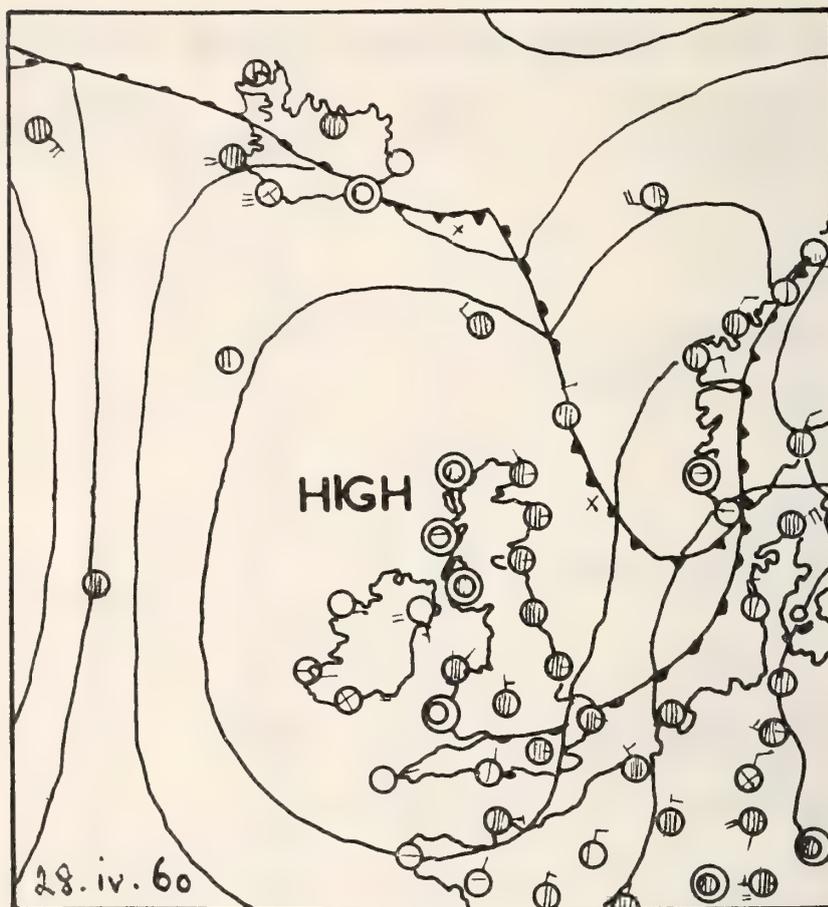


FIG. 5. Peak of goose emigration from Butt of Lewis, 27th-28th April 1960, in an anticyclone which, though polar in origin, had moved to west and southwest of Britain during the previous week (0600 hrs chart, 28th April 1960).

finally to calm. A resurgence of goose passage began and continued during the remaining days of the period, which were markedly anticyclonic with only very light airs (fig. 5). Low pressure came in from the Atlantic on 3rd May and migration practically ceased.

1962

K. D. Smith (*in litt.*) saw an impressive passage of Pink-footed Geese across the Highlands as he was driving to Gilmerton, Perthshire, on the evening of 13th April 1962. Many may have passed before his arrival, but between 1745 and 1805 hrs he counted seven skeins totalling over 300 birds, flying on a line ESE-WNW. It was a "glorious, sunny, windless day." An enormous high pressure system extended from Scotland to Jan Mayen, so that the birds would go out to sea (if they did so) with a following wind all the way to Iceland on the western flank of the high.

Similar travel conditions prevailed next day, the 14th, when 45 grey geese and 12 Pink-footed Geese passed St Kilda. No further passage was reported in mid month, but with a new high developing over England on the 25th and the wind SE in the Outer Hebrides and over the Atlantic, some grey geese and 17 Pink-footed passed by St Kilda. They were followed by 11 grey and 27 Barnacle Geese on the 27th, 12 Grey-lags and 41 Barnacles on the 28th, 12 grey geese on the 29th, 20 on the 30th, and 50 grey plus two Grey Lag Geese on 1st May. This unprecedentedly strong passage for St Kilda took place with settled anticyclonic

weather over the whole northeast sector of the Atlantic Ocean. Also on the 27th, K. D. Smith reported a northwards passage of about 100 grey geese at Glenelg, west Inverness-shire.

Discussion

Migration routes

The observations of King's and Campbell's parties provide clear evidence of a spring flyway across northern Scotland, from the Kyle of Sutherland in a northwesterly direction over Lochs Shin, Merkland and More, passing out to sea in the neighbourhood of Scourie (fig. 1). As Campbell points out, if this flight-line is projected across the northeast Atlantic Ocean then it passes the Butt of Lewis and continues to Iceland, with the east Greenland coast beyond. Flocks of geese are known to gather regularly in fields on the south side of the Dornoch Firth in spring, at the entrance to the Kyle of Sutherland (I. D. Pennie, pers. comm.); these may have travelled north through eastern Scotland, but their immediate provenance is not known.

Much of the emigration must take place on the western side of the country, where there are wintering-grounds—of Barnacles and Greenland Whitefronts especially—south through the Hebrides to Galloway and the Solway. Flocks approach Canna from the south in spring and are seen passing through the gap of Tarbert and moving on towards Skye (J. L. Campbell, pers. comm.). Marr and his party observed geese approaching the Sound of Harris from the direction of Skye and continuing along a northwesterly line, which would take them somewhat to the north of St Kilda. These were mainly Barnacles and Greenland Whitefronts (though some Grey Lag Geese appear to have been involved), and for most of these birds east Greenland must be the end-point of the migration. The various observers at the Butt of Lewis, however, have recorded flocks travelling north along the east coast of Lewis before turning to northwest on passing the Butt; these were mainly Pink-footed and Grey Lag Geese and presumably Icelandic breeders. There is thus a strong indication that the migration routes of the Greenland and Iceland stocks diverge on reaching the Outer Hebrides.

It is obvious from the paucity of records that geese of any kind are scarce in spring at Fair Isle, lying between Orkney and Shetland, and that there is no direct route to the countries of the northwest that incorporates these islands. There is a similar scarcity in Shetland (Venables & Venables 1955) and the Faeroe Islands. Apart from the influx of 1953, in weather initially cyclonic, the only other recent records of Barnacle Geese for this well-watched island are one or two in 1961. Small parties of Greylags occur occasionally in late April and early May, and a few Pink-footed Geese

have been observed in most springs since 1955 (Davis 1965). On the other hand, there is a regular autumn passage of all these species through Fair Isle, though it is smaller than that observed in the Hebrides.

At St Kilda the spring passage is probably more regular, as would be expected, since it lies close to a northwest line from the Sound of Harris, and it may be that more passage goes by the outer isle of Boreray than can be seen from the enclosed Village Bay. Flocks may like to keep the archipelago within reach as they approach the uncertainties of the open sea-crossing, but they seldom appear to put down unless the weather seems unsuitable for onward journeying.

The meteorological environment

The observations of the several parties that have reported on spring goose emigration in Sutherland and the Outer Hebrides leave no doubt that the movement reaches its greatest intensity in anticyclonic weather, and that it is weak or even inhibited under cyclonic conditions. Taking the three years 1957, 1959 and 1960, for which we have a fairly full series of observations from Lewis, it can be shown that activity increases with rising atmospheric pressure (table 6).

There are a number of attributes of an anticyclone or a high pressure ridge which might, separately or cumulatively, provide the external stimulus to migrate for birds which had attained a suitable physiological state. Anticyclones or highs are regions of subsidence, the descending air tending to dissipate cloud and so increase the sunshine, resulting (in spring) in clear skies over a vast area and a rise in daytime temperatures. Usually the gradient wind is slight, and this and the good visibility will greatly assist navigation, and will be especially important where a long overseas journey is involved. Conversely, cyclonic weather brings heavy cloud associated with the vigorous frontal developments, in the region of which prolonged rain or snow may occur; and, owing to the steep pressure gradient within the system, strong winds, which veer markedly and strengthen in the frontal regions, can offer an extreme hazard to an oriented migration across the sea.

Anticyclonic conditions may be relatively local if the high is of small extent, but more usually they are widespread, and they may last for several days. The situation which would provide the optimum travelling conditions for the geese would be one in which good visibility was combined with a light following wind all the way to Greenland or Iceland. This situation would be most likely to arise if an outbreak of polar air were to sweep southwards to Scotland as a ridge from the Greenland-Iceland region, as happened in April

1954, 1960 and 1962 (fig. 2). Expansion across the North Sea to Scotland of a Scandinavian polar anticyclone might also assist the migrants over much of their journey, as in April 1957 (fig. 3). The late anticyclone of 1962, from 25th to 30th April, was derived from a polar air-mass sweeping eastwards across the Atlantic Ocean.

Not all the anticyclonic developments over Scotland at this season provide optimum conditions for the journey, however. If the high pressure originates as a ridge of the Azores high, lying to the southwest of the British Isles, there is usually a complementary westerly airstream between the northern periphery of the anticyclone and low pressure dominating the Greenland-Iceland region beyond (fig. 4). This situation, while affording good departure conditions, might bring rapidly worsening weather as the journey progresses, a strengthening beam wind introducing the risk of a drift off course.

Since the geese cannot recognise the source of the air-mass, but only its obvious attributes of visibility, wind-strength and direction etc., there are clearly some risks in leaving the protection of the land in anticyclonic weather, though these are less than in attempting to depart under cyclonic conditions. The polar anticyclonic situation is the most likely one over Scotland and the adjacent seas in early and mid April, before the Azores high has reached its full summer development, and in most cases an anticyclone originating to the north would give the birds a following wind on their journey. The strengthening of the Azores high at the end of the month and in early May introduces greater hazards for late-staying birds, and the earlier in spring that the geese are able to emigrate, the better are their chances of an unimpeded flight.

Observations at the Butt of Lewis show that an Azores ridge may stimulate departure from mainland Scotland on the first leg of the journey as readily as a polar high, but that many geese, arriving at this last staging-post, will refuse to put out to sea if there are signs of a deterioration of the weather beyond. Should they elect to leave, and later meet with adverse weather, as on 29th-30th April 1959 (fig. 4), many—perhaps most—will return to land. In all likelihood many more do so than can be observed from any given point, since it appears that the flocks lose their cohesion and straggle back low over the water in small, scattered groups. At such times, birds which have set out may take shelter at St Kilda and the Flannans, or they may sustain a drift to Fair Isle, Shetland and the Faeroe Islands on the westerly winds. Some flocks arriving at the Butt, and being wary of the conditions beyond, have been seen to settle on the sea, or continue their flight in a southerly direction along the west coast of

Table 6. Goose 'departures' and 'returns' (number of birds) in relation to atmospheric pressure (millibars)

	990-999		1000-1009		1010-1019		1020-1029		Above 1029	
	Dep.	Ret.	Dep.	Ret.	Dep.	Ret.	Dep.	Ret.	Dep.	Ret.
1957	—	—	—	—	24	21	514	1	1059	—
1959	525	14	170	138	1102	387	537	70	—	—
1960	19	—	—	—	161	232	1050	43	1853	—
Totals	544	14	170	138	1287	640	2101	114	2912	—
Percentage of total 'departures'	7.8		2.4		18.3		30.0		41.5	
Percentage 'returns' in each category	2.6		81.2		49.7		5.4		0	

Lewis, as in 1954, 1955 and 1959.

The increasing incidence of such behaviour as the weather worsens can be seen from table 6, which shows a relatively lower proportion of 'returns' to 'departures' with rising atmospheric pressure, i.e. with an increasingly anticyclonic type of situation. 'Departures' include all birds seen to fly to sea in a direction between west and north, while 'returns' embraces those which alighted, or turned south on reaching the Butt, or straggled in from the sea.

Temperature

Since variations in temperature have often been held to be a major stimulus to migratory activity, this has been examined in relation to the spring emigrations of 1957, 1959 and 1960. A summation was made of the dry bulb readings (degrees Fahrenheit) at six stations reporting to the *Daily Weather Report*, and the average values were found for 0600 and 1800 hrs. The stations selected were those close to the main winter haunts of geese in Scotland, namely Renfrew, Leuchars (Fife), Dyce (Aberdeenshire), Tiree (Inner Hebrides), Benbecula and Stornoway (Outer Hebrides).

In 1957 overnight falls in temperature were most marked between 21st and 24th April, corresponding with the biggest movements of geese. The greatest values were losses of 10°-11° overnight between the 22nd and 24th, followed by 7° the following night. There was heavy goose passage each morning in this period. There were at the same time the most pronounced daytime gains, steepest on the 23rd and 24th with 9° and 11° respectively. On the 21st, however, the day preceding the first big goose passage at the Butt, the rise was the lowest recorded; nor was the overnight drop so well marked.

The position in 1959 was complicated by the fact that the onset of migration on the 19th coincided with the entry into Scotland of a ridge of the Greenland high, accompanied by a sharp fall in temperature; and this ridge was quickly replaced by a warm, moist air-mass from the Azores high bringing a rise in temperature, which reached 50°F on the 22nd, the first big day of goose passage. Renewed activity from the 27th to the 30th was associated with a slight fall in temperature.

The initial phase in 1960, involving only a small number of birds, followed an overnight rise; but the first strong movement, on the 16th, succeeded a big overnight fall of 13½° to 34°F. The next big passage, on the 25th, was associated with the smallest overnight change in the period, only 3°. From the 26th to the 30th the fall increased; the largest number of geese passed on the 27th after an 8° drop to 43°F, and the next largest number went on the following day after a 9½° fall.

There is no evidence in these data of any marked response to temperature fluctuations as such; indeed, any apparent association (as with a steep overnight fall) might be purely fortuitous and in reality a reaction to the anticyclonic situation as a whole. Temperature fluctuations may show wide variation, according to whether the air-mass has a polar or a sub-tropical source. During a polar development, when the cold air has travelled over a relatively cold ocean, one would expect the greatest temperature extremes, owing to the warming influence of the sun by day, and the increased radiation, due to the lack of cloud-cover, at night. If the high is of sub-tropical origin the air-mass on arrival will be warm and moist and the day and night disparity in temperature less pronounced. We have seen that, although this is not the optimal situation for overseas emigration, the geese are nevertheless strongly activated by a high of sub-tropical origin, and they presumably respond to features other than temperature changes.

The migration period

The peak of emigration appears to be during the last ten days of April, and of nearly 10,000 geese recorded in this paper, 80 per cent were moving in this period. In some years, small numbers may move in mid month, as in 1960 (16th April) and 1962 (13th April). There is a paucity of observations from this early period, and it may be that a relatively small proportion of the wintering flocks are physiologically prepared for the return journey by mid month, and respond if suitable weather permits.

Ideally, since the polar anticyclonic development affords

the safest journey, more ought to go with the mid-April highs, and one can only conclude that some factor militates against an early departure in most years. It is difficult to explore this aspect of the problem without a full series of data covering most of April, over a number of years, not only from passage points but also from winter haunts of populations known to breed in Greenland and Iceland.

Donald Watson (*in litt.*) has made observations over several years on the departure dates of one northwestern goose population, the wintering Greenland Whitefronts in the Ken valley, Kirkcudbrightshire. His data are incomplete, since no systematic watch has been possible, but they indicate some variation in departure dates from one year to another. Thus, despite intensive search, no geese were seen in the Loch Ken area after 23rd April 1959, or after 25th April 1960, whereas in 1958 there was still a considerable number on the 28th and the 29th and the last seem to have left on the 30th. The spring of 1957 seems to have been an early one, with big departures on the 19th-20th (at the Butt, the peak of Grey Lag and Pink-footed Goose passage was from the 22nd to the 25th). There were Greylag departures from Kirkcudbrightshire on 18th April 1959 (passage at the Butt was from the 19th) and on 16th April 1960 (the 16th was a good day at the Butt), with at least some Whitefronts leaving that year between then and the 21st. It would seem that 1957, 1959 and 1960 were in all probability 'early' or at least fairly normal years, but that 1958 was 'late.'

Watson suggests (*in litt.*) that good feeding conditions during the month or so prior to departure may be important, and that a cold or backward spring (with relatively little growth of new grass) may delay migration. He also comments that there is usually a high proportion of young birds in the late flocks, and that these might reasonably be expected to be the least robust individuals and the worst sufferers in a backward spring.

If we concede that fitness to undertake a long overseas flight may well depend upon the availability of good grazing during the early spring, then the departure pattern is as likely to be governed by short-term climatic conditions as by current weather developments in mid and late April. The best way of testing this view would be to examine the departure pattern in relation to the accumulated temperature records for the first quarter of the year. This parameter measures both the accumulated degrees of warmth, and the degrees of cold, above and below 42°F (6°C), which is the accepted minimum temperature for the active growth of grasses and similar vegetation. The Meteorological Office (Scotland) kindly supplied me with figures computed from maximum and

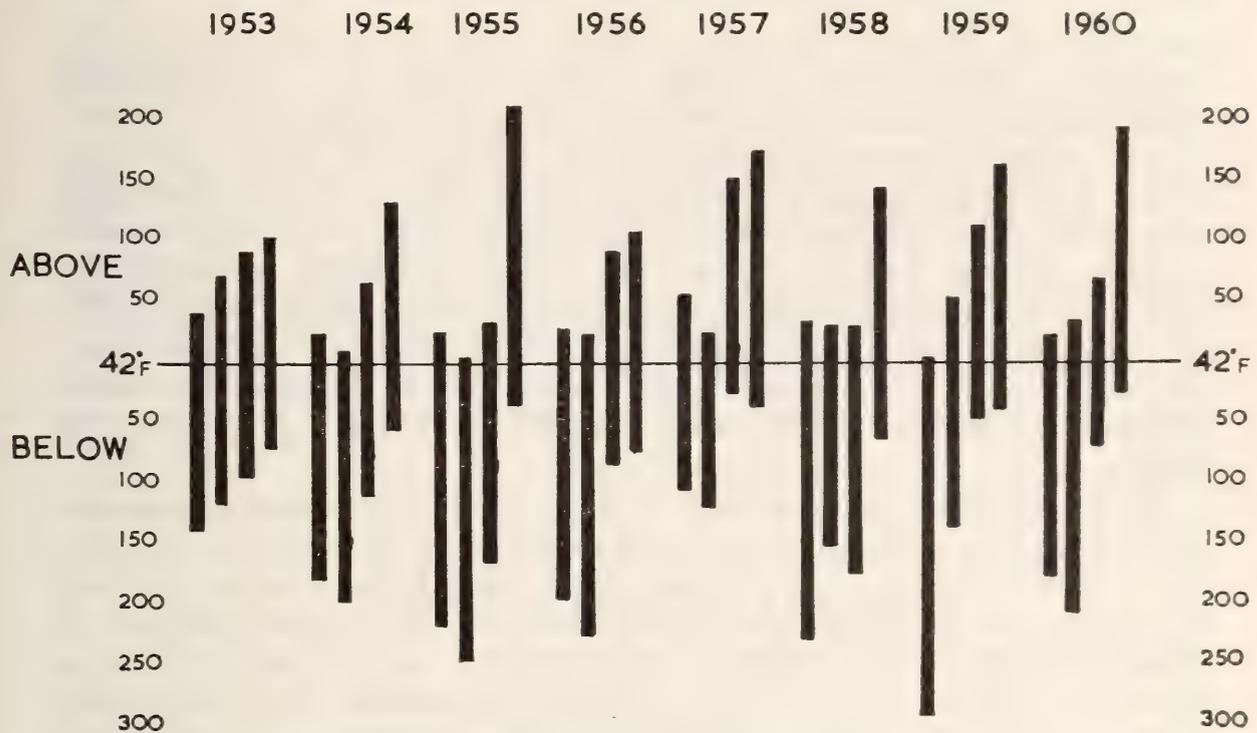


FIG. 6. Accumulated temperatures (day-degrees F) above and below 42°F, for the months January to April inclusive, 1953-60, from observations at two stations in Dumfriesshire.

minimum temperature readings obtained at two sites in Dumfriesshire (Crichton Royal Hospital near Dumfries, and Glenlee Power Station near New Galloway), and in fig. 6 the averages from the two sites are plotted as accumulated day-degrees above and below 42°F for the months of January to April inclusive.

The best March gain is shown by 1957; nor was February particularly cold that year. This was an 'early' goose year, with departures from Loch Ken on 19th-20th and peak passage at the Butt from 22nd to 25th. March was less warm, but February milder than in 1957, in 1959, when all the geese were away from Loch Ken by the 23rd and there was continuous passage past the Butt from the 19th (although the biggest day was the last of the month). It should be added, however, that this was a spring with very weak anticyclonic development (see table 6), and this fact may have contributed to a protracted emigration. In 1960 there was equality between accumulated warmth and cold during March, following a colder February than in the other years; departures from Loch Ken appear to have been later than in 1957 and 1959, and the main passage at the Butt was from 25th to 28th, continuing into May.

The coldest March, after a cold February, was in 1958, but unfortunately goose departure data are meagre; however, the strength of the passage at St Kilda in the first week of May, coupled with the fact that birds were still at Loch Ken at

the end of April, indicates a 'late' year. The spring of 1955 seems to have been as cold, with almost no accumulated warmth in February and very little gain in March; no departures were observed at Loch Ken before the 20th, and few geese took advantage of anticyclonic weather during the third week of April to leave from the Outer Isles. In view of the steady accumulation of warmth from January through to April it is not surprising that goose movements were early in 1953, but there is no obvious reason why 1954 should also have been an early year, with departures from Loch Ken between 16th and 18th, since conditions were colder than in 1960.

The best that can be said is that there is a broad correlation between this climatic parameter and the departure pattern of the flocks, and it must be stressed that the migration data are too incomplete to warrant any firm conclusions. A resolution of this problem must await a longer series of systematic observations from wintering grounds (such as Loch Ken and Loch Leven) coupled with watches at principal passage points (such as the Sound of Harris and Butt of Lewis).

Acknowledgments

I am grateful to all those observers, named in the text, whose notes and records I have used in this study; to Principal Lightkeeper Archibald MacEachern for his keen interest in the work in 1960; to Donald Watson for much interesting and helpful discussion of the subject; and to Dr R. W. Gloyne of the Meteorological Office (Scotland) for assistance with climatic data.

Summary

Observations on goose emigration at principal passage points are summarised, and their meteorological background examined, for most years between 1953 and 1962.

A migration 'flyway' crosses northern Scotland from the Kyle of Sutherland northwestwards over Lochs Shin, Merkland and More; while in the Outer Hebrides divergent routes pass through the Sound of Harris (Greenland White-fronted and Barnacle Geese), and off the Butt of Lewis (Icelandic Pink-footed and Grey Lag Geese).

Goose emigration is stimulated by anticyclonic developments and the passage reaches its peak at such times; cyclonic weather over the Atlantic may cause the geese to return to land, and inhibits migration in flocks about to put out to sea. The main characteristics (and their benefits to the migrant geese) of highs of different origin are discussed.

Migration usually begins in the third week but has its peak in the fourth week of April. There is a suggestion that emigration may be delayed in cold springs because of poor feeding conditions. The accumulated temperature records for one wintering area (Dumfries-New Gallo-way) are examined in relation to goose departures and show a broad agreement, the migration being later in backward springs. Systematic observations on this relationship would be worthwhile.

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Breeding birds of Orkney

E. BALFOUR

(Plates 5-6)

Introduction

Twenty-five years have elapsed since David Lack carried out a survey of the breeding birds of Orkney (Lack 1942-43), and since then changes have occurred in the status of some species. I have briefly summarised Lack's list of breeding birds, and where changes have occurred between 1941 and 1967 I have commented upon them.

I have included Sule Stack and Sule Skerry in the survey, though Lack discounted them as part of the Orkney archipelago and did not study their bird populations. Sule Skerry lies 35 miles due west of Marwick Head on Mainland and has an area of 35 acres. The Stack lies 4½ miles southwest of the Skerry.

Lack recommended that the next compiler of an Orkney breeding bird list should consult the notes of the late G. T. Arthur. Unfortunately this recorder kept very few notes. He wrote some popular articles for the *Orkney Herald* and a pamphlet (Arthur 1950), reprinted from *Bird Notes* 24: 130-135. He also compiled a plain list of observations, dated 1939, which I have in my possession, to which are added half a dozen extremely brief notes taking it up to 1951.

A. Wood kept few notes, but he delivered some lectures about Orkney birds to the Firth Mutual Improvement Society, one of which was published in 1916.

Environmental changes

Many Orcadians would deny that there has been any noticeable change in their countryside in the last 25 years. However, during the Second World War there were many military

personnel and camps in the country, and since the war there have been some major changes in agricultural practice.

The troops had two effects on the bird population. Firstly, they took to supplementing their rations of poultry eggs by collecting those of the native birds, especially the Lapwing. Secondly, parts of Orkney were made restricted areas and given over for artillery ranges and training grounds. Under these conditions some moorland species thrived and increased in number, the most noticeable increase being in the Hen Harrier population.

The main changes in agriculture over the last 20 years have been the disappearance of the work horse, increased use of machinery, the introduction of silage production, and erection of modern farm buildings. Large tracts of hillground have been ploughed out and reseeded, and many marshes and pools have dried up as a result of draining and ditching programmes. The use of artificial fertilisers and seed dressings seems extensive but chlorinated hydrocarbons are little used except in sheep dips.

There has been a marked increase of willow scrub in some of the damper unfenced commons and moorlands due to the cessation of cattle grazing. This scrub affords suitable habitat for Reed Buntings and Sedge Warblers and if the chance remains in the future this type of scrub could colonise considerable areas of the wetter low-lying moors and meadows.

The Forestry Commission has some experimental conifer plantations on Hoy and these provide fairly extensive cover in two rather desolate valleys.

Gamekeeping ceased at the onset of the war and has never been restored. The human population has also decreased markedly in Orkney over the last 25 years.

Hedgehogs were introduced during the war and are now common on Mainland, Bury and South Ronaldsay. There is also a reference in Buckley & Harvie-Brown (1891) stating that hedgehogs were introduced in 1870. There is some evidence that they take the eggs and young of ground-nesting birds. Conversely, the rabbit population has declined, owing to recurring outbreaks of myxomatosis since the 1950s. Rabbits have disappeared from some of the smaller islands, and this may have some effect on the distribution of some predatory birds and hole-nesters.

A hurricane in January 1952 did much damage to steadings and stackyards and swept away many derelict huts from the abandoned war camps. This probably deprived some Starlings and Blackbirds of nesting sites. Many trees were blown down, including big larches at Binscarth which afforded nesting sites for Long-eared Owls and Sparrowhawks.

An inconspicuous climatic effect has been the recession of the arctic ice since 1900, continuing to 1962. This has resulted in an amelioration of the climate and a general 'warming-up' effect. Since 1940 the weather has been considerably wetter and it is thought that a series of colder winters set in after 1962. Perhaps changes such as these have had an adverse effect on the breeding success of the Red-necked Phalarope and Common Sandpiper, and aided the increase of Stonechats and Sedge Warblers.

Status changes

The clearest increases in breeding populations are those of Red-throated Diver, Hen Harrier, Kestrel, Oystercatcher, Curlew, Great Skua, Arctic Skua, Great Black-backed Gull, Stonechat, Sedge Warbler and Reed Bunting. The birds showing a noticeable decrease are Manx Shearwater, Corn-crake, Coot, Lapwing, Common Sandpiper, Red-necked Phalarope, Lesser Black-backed Gull, Mistle Thrush, Pied Wagtail and Corn Bunting. Other species appear to have decreased (*e.g.* Peregrine, Red Grouse), though the extent of this decrease is not known. The Dipper has not nested since 1941 nor the Common Scoter since 1958.

An additional five species are now recorded as breeding. They are Buzzard, Collared Dove, Fieldfare, Garden Warbler and Tree Sparrow. Records of Greenshank and White Wagtail are now published for the first time.

Three of the species considered doubtful by Buckley & Harvie-Brown (1891), Omond (1925) and Lack (1942-43) have since been confirmed. They are Ring Ouzel, Blackcap and Goldcrest. Two additional species from Lack's list, Scaup and Black-tailed Godwit, have also been substantiated as breeding birds.

Species that in my view should not have been included as regulars in 1941 and the preceding decade are the Sparrowhawk, House Martin and Whinchat. There is also no definite proof of the Water Rail nesting on Orkney now, though this is characteristically a secretive species.

In his paper Lack discounts the Whooper Swan, Golden Eagle, White-tailed Eagle, Ptarmigan and Sand Martin as breeding birds.

Annotated list of breeding birds of Orkney

For each species, the status given by Lack (1942-43) is summarised and bears the initials (DL). Subsequent change in breeding status, to the end of 1967, is discussed, and the present status indicated.

Red-throated Diver *Gavia stellata*. Increased and spread in recent years (DL). Has further increased, as below :

	Lack - 1941	Balfour - 1967
Mainland	several pairs	12-15 pairs
Hoy	several pairs	not known
Eday	2 pairs	6-8 pairs
Stronsay	1 pair	1 pair
Shapinsay	not known	1 pair
Rousay	1 pair	2-4 pairs

Little Grebe *Podiceps ruficollis*. Several pairs on Mainland, and fewer pairs on north islands (DL). Some decline on Mainland.

Storm Petrel *Hydrobates pelagicus*. Not studied (DL). Thriving colony on Auskerry and large colony on Sule Skerry. Recently recorded as breeding on Pentland Skerries, Rusk Holm and Faray Holm; and probably on Green Holms and Switha.

Manx Shearwater *Procellaria puffinus*. Decreased since the 18th century (DL). Has continued to decrease and is probably confined to Hoy, where Von U. Böcker (1964) estimated 15-20 pairs at Sneuk Head. More study of distribution is needed.

Fulmar *Fulmarus glacialis*. Increased rapidly since first breeding in 1900 (DL). Has further increased and is widespread around almost all coasts. Species is now nesting on low inland cliffs and occasionally on flat ground.

Gannet *Sula bassana*. Not studied (DL). Large colony on Sule Stack of approximately 3000-4000 pairs. Numbers have been consistent for many years.

Cormorant *Phalacrocorax carbo*. Local but not uncommon, nesting on higher ledges with Shag on lower ledges (DL). In recent years fluctuating fairly closely around 600 pairs, two-thirds of which are contained in the two largest colonies—on the twin islets of Boray Holm and Taing Skerry, and on the Calf of Eday—each with about 200 pairs. Nests are either on flat clifftops or on low grassy, shingly, or rocky small islands (Balfour, Anderson & Dunnet 1967).

Shag *Phalacrocorax aristotelis*. Abundant (DL). No apparent change in status.

Heron *Ardea cinerea*. One cliff colony on Mainland (DL). The small colony on the west Mainland cliffs has fluctuated slightly, with a maximum of about 13 pairs.

Mallard *Anas platyrhynchos*. Common and breeds on most islands (DL). Has increased slightly.

Teal *Anas crecca*. Common and breeds on most islands (DL). No apparent change in status.

Pintail *Anas acuta*. Fairly common and increasing (DL). Rather sparsely distributed.

Shoveler *Spatula clypeata*. There has been a rapid increase and spread (DL). Mainly on some northern isles. Scarce on Mainland.

Scaup *Aythya marila*. According to the 1915 BOU list breeds, but no details given (DL). Spasmodic breeder. Bred on Papa Westray in 1954 (P. J. Conder pers. comm.) and apparently continued until 1959 (two pairs). Walker (1967a) records seeing a female with four young on North Ronaldsay in the summer of 1965.

Tufted Duck *Aythya fuligula*. A recent increase and spread (DL). Not numerous, but fairly widespread.

Pochard *Aythya ferina*. Numbers increasing (DL). Scarce. Confined mainly to the north isles.

Common Scoter *Melanitta nigra*. "Presumably has been regular for some years" (DL). Ceased to breed after 1958, and not now regarded as a regular breeder.



PLATE 5. Female Kestrel and brood in heather in Orkney, where ground-nesting was first noticed in 1945 and has been widespread since the mid 1950s. (see page 97).

Photograph by William S. Paton



PLATE 6. Part of the colony of Cormorants on the Calf of Eday, one of the largest colonies in Orkney



page 89 and vol. 4 page 481).

Photograph by William S. Paton



PLATE 6. Part of the colony of Cormorants on the Calf of Eday, one of the largest islands of the Orkney Islands, Scotland. (See page 141.)



PLATE 7. John Morell McWilliam (see Obituary page 113).

Photograph by Lafayette Ltd.

Eider *Somateria mollissima*. Common on all the main islands (DL). Still regarded as common, but has decreased slightly.

Red-breasted Merganser *Mergus serrator*. Common on all the main islands (DL). Has declined slightly.

Shelduck *Tadorna tadorna*. Common and breeds on most islands (DL). No change in status.

Mute Swan *Cygnus olor*. Rapid increase and spread (DL). Common, about 30 or more pairs breeding on the large, adjacent Harray and Stenness Lochs, and a pair or two on most of the smaller waters on Mainland and several of the bigger islands; a very few occasionally nest by sheltered saltwater lagoons. A considerable non-breeding population (not counted) on Harray and Stenness Lochs increases to at least 200 in winter and has reached 300.

Buzzard *Buteo buteo*. Rare visitor until 1954. Has been resident in Hoy since 1961 and probably bred successfully in 1962 and 1964. One pair reared two young and a second pair failed in 1966. At least one pair successful in 1967.

Sparrowhawk *Accipiter nisus*. A few pairs bred regularly on Mainland (DL). No record of breeding in the last 25 years and irregular after 1930s.

Hen Harrier *Circus cyaneus*. Present in limited numbers (DL). Greatly increased during the war years and reached a high peak in 1949-50. Females tended to outnumber males and this resulted in widespread bigamy. Breeding grounds are mainly confined to Mainland, Rousay and Hoy, with slightly more than 50 nests in recent years.

Peregrine *Falco peregrinus*. A number of pairs present (DL). At least a dozen pairs in 1958 and 1959 on the cliffs of eight islands. Low breeding success in 1964 and 1965, with fewer pairs attempting to nest. Slight improvement in 1967.

Merlin *Falco columbarius*. A decrease in the 19th century, but not at present time. Breeds regularly on Mainland and Hoy (DL). Perhaps 25 pairs between 1955 and 1960, but a slight decrease over the last few years.

Kestrel *Falco tinnunculus*. Not uncommon (DL). Increasing in early 1940s, and began nesting among heather. This was first noticed in 1945 (Balfour 1955). The habit was widespread by mid 1950s. Numbers have since dropped slightly, but it is still generally a fairly common bird.

Red Grouse *Lagopus lagopus*. Absent from north islands, where there is no heather or ling (DL). Considerable decrease from about the early 1930s. Present in small numbers on Mainland and Rousay.

Quail *Coturnix coturnix*. Several pre-1940 nest records (DL). Suspected of nesting at Rendall and Stenness in 1953. One pair reared young on Rousay in 1958.

Pheasant *Phasianus colchicus*. Introduced and doing well on Rousay. One seen in Shapinsay in 1905 (DL). Breeding in Balfour Castle Gardens and at St Margaret's Hope, and perhaps elsewhere.

Water Rail *Rallus aquaticus*. A few pairs breed regularly on Mainland according to G. T. Arthur (DL). No evidence of nesting now, though this secretive species may have been overlooked.

Corncrake *Crex crex*. Abundant in cornfields or long grass (DL). Has decreased considerably, even before the changes in haymaking methods and grass management, allegedly factors which have caused its decline. Birds now nest in such habitats as rushy areas and nettle patches rather than in cultivated or grass fields. Recent increase in North Ronaldsay.

Moorhen *Gallinula chloropus*. Widely distributed (DL). No change in status.

Coot *Fulica atra*. Found on all low-lying reedy waters (DL). Decreased,

especially on Mainland waters about 1930. Now common on a few of the north isles only.

Oystercatcher *Haematopus ostralegus*. Abundant on all coasts (DL). Has increased considerably, and a number have moved inland to breed. They nest in newly sown oat fields, and on waste ground and bare, dry hills.

Lapwing *Vanellus vanellus*. Numerous (DL). Population has declined since 1941. The hard winter of 1963 cut down the numbers drastically, but there has been a slow recovery since then.

Ringed Plover *Charadrius hiaticula*. Common on all suitable shores (DL). Has declined slightly.

Golden Plover *Charadrius apricarius*. Breeds on nearly all large areas of moorland (DL). Has decreased. Some breeding habitat has been lost through the ploughing of hill ground.

Snipe *Gallinago gallinago*. Breeds commonly on all main islands (DL). No change in status.

Curlew *Numenius arquata*. Great increase in last 50 years (DL). Has continued to increase on a large scale, and is a common moorland nesting bird despite the predation of young by Hen Harriers.

Whimbrel *Numenius phaeopus*. No evidence of breeding (DL). Buckley & Harvie-Brown (1891) give several old breeding records and Omond (1925) says that it nested on the hill of Kingsdale on Mainland, but it has apparently not nested for many years.

Black-tailed Godwit *Limosa limosa*. No real evidence of breeding (DL). One pair bred and reared young at Sanday in 1956 (J. Fotheringham pers. comm.). From this and earlier claims it appears that this species is a spasmodic breeder in Orkney.

Common Sandpiper *Tringa hypoleucos*. Formerly common, but a great decrease between 1920 and 1940 (DL). Has continued to decrease. Fewer on Hoy and Mainland, and the Rousay population has dropped by a half.

Redshank *Tringa totanus*. Numerous on all islands, breeding in grassy marshes (DL). No change in status.

Greenshank *Tringa nebularia*. Nested on Heddle Hill, Firth, in 1926. (A. Wood pers. comm.); and on Hoy in 1951 (G. T. Arthur and others).

Dunlin *Calidris alpina*. Abundant (DL). Has generally decreased a little. Ploughing out of fields has curtailed one of the best breeding sites on Mainland.

Red-necked Phalarope *Phalaropus lobatus*. Several pairs present, especially on North Ronaldsay (DL). Has not bred on North Ronaldsay for many years and is holding out precariously on one other island where in recent years only one or two pairs have been present.

Great Skua *Catharacta skua*. Over 20 pairs breeding on Hoy (DL). Has increased and spread to other islands. M. C. W. Evans established the Hoy breeding population at over 60 pairs in 1961. Since 1950 colonisation has occurred on Papa Westray (4-5 pairs), Rousay (5-6 pairs), Eynhallow and Westray.

Arctic Skua *Stercorarius parasiticus*. Nesting restricted to Hoy (over 60 pairs) and Papa Westray (14-18 pairs) (DL). Has increased and spread to more islands. M. C. W. Evans estimated the breeding population on Hoy in 1961 as 100-150 pairs. The Papa Westray colony has also increased. Other islands which are now colonised are Westray, Eday, Sanday, Eynhallow, Gairsay, Wyre, and Calf of Eday, and there are three moorland colonies on Mainland. Lack's finding of 25% pale birds on Hoy was confirmed by Von U. Böcker (1964) in 1959.

Great Black-backed Gull *Larus marinus*. Generally increased (DL). Has increased greatly and is common on large and small islands, hav-

ing in places ousted the Lesser Black-backed Gull. Where there were only a few scattered pairs 25 years ago, there are now large colonies. The colony at Burn at Forse in Hoy was estimated in 1961 by M. C. W. Evans at 1000-2000 pairs. In the fairly recent colony at Stowdale in Hoy I estimated 700-800 pairs in 1965. Other large colonies are found at Calf of Eday and Rothisholm, Stronsay. Of the two sizeable moorland colonies on Mainland one is over three miles from the sea.

Lesser Black-backed Gull *Larus fuscus*. Increasing and breeds at least 100 yards back from clifftops (DL). Has shown a marked decrease from the 1940s but there are indications of a recovery. Two factors may be linked with the decline of these birds. Firstly, the compact nesting colonies were very vulnerable to egg thieves. Two inland, moorland colonies on Mainland, one of 100 pairs and the other of 50 pairs, ceased to exist before 1950. Both colonies were known to be regularly raided by people for eggs. Secondly, as the colonies of the Lesser Black-backed Gull dwindled the larger Great Black-backed Gull increased in numbers and colonised the old territories of the smaller gull.

A new colony started on Mainland in 1964 in a valley which had been burned the previous year. This is an interesting development, because Buckley & Harvie-Brown (1891) quoted Moodie-Heddle, writing in 1889, as saying "Here [referring to Hoy] any one can create a breeding-place of the Lesser Black-backed Gull by burning a large tract late in the season".

Herring Gull *Larus argentatus*. Extremely abundant, breeding on cliffs of all main islands (DL). No apparent change in numbers. Breeds commonly on low flat islands as well as on sloping cliffs, and in some cases on moorlands far from the sea.

Common Gull *Larus canus*. Found on all main islands and is increasing (DL). Widespread in small colonies.

Black-headed Gull *Larus ridibundus*. Breeds commonly in grass marshes and reeds round low-lying waters. Many colonies on larger islands (DL). Status much as formerly. Tends to shift from place to place.

Kittiwake *Rissa tridactyla*. Common and widely distributed (DL). Large colonies on Westray, Calf of Eday, Copinsay and Marwick Head and many smaller ones all round the coasts. Associates with Guillemot.

Common Tern *Sterna hirundo*. Probably in reduced numbers (DL). Small numbers, usually associated with Arctic Terns.

Arctic Tern *Sterna macrura*. Probably in reduced numbers (DL). Fairly numerous and breeds on many islands, although populations tend to fluctuate and change breeding grounds.

Sandwich Tern *Sterna sandvicensis*. Two main colonies on North Ronaldsay (DL). 340 pairs at Whitemill Point, Sanday, in 1958, and at least 300 pairs nested at Bride's Ness, North Ronaldsay, in 1962 after a few years' absence. In 1963 the numbers at the latter site were down by almost a half, and there was no nesting on North Ronaldsay at all in 1964 and 1965. In 1965 the only colony was a small number of nests on Sanday. In 1967, 200 pairs nested on North Ronaldsay. Thus the numbers fluctuate and colonies are shifted from one location to another frequently.

Razorbill *Alca torda*. Not specially studied (DL). Widespread and well distributed on many cliffs, although not particularly numerous and never in large colonies. Often associated with Black Guillemots.

Guillemot *Uria aalge*. Not specially studied (DL). A number of large and small colonies on suitable cliffs, associating with Kittiwakes at largest colonies. Greater numbers at Noup Head, Westray, Calf of Eday, Marwick Head and Copinsay.

Black Guillemot *Cepphus grylle*. Not specially studied; colonised North Ronaldsay in 1938-40 (DL). Fairly common. Small colonies are widely distributed around the coasts and small islands. Nests among boulders, under flat stones, in burrows and in crannies.

Puffin *Fratercula arctica*. Decreased (DL). Small numbers on several coasts and islands. Large colony on Sule Skerry and small colonies at Costa Head, Swona, St John's Head and Berry.

Rock Dove *Columba livia*. Abundant everywhere (DL). No change in status.

Woodpigeon *Columba palumbus*. Abundant on islands with woods (DL). Has shown a further small increase. The adaptation to breeding among heather since before 1940 has continued to spread.

Collared Dove *Streptopelia decaocto*. First observed in Orkney at St Margaret's Hope in July 1962. Attempted to breed on Shapinsay in 1963; apparently bred in 1964 in the Finstown area, and certainly bred in 1965 in Binscarth plantation, where 20 birds were seen together after the breeding season. Has now spread to other areas.

Cuckoo *Cuculus canorus*. A few nest most years, parasitising Meadow Pipits and Dunnocks (DL). Small numbers, fluctuating from year to year.

Long-eared Owl *Asio otus*. Several pairs nest regularly in woods (DL). Rather fewer since 1952, perhaps four to six pairs annually in the past ten years.

Short-eared Owl *Asio flammeus*. A few pairs breed on some islands (DL). Fluctuates. Rather numerous in 1967.

Skylark *Alauda arvensis*. Common in all cultivated grassland (DL). No change in status.

Swallow *Hirundo rustica*. Probably regular breeder but liable to fluctuations. No nests in 1941 (DL). Breeds in small numbers.

House Martin *Delichon urbica*. Same status as Swallow (DL). Has not bred regularly since 1941. A pair bred at Sandwich in 1956.

Raven *Corvus corax*. Well distributed. One or two pairs on many islands (DL). No change in status.

Hooded Crow *Corvus corone cornix*. A few pairs on the larger islands (DL). No change in status.

Rook *Corvus frugilegus*. Common and colonising (DL). Has not increased further.

Jackdaw *Corvus monedula*. Common (DL). No change in status.

Wren *Troglodytes troglodytes*. Abundant where there is cover (DL). Usually common and widespread, but declines in hard winters.

Dipper *Cinclus cinclus*. Rare (DL). Ceased to nest at Hoy in 1940-41, and no evidence of breeding in Orkney since then.

Mistle Thrush *Turdus viscivorus*. Present in small numbers (DL). Very scarce in recent years, not more than two or three pairs.

Fieldfare *Turdus pilaris*. A pair bred in west Mainland in 1967.

Song Thrush *Turdus philomelos*. Abundant in woods, and fairly common in gardens (DL). No change in status.

Ring Ouzel *Turdus torquatus*. Rare breeder (DL). Three young reared on Hoy in 1963 and breeding strongly suspected at three other localities in recent years.

Blackbird *Turdus merula*. Common except on open, dry and high moorland (DL). No change in status.

Wheatear *Oenanthe oenanthe*. Widely distributed on rocky moorland and sandy links (DL). No change in status.

Stonechat *Saxicola torquata*. Low numbers (DL). Hoy has a thriving population and a few pairs breed on Mainland. Fluctuates with severe winters.

Whinchat *Saxicola rubetra*. Small numbers bred annually but none seen in 1941 (DL). No recent proof of breeding.

Robin *Erithacus rubecula*. Local (DL). A few in several plantations and gardens.

Sedge Warbler *Acrocephalus schoenobaenus*. Decreased (DL). It has increased and regularly breeds at several places on Mainland, Sanday, Hoy and, recently, Westray and Stronsay.

Blackcap *Sylvia atricapilla*. Has possibly bred on a few occasions (DL). One pair bred in Balfour Castle gardens, Shapinsay, in 1949 according to G. T. Arthur and P. E. Brown (pers. comm. and Arthur 1950).

Garden Warbler *Sylvia borin*. One pair reared young at Binscarth plantation in 1964 and may also have nested in 1965.

Willow Warbler *Phylloscopus trochilus*. Gradually increasing and spreading (DL). Regular and fairly widespread though not numerous.

Goldcrest *Regulus regulus*. Two old breeding records—some doubt about their authenticity (DL). A pair bred at Binscarth plantation in 1945 and a pair at Carrick wood, Eday, in 1962.

Spotted Flycatcher *Muscicapa striata*. A few irregular breeding records (DL). Has bred regularly in small numbers (perhaps four to six pairs) over the past decade.

Dunnock *Prunella modularis*. Common in woods, gorse and gardens (DL). No change in status.

Meadow Pipit *Anthus pratensis*. Common on all islands with well developed moorland (DL). No change in status.

Rock Pipit *Anthus spinoletta*. Well distributed on coasts (DL). No change in status.

Pied Wagtail *Motacilla alba yarrelli*. Very local in 1941 but allegedly commoner previous to that (DL). Formerly a common breeder frequenting old quarries and burn-sides. Decreased rapidly from 1935 and is still scarce.

White Wagtail *Motacilla alba alba*. One pair nested in the wall of the mill dam at Breck on Rendall in 1932.

Grey Wagtail *Motacilla cinerea*. A few old nesting records (DL). Has not bred in last 25 years.

Starling *Sturnus vulgaris*. Extremely abundant (DL). No change in status.

Greenfinch *Chloris chloris*. Fairly common (DL). Has decreased slightly.

Linnet *Carduelis cannabina*. Common in woods with bushes and in gorse. Scarce elsewhere. (DL). Status much as formerly. Absent from North Ronaldsay. Additional nesting sites on grass-covered (very old) disused quarry faces and between rag stones on drystone walls.

Twite *Carduelis flavirostris*. Widely distributed, but nowhere abundant (DL). Status much as formerly. Breeds usually in small loose colonies or groups widely scattered. In North Ronaldsay nests in tall fuchsia bushes.

Chaffinch *Fringilla coelebs*. Fairly common in woods and gardens (DL). No change in status.

Corn Bunting *Emberiza calandra*. Common on cultivated land, and absent from moorland (DL). Has become very scarce, with largest numbers in north isles, though absent from North Ronaldsay in 1967.

Yellowhammer *Emberiza citrinella*. Not uncommon in hedges and

gorse but breeding range contracting (DL). Has decreased.

Reed Bunting *Emberiza schoeniclus*. Not uncommon (DL). Has increased and benefits from the spread of willow bushes by burn-sides and in other wet places.

House Sparrow *Passer domesticus*. Extremely common (DL). No change in status.

Tree Sparrow *Passer montanus*. There has been a small colony in the old coniferous wood at Carrick, Eday, since at least 1961.

Doubtful breeders

A bird is listed as doubtful when evidence of breeding is insufficient; or when it may have been confused with another closely related species; or when there seems to be a wrong application of an English or vernacular name to a species (e.g. the Goshawk must not readily be accepted as having bred in the past, when it appears that the Hen Harrier has been referred to as "Goshawk," or "Goose-haak", in Orkney). Generally, the validity of very old claims is most suspect.

Black-throated Diver *Gavia arctica*. Evidence of nesting in the last forty years has proven to be negative. All reports that have been critically investigated have turned out to be of Red-throated Divers. I have personally carried out two such investigations since the war and A. Wood did likewise in the early 1920s and early 1930s. Buckley & Harvie-Brown (1891) quote another unsatisfactory record.

Grey Lag Goose *Anser anser*. The single record has been shown to be that of a tame bird (DL).

Little Tern *Sterna albifrons*. This is listed as an Orkney breeder in the *Handbook* (Witherby *et al* 1941), but it is a mistake dating from the time of Baikie & Heddle (1848).

Pied Flycatcher *Muscicapa hypoleuca*. There is no evidence to support Moodie-Heddle's 1864 breeding record (Buckley & Harvie-Brown 1891).

Yellow Wagtail *Motacilla flava*. Omond (1925) described Moodie-Heddle's old breeding records (Buckley & Harvie-Brown 1891) as very doubtful, and they are probably the result of confusion with the Grey Wagtail.

Lesser Redpoll *Carduelis flammea disruptis*. The records mentioned by Buckley & Harvie-Brown (1891) are not satisfactory, and it seems probable that they refer to Linnets, both species being known as Rose Lintie in Orkney.

Three additional species not mentioned by Lack should be added to these six, making nine rejects in all. The three, from G. T. Arthur's list, are Pomarine Skua *Stercorarius pomarinus*, Black Tern *Chlidonias niger* and Turtle Dove *Streptopelia turtur*. The recorder gives very little supporting evidence for these claims and wrote against the Black Tern record "no proof."

There are nine doubtful breeders which seem to have stronger cases for inclusion in an Orkney list because either

the evidence is more convincing or the species would be nearer its normal breeding range.

Slavonian Grebe *Podiceps auritus*. G. T. Arthur lists one nesting record (no date) at Quanterness. A. Wood saw an adult in breeding plumage on Sanday in the 1920s.

Leach's Petrel *Oceanodroma leucorhoa*. Robinson (1934) gives one record from a lighthouse keeper's observations on Sule Skerry. This would seem to be a suitable breeding place, and indeed an adult was caught on the island in July 1967.

Garganey *Anas querquedula*. G. T. Arthur records seeing a female with two young on a loch at North Ronaldsay on 20th July 1943; and Baxter & Rintoul (1953) quote a record of five being flushed from a marsh on North Ronaldsay in July 1938.

Velvet Scoter *Melanitta fusca*. Past evidence indicating that breeding has occurred is circumstantial (see Lack 1942-43). A. Wood is confident that the species nested on Sweyn Holm in 1914. Adults are sometimes present all summer. On 15th May 1958 I saw a small party with Common Scoters on the sea near Sweyn Holm.

Dotterel *Charadrius morinellus*. I was shown an egg, supposedly taken from a plover-like bird's nest, by two boys in 1935. It resembled, but was smaller than, a Lapwing egg. This is at least suggestive evidence and gives some support for earlier breeding claims—see Buckley & Harvie-Brown (1891).

Woodcock *Scolopax rusticola*. Buckley & Harvie-Brown (1891) quote two breeding records for Rousay and two records for Mainland. G. T. Arthur records finding young on Mainland.

Roseate Tern *Sterna dougallii*. A pair is reported to have nested on North Ronaldsay in 1964 (Walker 1967b), but it is impossible now to establish this record beyond doubt, as only an incomplete description of the birds is available.

Redwing *Turdus musicus*. Nests in north Scotland and Shetland, but the two records for Orkney from Buckley & Harvie-Brown (1891) are unsatisfactory.

Wood Warbler *Phylloscopus sibilatrix*. A. Wood states that a pair bred in Binscarth plantation in 1914 and 1915, rearing three and five young respectively. It is strange that this record does not appear on Omond's list, as the two communicated regularly with each other.

Acknowledgments

I wish to tender my grateful thanks to P. J. S. Olney and G. J. Thomas of the RSPB for their assistance in arranging and editing this paper, to Mrs G. T. Arthur for presenting me with her late husband's notes, to M. C. W. Evans for his notes on skuas and gulls on Hoy, to K. G. Walker for information from North Ronaldsay, and to R. G. Ross and P. Leith for data on climatic variations and weather changes.

Summary

The need for an up-to-date account of the breeding birds of Orkney is outlined in relation to changes that have taken place in the environment in the past 25-30 years through changes in land use and management and otherwise.

Attention is drawn to species that have increased or decreased in

numbers, and an annotated checklist of breeding birds gives details of changes noted in their status or general ecology. Doubtful breeding records are discussed separately.

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Arctic auks on the Scottish coast

W. R. P. BOURNE

The Seabird Group

While the character of British seabird breeding populations has been known for many years, the birds which winter offshore are less well known, because they are comparatively inaccessible and elusive and only visit us during the season of short days and bad weather when few ornithologists are active. Now that oil pollution is steadily emerging as a major hazard to the swimming species it is becoming a matter of increasingly urgent importance to identify these wintering populations, in order to assess the magnitude of the damage. By far the best means appears to be the examination of beached bodies, which can provide information both of ornithological interest, as to what birds are visiting our inaccessible offshore waters, and for purposes of conservation, by indicating what harm is occurring to them.

The development of studies of beached birds was therefore made one of the first objects of the Seabird Group (Bourne 1965), and when an examination of a wreck of birds on the northeast coast in January 1966 demonstrated that several races of auks could be identified, including arctic forms rarely recorded before in Britain (Parrack 1967), it was

agreed that the Seabird Group would join the Royal Society for the Protection of Birds in the organisation of a new series of their long-established beach surveys of oil pollution, and would attempt to develop more detailed studies in an attempt to identify more precisely the nature of the birds that were being killed.

It would, of course, be desirable if all the interesting birds found dead on beaches could be prepared as museum specimens, but the number is unfortunately far too large and their condition usually too poor to make this practicable. Since emergency studies in the field by inexperienced people are rarely satisfactory it seemed best to ask in the first instance for the most informative and least objectionable part easily obtained, a wing. Our request resulted during the 1966/67 winter in the receipt from Scotland of 24 wings, with or without other parts, belonging to all five of the regular British auks, compared with 31 wings of the the three commoner species from the rest of Britain, apart from the 1194 sent in as a result of the *Torrey Canyon* disaster (Bourne, Parrack & Potts 1967). Since the Scottish birds appear to include a high proportion of individuals of the long-winged arctic races, including the first record of the typical form of Puffin *Fratercula a. arctica* for Britain, it seems desirable to place the result on record at once, if only in the hope of stimulating further work.

The 24 wings have been sent in by the following people, hereafter referred to by their initials, to whom we are duly grateful: F. J. Walker, eight from Shetland; P. McMorrnan and D. M. Stark, seven and two from Caithness; A. W. Diamond, M. Marquiss and W. R. P. Bourne, seven from Aberdeenshire. G. M. Dunnet and J. D. Parrack forwarded some of them, and three Guillemots have been made into skins in the Natural History Department at Marischal College, Aberdeen. The subspecific nomenclature used is that of *The Birds of the Palearctic Fauna* vol. 2, 1965, by Charles Vaurie.

Little Auk *Plautus alle*. One long dead found by FJW at Norwick, Unst, December 1966, wing 127 mm. A fair indication of the arctic origin of some of these birds.

Razorbill *Alca torda*. One recently dead found by WRPB at Newburgh, Aberdeenshire, on 10th May 1967 had a wing of 190 mm and a small bill and presumably belonged to the Scottish breeding population *A. t. islandica*. One collected with a possible arctic Guillemot by PMcM on Dunnet Sands, Caithness, on 6th April 1967 had a badly warped wing somewhat under 200 mm, which would also agree with this population, but a culmen 24 mm deep, bringing it within the range normal for the typical form *A. t. torda* of the Baltic.

northern Scandinavia and the arctic, previously known from Britain mainly through ringing recoveries (Hudson 1965), although it seems likely to have occurred among especially the immature birds wrecked on the northeast coast of England in January 1966 (Parrack 1967). A wing of 203 mm collected by FJW at Norwick, Unst, Shetland, lies on the borderline between the two forms.

Guillemot *Uria aalge*. A wing collected by FJW at Haroldswick, Unst, Shetland, in March 1967, one collected by PMcM on Dunnet Sands, Caithness, on 6th April 1967, five more that she collected there on 30th April 1967, and two collected by WRPB at Rattray Head, Aberdeenshire, on 8th May 1967, are black above, often rather streaked below, and measure 211, 201, 202, 205, 209, 206, 212, 201 and 203 mm respectively, ranging from the upper extremity of the normal range of the typical form *U. a. aalge*, breeding locally, through that of the debatable race *U. a. spiloptera* of the Faeroes, beyond the mean for the arctic form *U. a. hyperborea* of Bear Island and the Barents Sea. An adult male collected by AWD at Rattray Head on 12th March 1967, a subadult from Newburgh, Aberdeenshire, in December 1966, and an immature female from there in April 1967, made into skins, have wings of 213, 202 and 208 mm, and the first two have been compared with specimens of *U. a. hyperborea* from Bear Island in the British Museum (Natural History) and agree with them. It would appear that this form, first recorded in Britain as the result of the recovery in Co. Durham in 1950 of a bird ringed on the Murman Coast in 1940 (Hudson 1965), reported again on the northeast coast of England in the January 1966 oiling incident (Parrack 1967), and once in the *Torrey Canyon* kill (Bourne, Parrack & Potts 1967), probably winters off Scotland quite commonly.

Black Guillemot *Cepphus grylle*. One wing of 151 mm picked up by FJW at Norwick, Unst, December 1966.

Puffin *Fratercula arctica*. Until now only our breeding form *F. a. grabae*, of Britain and the Faeroes, appears to have been recorded here, although three birds presumably belonging to the intermediate Norwegian population (Pethon 1966), ringed in Luroy, Nordland, at 66°35'N, 12°15'E, have been recovered several years later at Wick (Shetland) in May, Inchkeith (Firth of Forth) in September, and Sheringham (Norfolk) in February. Three wings collected by FJW at Norwick, Unst, Shetland, in June, August and September 1967, and two collected by DMS in Caithness in August 1967, measure 156, 155, 161, 153 and 158 mm, and average 157 mm, compared with 160 mm average for the five birds in the *Torrey Canyon* kill; but another wing taken by FJW from a bird long dead at Burra-

firth, Unst, Shetland, in February 1967, measures 173 mm, which takes it well up in the usual range for the typical form *F. a. arctica* of the low arctic, breeding in Iceland, Bear Island, and Jan Mayen. Puffins are rather highly migratory but stay far out to sea in winter so that they are hard to collect, which may explain why this form, which was to be expected, has not been reported before. *F. a. naumanni* from Spitsbergen, which is even larger, might well occur too.

Discussion

It appears from these wings that auks from the arctic must winter quite commonly at sea off the Scottish coast, since about half those collected in winter appear to belong to arctic populations; such birds are possibly less likely to be collected than those of local origin, because they probably stay further out to sea. It is an interesting speculation what else might be found if larger numbers of birds were examined. It is also becoming clear that while wing-length, especially, provides a useful indication of the origin of the birds, since in accordance with Bergmann's Rule it normally becomes greater in populations from higher latitudes, with some species such as the Razorbill and Fulmar *Fulmarus glacialis* the bill is a more decisive character. It is also useful for ageing the bird in species such as the Razorbill and Puffin; so that where possible it is useful to have the head of a bird as well as a wing. With the two, most of our commoner seabirds can usually be identified as accurately as with the whole skin.

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Short Notes

Grunting by diurnal raptors

In recent months I have noted grunting calls made by both a captive Buzzard and a captive Osprey. The Buzzard made this noise only when flapping hard, usually when going for bait from the fist, but the Osprey produced a very low, quacking, duck-like grunt, which carried for only a few yards, on several occasions when approached at rest. This

form of calling by the Buzzard may have been what Macpherson described as "a low chuckle or croak of parents bringing food to young" (*Handbook*).

It has not been noted before in the Osprey and is of interest here in view of the controversy over the hatching date of the young Ospreys at Loch Garten in 1959, mentioned in *The Return of the Osprey* (Brown & Waterston 1962). Hatching was held to have occurred on 4th-5th June, when a grunting sound, presumed to be made by a newly hatched chick, was heard over a microphone from the tree and recorded on tape. No carrying of food to the nest was noted till 9th June, however, on which morning thin peeping sounds were heard over the microphone. Besides the unusually long interval between hatching and first feeding, a hatch on 5th June would have suggested an incubation period of 33-35 days, rather shorter than is usual at Loch Garten. These apparent discrepancies would disappear if the grunting was in fact made by an adult.

DOUGLAS N. WEIR.

Long-eared and Short-eared Owls' mode of hunting

In *The Birds of the British Isles*, Bannerman states that Long-eared Owls hunt entirely at night. I was therefore surprised to find one out in the open as early as 5 p.m. on 28th May 1967 and again at 7.15 p.m. on 22nd July, both at Airlie, Angus.

On the first occasion it was seen moving from post to post along a fence and making odd forays over a field of young grass, into which it dived twice, but without catching anything. The bird of 22nd July was quartering a field very low over the ground. The flight seemed less rapid than that of the Short-eared Owl, the wings describing a smaller arc. At close range the ear tufts were immediately conspicuous, sloping back over the forehead and projecting above it, and I was also able to note the orange iris.

D. A. TINDAL.

One is not always able to get close enough to a Long-eared Owl to see its long ear-tufts and orange, not yellow, iris. Mr Tindal's note mentions several other features useful in identification and prompts me to contribute some points of contrast between this species and the Short-eared Owl which I noted on Speyside between 1960 and 1963.

A distinctive difference in the field is the normal mode of hunting: the Long-eared Owl hunts usually at a height of two to four feet above the ground, the wing-beats are quite fast, with short periods of gliding, and the bird wheels back on its flight-line to catch prey. As it flies, the wings are not

raised above the line of the body. The Short-eared Owl hunts at a higher level, six to thirty feet above the ground, and sometimes more; the wing-beats are stronger and slower, and the wings travel above and below the line of the body. Short-eared Owls hunt during much of the day, but it is important to note that Long-eared Owls will hunt in daylight, especially when feeding young. I have seen them hunting in Speyside three hours before sunset and several hours after dawn.

ROY H. DENNIS.

Breeding success of Blackbirds in Edinburgh suburbs

During the spring and summer of 1966 we followed the progress of 93 Blackbird nests in the Liberton and Juniper Green suburban areas of Edinburgh, from laying until the young left the nest, in an effort to discover how successful they are in areas where they are subject to a large amount of disturbance. It is not always realised how high the losses usually are.

The mean size of the 93 clutches studied was 3.45, but only just under 30% of the eggs gave rise to fledged young, so that the mean number of young raised by each pair was 1.03. Most of the losses took place during the incubation period, as 83½% of the young which we found in the nest were known to have fledged. Desertion and infertility appear to have been relatively minor factors in hatching failure. The evidence points to predation, particularly by human beings, as being largely responsible for the high egg-loss during incubation.

Because of differences in the measures used, most of our results are not directly comparable with those of Snow (*Bird Study* 2: 72-84, 169-178), who analysed the data provided by B.T.O. nest record cards. He found clutch size to vary with time of year, 1900 clutches giving an overall mean of 3.86. The number of young raised by each pair rose from 1.1 for nests started in March to 1.6 in June. These figures are rather higher than those found by us, but nevertheless it seems that the high predation in our suburban areas does not reduce success dramatically below that found over the whole country.

M. A. MACDONALD, R. L. SWANN.

Lesser Grey Shrike in East Lothian

On 10th June 1967 we discovered a Lesser Grey Shrike sitting on telegraph wires near Whitekirk, East Lothian. We watched it in sunny conditions both perched, at ranges down to eight yards, and flying out over a neighbouring field to hawk for insects. Intermediate in size between Red-backed

and Great Grey Shrike, its upright stance was more reminiscent of the former. We took a detailed plumage description, noting the broad white wing-bar and the black eye patches extending forward to meet across the forehead. The sides of the breast and flanks were pinkish-buff. When disturbed by a passing cyclist, it flew up into a nearby wood and could not be found again.

K. ALLSOPP, E. M. P. ALLSOPP.

(This record is the first for Forth. Lesser Grey Shrikes have been seen in Scotland several times recently (*Scot. Birds* 4: 50, 60, 232, 291, 323, 378), but all of these were in the Northern Isles, for which there is now a good number of records. It is interesting that more are not seen further south.—Ed.)

Woodchat Shrike in Morayshire

While visiting Findhorn, Morayshire, on 2nd June 1967, my wife and I had excellent views of a Woodchat Shrike, which we watched for some 20 minutes in bright sunlight. As it perched on posts and gorse bushes the chestnut crown and nape showed very clearly and it made two or three dives to the ground after prey from each post before moving to a new one. When flying, its white rump, shoulder patches and wing-bars were very conspicuous. We last saw it flying away over the dunes.

J. L. COJEEN.

(This is the first record for the Moray Basin. Like the Lesser Grey Shrike, the Woodchat Shrike has recently been recorded in Scotland more often than before, and we have published a number of records, (e.g. *Scot. Birds* 4: 50, 60, 101, 234, 508, 520).—Ed.)

Recent News

ANDREW T. MACMILLAN

To emphasise the changed nature of this semi-topical column we have given it a new name. Our aim will be to report each quarter on some of the interesting things that have been happening, though we cannot hope, for example, to spot all the smaller irruptions as they take place, as we will not have the whole picture in front of us. The place for a balanced view, and for the mass of records of such things as arrival dates and the occurrences of less common birds (with observers' initials), will of course be in the annual Scottish Bird Report. Nonetheless, local recorders who carefully feed us with information each quarter will know that

even when it does not merit special mention it will help us to make the sort of general comment readers want ("Redpolls are scarce this winter") and to decide what is worth a paragraph that quarter. Even so, we must apologise to those who have gone to a lot of trouble this quarter to send full lists, for the small amount we have been able to use.

In Current Notes we did not normally mention rarities. In this new section we may do so from time to time, since they are often news, but this will usually be subject to the reservation that the records will not have been considered by the Rarities Committee and must be regarded meantime as tentative.

The whole form of Recent News may be regarded as slightly tentative at the moment, but on one thing we are determined—it will be kept short. This will make life easier both for contributors and for ourselves, who certainly could contemplate again only with dismay the overwhelming mountain of paperwork that Current Notes so recently involved. The sort of notes we need should become apparent from what follows.

Oil pollution. Oil pollution in the Tay estuary was fairly serious in the early months of 1968, the after-effects being recorded, for instance, all along the north coasts of Fife and as far round into the Forth as Elie. The source of the oil has not apparently been traced, but the first oiled birds were noted at Tentsmuir from the end of February. Many hundreds, perhaps thousands, of birds were involved, especially from the vast winter flocks of **Eiders** off Tentsmuir. At Fife Ness there were about 50 badly oiled **Common Scoter** off the beach on 4th March, and 20 (19 males) were dead there on the 9th. Auks were less badly hit, suggesting that most of the oiling was coastal.

Wildfowl. The cessation of shooting following foot and mouth disease restrictions created an 'artificial' distribution of wildfowl in the Solway. Such a situation may throw light on the true preferences of the birds in the absence of disturbance, but the same restrictions make it difficult to study. In the Solway area the small population of **Bean Geese** returned early in January, but 15-20 birds is all it numbers nowadays. **Bewick's Swans**, mainly in February and March, have been seen in Kirkcudbright/Dumfries (1-3), Roxburgh (2), East Lothian (1) and Kinross (a family of 5).

Whooper deaths. During the early months of 1968 heavy mortality occurred among **Whooper Swans** in the Blairgowrie and Coupar Angus area, 30-40 birds, at least a third of the local wintering population, being found dead. Post mortem examination revealed no disease or parasites but a positive

result was obtained in a test for mercury. The birds may have taken treated seeds, pulling up the young plants by the roots, and tests are now being done for other pesticide residues. No other species appeared to be affected. Whoopers graze at times on winter wheat, and this might also be the cause of previous unexplained multiple deaths in Angus and Wigtownshire.

RSPB rarities. By the end of March the old male **Snowy Owl** was back on Fetlar defending his territory against one of last year's young males, but ignoring its sister. Up to four of the young were there in February as well as a strange adult male. No longer is the first Cuckoo loudly hailed in the daily press, but attention is now focussed with the same enthusiasm on the return of the **Osprey**. Suffice to report that all three pairs are back at their respective eyries at the time of writing. Advance information on the return of the **Black-browed Albatross** came when it was filmed following a fishing boat well out in the approaches to the Forth, some 10-14 miles northeast of Eyemouth, on 7th or 8th February; by 13th April it was back flying round the Bass Rock, where it may now become a permanent tourist attraction, having already featured in at least one hotel's brochure as one of the delights of a holiday at North Berwick.

Winter Avocet. There was a very nice tie-up between two reports of an **Avocet** on 13th January. It landed briefly at Aberlady about 10.15 a.m. before flying off west, to be recorded later in the day 33 miles away at Skinflats. Twelve days later what was possibly the same bird was found dead at Fife Ness.

Winter passerines. Though there has not been a major invasion this winter, reports of fair numbers of **Waxwings** continue to come in. **Great Grey Shrikes** are reported from a number of places; the species seems to occur quite widely in winter now. There have also been wintering **Blackcaps** in almost a dozen places in the southern half of Scotland, and this is another species that is recorded so regularly in winter now as hardly to be news. It is interesting how often a pair is found together, as at Bonnyrigg on 4th February. Further minor evidence of unusual numbers of **Goldfinches** in the north (see 5: 51) is provided by reports of pairs at Lybster and Thurso in mid February, a dozen in Inverness from 16th January, one near Elgin on 19th January, and four at Kinloss, Moray, on 3rd February. A report from North Uist in February seems to be the first for the Outer Hebrides other than St Kilda.

Early birds. We have deliberately kept off arrival dates (including the many **Sand Martins** from 28th March), but two early records may be of interest. In Moray a pair of **Collared**

Doves was incubating two eggs on 21st March; and at Fair Isle **Puffins** were back earlier than ever before—on 28th-29th March.

Tailpiece. Finally a true story by W. B. Risk passed on to us by the Clyde area local recorder. On 7th January a **Great Black-backed Gull** was seen eyeing a ball on the 17th tee of Dumfries and County Golf Course. **Crows** have been known to fly off with balls here. The bird picked up the ball, stretched its neck upwards, and spat it out. Another gull appeared, so the first one grabbed the ball again, stretched up like a champagne bottle, shooled violently, then swallowed the ball and flew away. The fate of the bird is not known.

Obituary

JOHN MORELL McWILLIAM

1883 - 1968

(Plate 7)

In the history of ornithology there are numerous instances of contributions of one kind or another to the ornithological scene of their day by clerics. John Ray, Canon Tristram, Gilbert White, F. C. R. Jourdain, Canon Raven—these are great names whose contribution was possibly greater on account of what they were rather even than what they did. J. M. McWilliam surely belongs to this glorious company.

Born 19th November 1883 fourth son of William McWilliam, Clerk to the Crown and Peace for Co. Monaghan, he was brought up in a countryside and in a society that seems as remote to us today as Scotland under the Stuarts. Educated in Ireland—Campbell College, Belfast, and Trinity College, Dublin—he came to Edinburgh to study Divinity, playing both hockey and billiards for the university, a tribute to the wide and liberal training that was once the hallmark of ministers in the Church of Scotland. He was very proud of his Irish education and used to remark that he always referred to his university degree as B.A., T.C.D., in the belief that the ignorant would believe he had two degrees and the informed would know that he had the best. Ordained in the early years of the Great War (1914-1918), he was, after a spell at Govan Parish Church as an assistant, called to St Bride's, Craigmore, Bute. He very shortly enlisted as a chaplain to the Forces (1917-1919) and served in France, where he noted that the race of Yellow Wagtail breeding in the Seine Inferieure was the same as that in Britain. Amongst other cautionary tales of that time he was very fond of one illustrating the dangers of a limited vocab-

ulary: in his case the only measure of liquid that he could recall was litre—and a litre of cidre proved a formidable thirst quencher.

Back in Bute there followed the most active period in the field, culminating in the publication of *The Birds of the Island of Bute* in 1927. Then the return to Glasgow and the years in the parish in Govan, hard years for the Minister, his wife and the people of Govan in the hungry times of high unemployment, the memory of which still bedevils industry in Scotland. To this period belongs *The Birds of the Firth of Clyde* (1936) and much of the accumulation of his remarkable library. Now the next war and the long and happy ministry in the tiny Dumfriesshire parish of Tynron, a charge that combined the elements of both active ministry and retiral in a most acceptable amalgam. Finally the short period of retirement at Invergowrie cosseted and comforted by his devoted wife aided by his daughter and son-in-law. These are the bare bones of his life. To give them flesh let us think of his contribution to Scottish Ornithology.

In these enlightened days it is hard to imagine the time before publication of the *Practical Handbook of British Birds* (1919-24)—as the Minister remarked, hardly practical and certainly not a hand book—when the main acceptable method of identification of a bird was by its corpse and when a main criterion of judging a naturalist's knowledge of the breeding biology of birds was the number of clutches of different species that were contained in his egg cabinet. It is against this background that the *Birds of the Island of Bute* and the *Birds of the Firth of Clyde* should be judged. They together form a sound basis on which to build, and are remarkable for pointing out clearly the state of ignorance as freely as the state of knowledge. The introduction to the *Birds of the Island of Bute* is a particularly interesting essay showing clearly the thoughts of the Minister, at that time, and suggesting lines of enquiry that have since proved most fruitful.

Books always attracted him. In his university days in Edinburgh he picked up many a bargain in Grant's and Thin's with his friend Dr Oliver H. Wild. Later he was a regular visitor to the sale room of Dowell's, where his whispered remarks reverberated around the rooms to the edification, amusement and occasionally embarrassment, of his companions. More books were bought off the barrows in Glasgow, and Glen's in Parliamentary Road was a very favourite and productive hunting ground. The result of this activity was an amazing collection of books and a library where the precious and the paltry, the good and the bad, the profound and the trivial were intimately mixed like the

jostling crowd in some eastern caravanserai. During this period many of the Minister's purchases found their way to Dr Casey A. Wood and through him to the remarkable library of bird books that bears his wife's name at the McGill University, Montreal.

When George Waterston founded the SOC the Minister along with the Good Ladies formed the backbone of the old brigade that gave the club that aura of respectability from which it has really never fully recovered, and helped to form the sound base from which it has expanded so successfully. The SOC was one of his great and enduring interests and the honour that the club paid him in electing him an Honorary President was not only well merited but deeply appreciated.

It was as a companion and a talker that the Minister will be best remembered. As a companion in the field my recollections of the Minister are always connected with water—the first meeting and an excursion on the 'Dalga' to the Sgat Islands off Loch Fyne, a memorable trip to North Rona, where I ineffectually remonstrated with him for filling two tins, the big square ones, that had once held McVittie and Price's Digestive biscuits, with Arctic Terns' eggs—he held very strongly, I recall, that the chicks would all die anyway and that it would make no difference to the numbers of Arctic Terns, a true if somewhat tendentious argument! Or those later trips to the Scars or Mochrum. On one visit we were machine-gunned on the former by a passing plane. The birds must have enjoyed that. The talk used to go on all night to the accompaniment of innumerable cups of tea. What remarkable performances they were. Well as the Minister spoke in public, in the pulpit or after dinner, it was in private with a small group of listeners that he was at his best, his most witty, his most serious and his most outrageous, whether telling part of the Talbot Clifton saga; largely, I imagine, apocryphal stories of the 8th Argylls, to whom he was chaplain; simple tales like the story of the learned pig; defending coloured or opaque church windows because his uncle was nearly removed from his charge for bursting into laughter in the pulpit on account of an incident he had seen through the clear windows of his church; building elaborate theories on population, migration or colouration, on the minimum of fact; seriously discussing fundamental religious matters—he was one of the very few clerics not embarrassed to discuss such things; planning some bird's nesting foray; or telling of some saleroom triumph.

In life, as in art, there are many copies and few originals. John Morell McWilliam was an original. We salute his memory.

ARTHUR B. DUNCAN.

Reviews

Pigeons and Doves of the World. B.M. publication no. 663. By Derek Goodwin. Illustrated by Robert Gillmor. London, British Museum, 1967. Pp. vi + 446, errata slip tipped in; 3 colour plates, line drawings and maps throughout. $27\frac{1}{2} \times 21\frac{3}{4}$ cm. 126/-

Pigeons are a large, diverse, colourful and successful family of birds occupying habitats from high mountains to tropical jungle, and living comfortably (sustained in winter by cake and bread supplied by indulgent humans) in many of our large cities from London and New York to Ulan Bator, capital of Mongolia. In this handsome book Mr Goodwin, an acknowledged expert, writes about them with enthusiasm and authority.

Twelve chapters, occupying the first 54 pages, supply the background information: nomenclature, adaptive radiation, plumage sequences, colour and kindred topics. They are not strictly confined to pigeons. The chapter on display and social behaviour, much of it relating to British pigeons, invokes comparisons with grebes, gulls, guillemots and man. A glance through *British Birds* and other ornithological journals over the last 20 years will reveal the breadth of Mr Goodwin's interest in bird behaviour.

A few hypotheses appear rather speculative. The author suggests, for example, that a predator disturbing a nesting pigeon might eat its clearly visible white eggs and thus lose the chance to return to eat the sitting bird; whereas if the eggs were coloured the predator would miss them, and could return later for the pigeon. How many predators, anyway, eat egg or bird indiscriminately? However, even his more unorthodox theories are thought-provoking.

The largest section of the book deals systematically with all the species of pigeons. Each has a distribution map and most have an excellent black-and-white drawing by Robert Gillmor, who has also provided three splendid colour plates, showing diversity among pigeons, sexual dichromatism, and adult/juvenile plumage differences. There are clear drawings of some aspects of pigeon behaviour.

For some species nothing is recorded of general habits, nesting, voice, or display; the author points out that one purpose of the book is to indicate what is not known, so that ornithologists visiting northwestern Ecuador, for example, or the Marquesas, should keep a sharp eye on the pigeons. Ripley's Fruit Dove, if still in existence, must be extremely rare; only two were seen (in the Phillipines) of which one was shot. And the Solomon Island Crowned Pigeon has not been found since 1904.

R. HEWSON.

Pesticides and Pollution. New Naturalist series No. 50. By Kenneth Mellanby. London, Collins, 1967. Pp. 221; 31 photographs (4 in colour) on 14 plates (2 in colour), and 8 diagrams. $21\frac{1}{2} \times 15$ cm. 30/-.

On first reading the title of this book, and learning that the author is the Director of the Nature Conservancy's Monks Wood Experimental Station, one might be excused for thinking that most of it would deal with pesticides. This is not the case; it is a well balanced book, and only 88 pages deal specifically with pesticides. Dr Mellanby draws our attention firmly, but unemotionally, to the many ways in which man is very effectively contaminating large areas of his environment and making them physically intolerable to living things.

Because pesticides have had so much publicity, one tends to forget that

there are other forms of contamination. For example, those of us who have to sit in our cars waiting for a traffic jam to clear may be inhaling into our smoke-blackened lungs dangerously high levels of carbon monoxide; while others, who enjoy the bathing facilities of the Forth, will be immersed in water containing their own untreated sewage.

Besides dealing with air and water pollution and radiation, the author also draws attention to the increasing problems of oil pollution and disposal of radio-active wastes. In the final chapter a little bit of sunshine filters through the smog-laden air and turbid waters, when ways of improving the present situation are suggested

This book should be read by everyone, regardless of their interest in wildlife, for as Dr Mellanby says, "Unchecked pollution is a real danger, an even greater danger than it would be if all the other pressures on the countryside did not also exist. Unless we control pollution, particularly the insidious effects of persistent poisonous substances, the losses may be irreversible. But pollution control by itself is valueless. Our need is for a more positive approach on the part of the whole nation..."

DEREK H. MILLS.

The Whooping Crane. The Bird that Defies Extinction. By Faith McNulty. London, Longmans, 1967. Pp. 190; graph, 2 maps, 11 drawings and 17 photographs. 23¼ x 15½ cm. 30/-.

Robert Allen, who devoted years of study towards the preservation of the Whooping Crane, wrote, "To watch them in flight is like a brief and unexpected look at the World as it was in the beginning." In 1937 American conservationists, suddenly realising that the species was on the brink of extinction and that a sight such as Allen had described might soon be lost for ever, aroused the U.S. government to take action. In this vivid account the author reviews the cranes' history, the setting-up of the Aransas Winter Refuge in Texas, and the prolonged search which led to the discovery of their breeding grounds in Wood Buffalo Park in Canada's North West Territory.

The perils, apart from the hazards of a twice-yearly migration of 2200 miles, were manifold—the establishment of a waterway through the refuge, the creation of a bombing range on an adjacent island, the threat of oil pollution from nearby borings, indiscriminate shootings, and the pressures of an increasing human population. At one time it was even contemplated to build a railroad through Wood Buffalo Park. Finally a bitter dispute arose as to whether or not some cranes should be captured and reared in captivity. Aviculturists, in efforts to increase the stock from injured birds, had met with little success, mainly owing to the obstinacy of the owner of Josephine, the only captive female crane.

The writer believes that the Whooping Crane will survive. It would indeed be a tragedy if such a noble species existed only within the confines of a zoo. For as long as a remnant of the cranes still haunt the vast open spaces, lovers of wildlife will be reminded of "the beautiful, multitudinous life that has vanished."

D. MACDONALD.

Danske Ynglefugle i Fortid og Nutid (Danish Breeding Birds, Past and Present). Acta Historica Scientiarum Naturalium et Medicinalium, Editio Bibliotheca Universitatis Hauniensis, No. 19. Danish with 46-page English summary. By Bernt Loppenthin. Odense, Odense University Press, 1967. Pp. 609; fold-out map and one line drawing. 25 x 17¼ cm. Danish Kr. 100.

This book is a history of Danish breeding birds from prehistoric times to the present day. In some ways the most novel sections to most

readers will be those dealing with a long series of subfossil remains, ranging as far back as the Barnacle Geese and Ptarmigan which apparently bred in Denmark in late glacial times, some 15,000 years ago. Lists are provided of species which the author thinks probably bred in the country at each subsequent period, though when he leaves the firm ground of prehistoric archaeology and launches himself over the quaking bog of the Middle Ages the reader may doubt if some of his comments are more than guesswork. His belief that there was little or no suitable habitat for such dune and saltmarsh nesting birds as Gull-billed Terns, Black-tailed Godwits and Tawny Pipits before 1300 seems particularly hard to substantiate with sound historical evidence.

The critical summary of records in Danish ornithological literature since 1750, however, is most solid and useful. It brings together in convenient form a lot of information only accessible before in scattered papers, and is also much more detailed and explicit than Salomonsen's handlist. One may, for instance, find estimates of the present breeding populations in Denmark of such species as Wood Sandpiper, Black-tailed Godwit and Marsh Harrier (a few hundred pairs of each) and learn how the White Stork has fallen from some 4000 pairs around 1900 to barely 100 pairs today. Sometimes the news is better—the recent colonisation of Lolland by Red-crested Pochards and Zealand by Green Sandpipers shows that not all changes are losses, and a post-script mentions the four nests of Penduline Tits found in Denmark in 1965. May this westward-pushing little bird continue its efforts until we can find its curious and splendid nests by the side of Duddingston Loch.

The English summary is substantial and generally adequate, though specialists will feel the need to attempt the main text for the detailed historical and archaeological discussion. Intending visitors to Denmark would find some value in consulting a copy before they leave.

T. C. SMOUT.

The Pictorial Encyclopaedia of Birds. By J. Hanzák. Edited by Bruce Campbell. London, Hamlyn, 1967. First published in Czechoslovakia, 1965. Pp. 582; 7 halftone drawings and 1118 photographs (45 in colour; No. 584a not numbered). 22 x 15½ cm. 30/-.

This volume is for the school library and for those with a general interest in all birds, but not too demanding of details in descriptive narrative or photographic sharpness. About half the photographic illustrations are of zoo or aviary specimens, and for some of the rarer species mounted museum specimens have been used, for both the colour and the black-and-white reproductions. The use of the same shot for both the colour and the black-and-white picture of the Chestnut Mannikin (colour plate xli and black-and-white plate 1064) was probably occasioned by the need to have one illustration near the text. The colour plates are scattered throughout the volume, not necessarily near their generic groups, and this results, for example, in colour plate xi, pheasants and peacocks, separating the photograph of a Black Kite in flight from its plate number on the previous page.

While some of the photographs do not permit accurate identification of similar species, due to lack of clarity, there should be no mistaking a museum specimen of a *Malimbus* weaver's nest for a *Ploceus* weaver's on plate 1062. The latter does not have the former's long tunnel entrance. This comment arises from your reviewer's long acquaintance with both genera in his compound garden and plantations in West Africa. One infers that this is another case of museum labels becoming switched.

I feel this very well known author and broadcaster has done a better job as editor of the text than the reproduction of the illustrations possibly deserves, and so has raised the volume out of the rut of just another picture book. At only 30/-, this is truly remarkable value, to be recommended to the younger naturalist, and to adults with a general interest in the wonders of this world's birdlife.

A. MACDONALD.

Birds of South Vietnam. By Philip Wildash. Rutland, Vermont and Tokyo, Charles E. Tuttle, 1968. Pp. 234; 25 colour plates, 22 line drawings, map. 21 x 15 cm. \$7.50 [62/6].

Many of the 586 species described are also found in North Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Indonesia, Borneo and the Philippines; 236 are illustrated, 215 in colour. For each species, brief notes are given on habits (including habitat) and distribution in South Vietnam, followed by a short paragraph on identification. Printed in Japan.

ATM

Requests for Information

Birds and aircraft. D. R. Grant, Department of Forestry and Natural Resources, 10 George Square, Edinburgh 8, is making a study of the local movements and distribution of gulls in relation to Edinburgh (Turnhouse) Airport as part of an investigation of the bird hazard to aircraft operations there. He will be marking a number of gulls with coloured dyes during the next twelve months and information regarding sightings of them, in particular direction of flight, will be most welcome. Any other relevant information on gull movements, colonies and wintering habits in the area would also be much appreciated.

Local Leaders required. The Young Ornithologists' Club, the junior branch of the RSPB, has a rapidly expanding Scottish membership, and 'Local Leaders' are urgently required to organise meetings and outings in all areas. If you would like to help in this interesting and rewarding activity, please write to Michael Everett, 21 Regent Terrace, Edinburgh 7, for full details.

The Scottish Ornithologists' Club

ANNUAL CONFERENCE

The 21st Annual Conference and 31st Annual General Meeting will be held in the Hotel Dunblane, Perthshire, on 25th-27th October 1968. Bookings should be made direct with the hotels. The full programme will be given in the next issue of "Scottish Birds." The registration fee will be 10/-, and the Annual Dinner 27/6 for those not staying in the Hotel Dunblane (both to be paid on arrival).

Hotels in Dunblane

Hotel Dunblane (Hydro) (Tel. 2551). Special Conference charge £7.17.6d, inclusive of 10% service charge, bed and all meals (except tea on Saturday afternoon) from Friday dinner to Sunday lunch, after-meal coffee, and the Annual Dinner (with wine or soft drinks). For less than a full day, bed and breakfast is 42/-, lunch 12/6 and dinner 18/6, all with additional 10% service charge. Rooms with private bathroom have a supplementary charge of 10/- per person per day.

Stirling Arms Hotel (Tel. 2156). Bed & Breakfast from 27/6 to 30/-.

Schiehallion Hotel, Doune Road (Tel. 3141). B & B 21/- to 25/-.

Neuk Private Hotel, Doune Road (Tel. 2150). B & B 23/- to 25/-.

Ardleighton Hotel (near Hotel Dunblane gates). (Tel. 2273). B & B from 25/-.

Hotels in Bridge of Allan

Allan Water Hotel (Tel. 2293). B & B 40/- to 54/-.

Royal Hotel (Tel. 2284). B & B 47/6.

Prices, except for the Conference Hotel, are provisional and should be confirmed.

LIFE MEMBERSHIP

Members of the Club who prefer to pay their subscriptions on a 'once for all' basis may be interested in the new Life Membership Subscription which was approved at the Annual General Meeting held on 28th October 1967. This was introduced as the result of several requests, and already three members have subscribed in this way. The new Life Subscription is £50, and a Joint Life Subscription is available for married couples for £75.

B.T.O. ORNITHOLOGICAL ATLAS

The proposal by the British Trust for Ornithology to launch an enquiry to map the breeding birds of the British Isles begins this year and will extend over a five-year period. The results will be published in the form of an ornithological Atlas similar to the well-known botanical Atlas of the British Flora, and will be a very valuable reference book of the future.

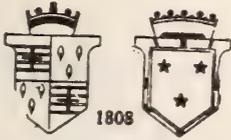
Details of the scheme were issued in a leaflet sent out with the last number of "Scottish Birds" and already a number of Club members have offered to help record, on a simple presence or absence basis, the breeding species in individual 10 km squares of the National Grid map. We hope that many more of our members will find time to cover areas which are well known to them or which they may be visiting on holiday, so that they can share in this very worthwhile project.

The organisation of the enquiry in Scotland is no easy matter, and the Council of the Club is very grateful to Mr Christopher Headlam, Foulis Mains, Evanton, Ross-shire, who has agreed to undertake the work of coordinator for Scotland. Members who would like to help with the enquiry are asked to get in touch with him, giving details of the particular area they wish to cover. Branch Secretaries and others who are already organising their own localities and who have received offers of help are also asked to keep in touch with Mr Headlam, so that as many squares as possible are covered without overlap. Members who cannot do anything this year are reminded that there are four more years in which their help will be welcomed.

STIRLING GROUP SUMMER EXCURSIONS

Saturday 6th July. BASS ROCK (by kind permission of Sir Hew Hamilton Dalrymple). Joint excursion with Glasgow Branch. Numbers limited to 12 per boat. Boats leave North Berwick Harbour at 1 p.m., returning 7.30 p.m. Tickets, about 12s, will be purchased on the boat. Applications to Mrs Hutchison, 27 Northbank Road, Kirkintilloch, Glasgow.

Saturday 7th September. SKINFLATS. Meet at Dutch Inn on main road. Applications to T. D. H. Merrie, West Faerwood, Dollar, Clackmannanshire, who will supply details of time of meeting.



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The B.T.O. Regional Representative, who lives in the village, will be pleased to offer local advice regarding the astonishing diversity of bird life in the vicinity and to receive lists of birds from visitors.

The Hotel is fully modern, but retains its old world charm of other days, and enjoys a wide renown for its comfort and fine cuisine.

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Dp. 3756 Res. 2237

THE SCOTTISH ORNITHOLOGISTS' CLUB

THE Scottish Ornithologists' Club was founded in 1936 and membership is open to all interested in Scottish ornithology. Meetings are held during the winter months in Aberdeen, Ayr, Dumfries, Dundee, Edinburgh, Glasgow, St Andrews and elsewhere at which lectures by prominent ornithologists are given and films exhibited. Exhibitions are organised in the summer to places of ornithological interest.

The aims and objects of the Club are to (a) encourage and direct the study of Scottish Ornithology in all its branches; (b) co-ordinate the efforts of Scottish Ornithologists and encourage co-operation between field and indoor worker; (c) encourage ornithological research in Scotland in co-operation with other organisations; (d) hold meetings at centres to be arranged at which Lectures are given, films exhibited, and discussions held; and (e) publish or arrange for the publication of statistics and information with regard to Scottish Ornithology.

There are no entry fees for Membership. The Annual subscription is 25/-; or 7/6 in the case of Members under twenty-one years of age or in the case of University undergraduates who satisfy the Council of their status as such at the time at which their subscriptions fall due in any year. The Life subscription is £50. Joint membership is available to married couples at an Annual subscription of 40/-, or a Life subscription of £75. "Scottish Birds" is issued free to members but Joint members will receive only one copy between them.

The affairs of the Club are controlled by a Council composed of the Hon. Presidents, the President, the Vice-President, the Hon. Treasurer, the Editor and Business Editor of "Scottish Birds," the Hon. Treasurer of the House Fabric Fund, one Representative of each Branch Committee appointed annually by the Branch, and ten other Members of the Club elected at an Annual General Meeting. Two of the last named retire annually by rotation and shall not be eligible for re-election for one year.

A Scottish Bird Records' Committee, appointed by the Council, produce an annual Report on "Ornithological Changes in Scotland."

An official tie in dark green, navy or maroon terylene, embroidered with small crested tits in white, can be obtained by Members only from the Club Secretary, at a cost of 17s 6d. A brooch in silver and blue is also available to Members, price 3s 6d, from the Club Secretary or from Hon. Branch Secretaries.

The Club-room and Library at 21 Regent Terrace, Edinburgh 7, will be available to Members during office hours, and on Wednesday evenings from 7 to 10 p.m. during the winter months. Members may use the Reference Library, and there is a small duplicate section, consisting of standard reference books and important journals, which can be lent to students and others wishing to read a particular subject. A lending section for junior Members, which is shared with the Young Ornithologists' Club, is also available.

Forms of application for Membership, copy of the Club Constitution, and other literature is obtainable from the Club Secretary, Mrs George Waterston, Scottish Centre for Ornithology and Bird Protection, 21 Regent Terrace, Edinburgh 7. (Tel. 031 556 - 6042).

Notice to Contributors (revised 1st December 1967)

1. General notes (not of sufficient importance to be published on their own as Short Notes) should be sent to the appropriate local recorders for inclusion in their summary for the annual Scottish Bird Report, not to the editor. A list of local recorders is published from time to time, but in cases of doubt the editor will be glad to forward notes to the right person. All other material should be sent to the editor, Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12. Attention to the following points greatly simplifies the work of producing the journal and is much appreciated.

2. If not sent earlier, all general notes for January to October each year should be sent to the local recorders early in November, and any for November and December should be sent at the beginning of January. In addition, local recorders will be glad to have brief reports on matters of special current interest at the end of March, June, September and December for the journal. All other material should of course be sent as soon as it is ready.

3. All contributions should be on one side of the paper only. Papers, especially, should be typed if possible, with double spacing. Proofs will normally be sent to authors of papers, but not of shorter items. Such proofs should be returned without delay. If alterations are made at this stage it may be necessary to ask the author to bear the cost.

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

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

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

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

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

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

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

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

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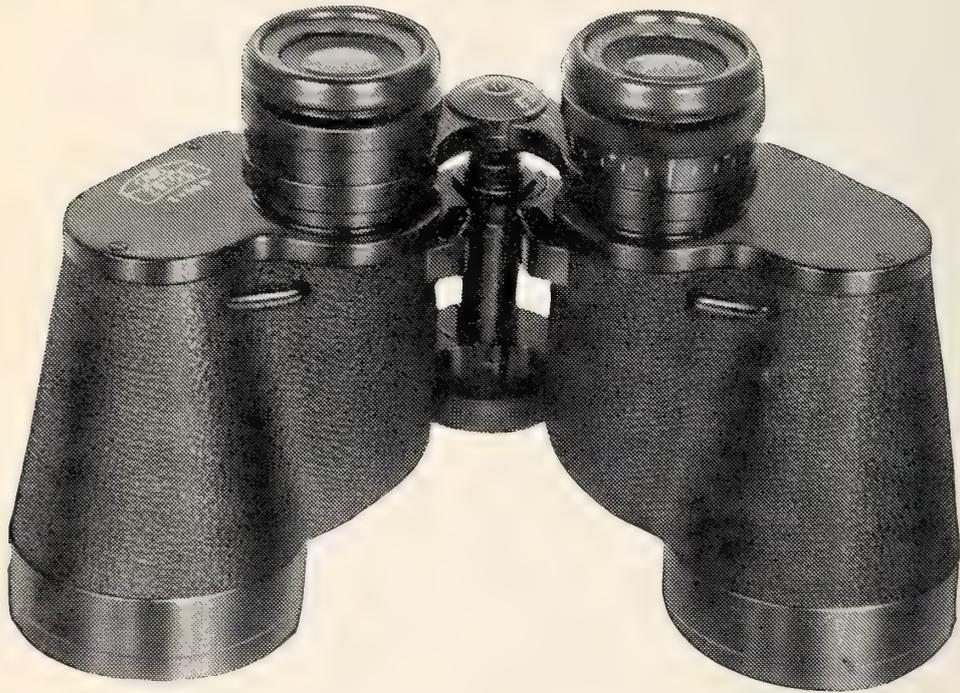
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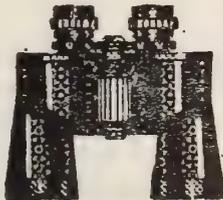
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Edited by Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12.
Assisted by D. G. Andrew and M. J. Everett.
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Vol. 5 No. 3.

Autumn 1968

Edited by A. T. MACMILLAN with the assistance of D. G. ANDREW and
M. J. EVERETT. Business Editor, T. C. SMOUT.

Editorial

Now we are ten. Though unmarked by any obvious celebration or innovation, the entry of *Scottish Birds* into its second decade may perhaps be noted with a quiet chirrup. In the past ten years we have ground out 2221 pages at a rate of not more than a page for two hours of editorial work—equivalent to 2½ years of the office worker's 9 to 5 routine. No wonder sparetime editors wear out so quickly.

Editorial changes. By the time this is in print Peter Slater will have married and moved to Brighton to take up a post at the University of Sussex. With our sorrow at losing his services as an assistant editor and our good wishes for the future we may also express the hope that one day he will return to Scotland filled with renewed enthusiasm for the editorial function.

We have been very lucky to enrol Mike Everett of the RSPB Scottish Office as an assistant editor. He has already sunk his teeth deep into Short Notes and we have every confidence that he is exactly the right person for the job. Rather than embarrass him with a catalogue of virtues we bid him welcome with the hope that he will be happy in his work.

Sea Eagles at Fair Isle. Of a dozen species which have ceased to breed in Britain since 1800, five have been regained this century, three more breed sporadically, and only four (Great Auk, Great Bustard, White-tailed Eagle and Kentish Plover) are still absent (*Brit. Birds* 61: 243). Probably only the White-tailed Eagle of these four could possibly be reestablished as a regular breeder. The snag is that, unlike the Osprey, which was a regular migrant to Britain in increasing numbers before it bred again, the White-tailed Eagle is largely sedentary and does not make the crossing from Scandinavia.

It is therefore interesting to learn of another attempt to reintroduce this species. Four young birds collected by Dr Johan Willgohs from different eyries in north Norway,

where they are habitually destroyed, have been flown to Fair Isle with all necessary permits, licences and blessings and will be fledged and released there (see plate 11). It is hoped that they may take to this traditional site and breed when they reach maturity about 1972.

Not everyone approves of this sort of thing, and it is not done lightly. There have been too many disastrous consequences from unthinking introductions of alien species to new environments. But there is a big difference here, for this magnificent bird was a natural member of the Scottish avifauna—commoner once than the Golden Eagle—and was exterminated by man. Now he seeks to undo the damage for which he alone was responsible.

In Norway careful study by Dr Willgohs has shown that in spite of its persecution the White-tailed or Sea Eagle, as many prefer to call it, preys primarily on seabirds and fish. It is also a scavenger and eats sheep and other carrion, but Dr Willgohs has never seen one attack a lamb. Fair Isle offers an abundance of prey—seabirds, fish and rabbits—and its remoteness may help to keep the birds from wandering. The experiment has the unanimous approval of the islanders, as well as the National Trust for Scotland (owners of Fair Isle) and the leading ornithological societies. It will be an exciting moment if one day we can again watch this huge, heavy eagle soaring along the remote cliffs of the north and west.

Scottish Bird Report. The end of October approaches. Now is the time that will tell whether the first Scottish Bird Report (for 1968) will be a really comprehensive record and whether it can be ready by the summer issue next year.

As described in various circular letters and in *Scot. Birds* 4: 529-532, all January-October 1968 observations should be sent to the appropriate local recorders in the first fortnight of November so that they may get ahead with checking and assembling the material. Where special arrangements have been made to give full details earlier it may not be necessary to repeat them; and, likewise, November-December records cannot be sent until early January.

If you have anything to report please send it at the right time. This will show how thoughtful you are and will lighten the task of the recorders and earn you their gratitude. The full list of their addresses is reprinted below, including two changes of address (Dr I. D. Pennie, R. Hewson).

List of local recorders

Shetland (except Fair Isle). R. J. Tulloch, Reafirth, Mid Yell, Shetland.

Fair Isle. R. H. Dennis, Bird Observatory, Fair Isle, Shetland.

- Orkney.** E. Balfour, Isbister House, Rendall, Orkney.
- St Kilda.** Please write direct to editor.
- Outer Hebrides (except St Kilda).** W. A. J. Cunningham, Aros, 10 Barony Square, Stornoway, Isle of Lewis.
- Caithness.** D. M. Stark, 2 Harland Road, Castletown, Thurso, Caithness.
- Sutherland, Ross-shire (except Black Isle).** Dr I. D. Pennie, Gledfield House, Ardgay, Ross-shire.
- Inverness-shire (within 18 miles of Inverness), Ross-shire (Black Isle only).** Dr Maeve Rusk, Arniston, 51 Old Edinburgh Road, Inverness.
- Inverness-shire (mainland more than 18 miles from Inverness).** Hon. D. N. Weir, English Charlie's, Rothiemurchus, Aviemore, Inverness-shire.
- Nairnshire, Morayshire, Banffshire.** R. Hewson, Eildon House, Station Road, Banchory, Kincardineshire.
- Dee faunal area.** Joint recorders: N. Picozzi, Unit of Grouse and Moorland Ecology, Blackhall, Banchory, Kincardineshire; W. Murray, Culterty Field Station, Newburgh, Aberdeenshire.
- South Kincardineshire, Angus.** G. M. Crichton, 23 Church Street, Brechin, Angus.
- Perthshire.** Miss V. M. Thom, 19 Braeside Gardens, Perth.
- Kinross-shire.** J. H. Swan, Vane Farm Reserve, Kinross.
- Isle of May.** Miss N. J. Gordon, Nature Conservancy, 12 Hope Terrace, Edinburgh 9.
- Fife (east of A90).** D. W. Oliver, 4 Lawview Cottages, Abercrombie, St Monance, Fife.
- Fife (west of A90), Clackmannanshire, East Stirlingshire.** T. D. H. Merrie, West Faerwood, Stirling Road, Dollar, Clackmannanshire.
- West Lothian.** Dr T. C. Smout, 93 Warrender Park Road, Edinburgh 9.
- Forth islands (except May), Midlothian.** R. W. J. Smith, 33 Hunter Terrace, Loanhead, Midlothian.
- East Lothian, Berwickshire.** K. S. Macgregor, 16 Merchiston Avenue, Edinburgh 10.
- Peeblesshire, Roxburghshire, Selkirkshire.** A. J. Smith, Glenview, Selkirk.
- Clyde faunal area, North Argyllshire, Skye, Inner Hebrides.** Prof. M. F. M. Meiklejohn, 16 Athole Gardens, Glasgow W.2.
- Dumfriesshire.** J. G. Young, Benvannoch, Glencaple, Dumfriesshire.
- Kirkcudbrightshire, Wigtownshire.** A. D. Watson, Barone, Dalry, Castle Douglas, Kirkcudbrightshire.

Faunal areas and divisions are shown on the map in 'The Birds of Scotland.' It will be seen that the Hebrides and Skye are treated separately from the rest of the admin-

istrative counties in which they lie.

BTO Ornithological Atlas. The BTO has at last been successful in getting the grants it needs to carry through the Atlas project and to give it the full attention it requires and deserves. Preliminary work has been going ahead, and as reported in *Scottish Birds* the Scottish coordinator is Christopher G. Headlam, Foulis Mains, Evanton, Ross-shire. Any completed or partly completed cards for 1968 not already returned should now be sent to local organisers or to Mr Headlam. There has been a gratifying response, but there are some serious gaps and helpers are needed in nearly all areas. Mr Headlam will be happy to send details to anyone who can help. It is hoped to have exhibits at the SOC Conference showing the methods and progress of the Atlas project, and he will be there to talk about it.

Operation Seafarer. This important survey of British seabirds (the main census is next year) has already been described (*Scot. Birds* 5: 3-4). The Seabird Group has now appointed David R. Saunders, formerly Warden of Skomer, as fulltime organiser. The importance of the Scottish part of the census may be judged from the fact that it was hoped to instal him in the Scottish Centre for Ornithology, 21 Regent Terrace, Edinburgh. Regrettably this proved impracticable, but one of Mr Saunders's first moves was to make a tour of Scotland to seek out some of the people who might be able to help him. If you have not yet been contacted and can offer help of any kind, especially in the remoter areas, he would be very glad to hear from you at "Tom the Keeper's", Marloes, Haverfordwest, Pembrokeshire (telephone Dale 202). Please do not think that everything is now tied up and your help is not needed—there are still surprising gaps.

The importance of this census, which is being organised in close cooperation with the BTO Atlas project, is illustrated by the *Torrey Canyon* disaster and the difficulty of getting reliable information on breeding populations for earlier years. Appropriately, Operation Seafarer is being financed largely by the *Torrey Canyon* Seabird Appeal of the World Wildlife Fund, but also by the RSPB and other societies.

Its whole success depends very much on the cover achieved in Scotland. That so much money, well over £7000, is available to support it should be sufficient guarantee of its value, and we commend it to all active ornithologists in Scotland.

Costly eggs. On 7th May 1968 at Dornoch Sheriff Court two men, one from Dublin and one from Middlesex, were fined £100 each for taking five eggs from the nests of two pairs of Golden Eagles.

The weight of the penalty should undoubtedly deter others from similar forays, for it received wide publicity, but the case was remarkable in several other ways. One of the men, Leslie Willoughby Montgomery, who created a minor sensation in court by pleading to be allowed to keep the eggs, was reported to be 72. At one eyrie he climbed within 15 feet of the top of a 150-foot crag without a rope; and at the other he went a quarter of the way down a cliff twice that height, supported only by a life-line held by his companion Leslie Theodore Thomas Davy. "Man risked life for eagles' eggs" said the headline on the front page of the *Scotsman*.

While one has a sneaking admiration for such a display of misplaced zeal by a man of 72, it is satisfactory to find that the law actually has teeth where organised taking of the eggs of rare birds is involved. For too long the penalties, even if the offender is caught, have seemed so trivial as to be unlikely to make any real contribution to protecting rare species.

In addition to the fines the court ordered the forfeiture of the eggs and the equipment used to obtain them, which included a very remarkable map of many nesting sites of eagles and other species in northern Scotland.

Fair Isle Bird Observatory Appeal. Details of this appeal for £10,000 towards the £36,000 needed for the new observatory buildings were given in the summer issue. Many donations and covenants have already been received, including £1000 from the Dulverton Trust and £1000 from the Wildlife Fund of the National Trust for Scotland, but there is still quite a way to go to the target. If you have not already made your contribution to the future prosperity of the island it is by no means too late to send it to 21 Regent Terrace, Edinburgh 7.

Current literature. Attention is drawn to the Scottish interest of the following items:

North Solway Bird Report No. 2—1966. A. D. Watson and J.

G. Young, 1968. 11 leaves. A mine of information, with some special titbits.

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- Autumn movements and orientation of waders in northeast England and southern Scotland, studied by radar. P. R. Evans, 1968. *Bird Study* 15: 53-64.
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The breeding birds of North Rona

M. J. H. ROBSON

(Plates 8 - 10)

Introduction

The small, remote island of North Rona lies about 45 miles northeast of the Butt of Lewis. It is one of the best seabird stations in the Hebrides, and one of the most interesting on the Scottish coasts. Several sufficient topographical descriptions are available, but the history of the island remains obscure. North Rona is difficult to reach. Elwes (1869), who could not find a boatman prepared to chance the journey, said rather sourly: "I do not think any birds would be found there except the common sorts, as I inquired particularly about them from the inhabitants of Ness, who go there every year to fleece the sheep." Naturalists soon began to make quick visits to Rona, but Harrisson (1932) wrote: "I cannot find that any but Barrington, who spent two nights, have been so unwise as to camp there, so that previous ornithological visits have been of less than a day's duration." During the last 35 years, however, there have been several stays of much greater length (see appendix 2).

In this paper I have tried to give the recorded history of each species that has bred or may have bred on North Rona; I have included observations made during my own visit, 28th July-19th August 1966. Migrants seen during this period, though outside the scope of this paper, are listed in appendix 1. The special attention given to two species, the Fulmar and Leach's Petrel, partly reflects the direction of my own interest; but the status and breeding habits of these petrels deserve particular study. In comparing previous records I have tried to clear up minor confusions, some of which are caused by varying descriptions of areas unnamed on the Ordnance Survey map. Bagenal & Baird (1959) gave reference



FIG. 1. Sketch map of North Rona

numbers to named and unnamed localities, and I have used their numbers in the absence of map names. The several attempts at estimating bird numbers have also to be treated cautiously; in the case of a partial census, the effects of local movement, natural changes in habitat, and disturbance have to be kept in mind, but even so it is impossible to reconcile some of the figures quoted. With the permission of the Nature Conservancy I have quoted from the manuscript journals of J. A. Harvie-Brown, which are fuller than, and in some instances different from, his published accounts, but I have not assumed that the manuscript version is always correct. I have found the papers of Ainslie & Atkinson (1937a, b) and of Bagenal & Baird (1959) particularly useful. The latter briefly reviews some of the earlier records.

I wish to thank the Nature Conservancy in Edinburgh for

advice, assistance, and use of the library; Miss Helen Nisbet for maps of the village; and Mr R. Atkinson for much helpful information and comment. My special thanks go to those who helped me to reach North Rona.

Ornithological history

Most of the references to birds in the early records of North Rona concern man's depredations, which continue to a lesser extent today. In the 16th century the rent for Rona was in part paid with "mony reistit [dried] fowlis" (Monro 1549). The 17th century account of John Morisone (1845) (also given by Swinburne (1884), whose version differs in spelling and is not so full) is as follows:

"There are also, seventeen legues from the Lews, and to the north of it tuo islands called Saliskerr, which is the westmost, and Ronay fyve miles to the east of it; Ronay onlie inhabited, and ordinarlie be five small tenants. Ther ordinar is to have all things comon; they have a considerable growth of victual, only bear. The best of ther sustinance is rouen, which they take in girns, and sometimes in a stormy night they creep to them, where they sleep thickest, and throwing some handfulls of sand over their heads as if it were hail, they take them be the necks. Of the grease of those fowles, especially the soline goose, they make an excellent oyle called *gibanirtich**, which is exceeding good for healing of anie sore or wound or cancer either on man or beast. This I myself found true by experience, by applying of it to the legg or a young gentleman which had been inflamed and cankered for the space of tuo years. And his father being a trader south and north, sought all phisicians and docters with whom he had occasion to meet, but all was in vain, yet in three weeks tyme, being in my house, was perfectly whole be applying the aforsaid oyle. The way they make it is, they put the grease and fatt into the great gutt of the fouell, and so it is hung within the house until it run in oyll. In this Ronay there are tuo little cheapels where Sanct Ronan lived all his life tym as an hermite."

Towards the end of the 17th century it was noted that the rent was partly found in seabirds' feathers (Harvie-Brown 1888). A hundred years later the island's population had dwindled to one family. In 1797 (Sinclair 1791-99) Rona was rented "by one of the Ness tacksmen at £4 Sterling per

*This word originally applies to a St Kilda product *Gibeane Hirtich*—Gannet pudding of St Kilda. "Giben of St Kilda, i.e. the fat of sea-fowls made into a pudding in the stomach of the fowl, is also an approved vulnerary for man or beast" (Martin 1703). A fuller description is given by Macaulay (1764): "Before the young Solan-Geese, which they call Goug, fly off, they are larger than the mothers, and excessively fat. The fat on their breasts is sometimes three inches deep. The inhabitants of *Hirta*, have a method of preserving their grease in a kind of bag, made of the stomach of the old Solan-Goose caught in *March*. In their language it is called *Gibain*; and this oily kind of thick substance, manufactured in their way, they use by way of sauce, or instead of butter, among their porridge and flummery. In the adjacent islands they administer this oily substance to their cattle, if seized with violent colds, or obstinate coughs; and it is the general belief, that the application of the *Gibain*, in such cases has a very good effect." See also Buchanan (1793, p.126—'*giban hirtach*').

annum, who regularly, every season, sends a large open boat, and brings from it some corn, butter, cheese, a few sheep, and some times a cow, besides some wild-fowl and feathers." This open boat also visited the neighbouring rock of Sula Sgeir "for fowls and feathers." Later in the early 19th century, the tenant on Rona "was bound to find an annual supply of eight stone of feathers"; and "to hunt wild fowl and catch fish" were daily tasks (MacCulloch 1824). In the later 19th century (Harvie-Brown 1885), temporary inhabitants reported "the birds as in thousands all over the islands of Rona and Sulisgeir", and probably killed many. In 1883 Swinburne's pilot told him that "some years ago he had lived for some time on Rona, tending the few sheep that are on the island, and that a great many birds bred there."*

Long after these occasional residents, the annual one-day visit of shepherds was an opportunity to kill in sport a great many seabirds; in the summer of 1966 I was told that gulls' nests had been freely destroyed by visitors. Since 1883, when Swinburne, the first of the 'modern' naturalists, visited the island, ornithologists and others have disturbed with their spades and their hands, as well as their presence, the breeding habitats of several species. Mere exploration of an island so extensively populated by birds must inevitably result in some loss. It should be remarked here that the variety of habitat within the small, densely colonised island, thrusts several species very close together, and signs of congestion are thus recorded: Fulmars incubating gull's eggs; an Oystercatcher's egg in a tern's nest; Leach's Petrels, Storm Petrels, Fulmars, Starlings, Rock Pipits, Great Black-backed Gulls, and formerly Black Guillemots and Puffins as well, all breeding in the old village; and Puffin burrows close beside breeding ground of the Great Black-backed Gull.

The distribution of seabird colonies in 1966 remained broadly the same as in 1958. Consideration of the records and my own observations suggest that Bagenal & Baird's (1959) table III, describing changes in the bird population on Rona 1931-1958, may be misleading. Only for the Kittiwake can a definite increase be asserted, though other changes are probable. Estimates of bird numbers in early June 1958 were

*A former inhabitant of the island noted some of these in a letter: "Dhu Scarve" (Shag), "Ian Dhu" (probably Guillemot or Black Guillemot), "Gille Bride" (Oystercatcher), "Sea Gulls", "Falk" (Razorbill, cf. Martin's reference in *A Late Voyage to St Kilda*), "Colk" (Eider, cf. Dean Monro's description of the "colk" on Sula Sgeir), and "Starnaig" (Tern, probably Arctic). He also said: "My wife went out at breakfast or dinner time and brought in as many eggs as she wanted. Yes, wild fowls' eggs; they were all eatable, I assure you, and as tender as hens' eggs. She just had to go a few paces from the house and pick up as many as she wished for."

Letter dated 24th December 1885 from E. MacLeod, Ness, to A. Carmichael, now in Edinburgh University Library.

made by J. M. Boyd, J. MacGeoch, D. N. McVean and D. A. Ratcliffe and are given in systematic typescript lists of the birds of North Rona by Dennis & Waters (1962).

SYSTEMATIC LIST

Leach's Petrel *Oceanodroma leucorhoa*.

Swinburne's Lewis pilot, who had lived on Rona, said that among the many birds breeding there was "a bird which answered to the description of a petrel of some sort". Swinburne (1884) described how he "made straight for the place where the pilot said the petrels bred." This was the village. He and his companions moved large stones and scraped away earth with their hands, "guided by the strong musky odour which pervaded the inhabited burrows which run through and through the thick walls of the old buildings". After five minutes "the first petrel with its egg was brought to light". Swinburne, delighted at finding the second British colony of Leach's Petrels, dug out 22 more, with their eggs. He considered that they "could easily have obtained a great many others had we wished", and concluded that the colony was "one of the principal breeding stations of this species in the Eastern Hemisphere, and certainly the largest in Great Britain."

In 1885, Harvie-Brown (1885), regretting that he had no crow-bar, took two spades from the house in which Rona's last inhabitants had recently lived, and "worked nearly 1½ hours at the Petrels" in the village. He noted that he got seven petrels "taken on their eggs". He actually found nine eggs, "but had one broken by Angus foot", while another had no bird with it. Of seven petrels, which were all females, he released three and kept four, one of them alive. His companion found 15 eggs. "Difficult to estimate numbers, but as we took in all 24 eggs in 2 hours in a space—I would say—one fourth of the whole available nesting ground, we may make the very imperfect calculation of about 100 pairs." However in a note he added: "This will be under the mark rather than over it, may not really be more than half". He thought that more birds might be found breeding elsewhere on the island. Swinburne had indeed found a burrow on Toa Rona. When Harvie-Brown (1886-87) returned in 1887 he went to the village, "the Fork-Tailed Petrels' end of the island", where the birds were heard churring in the walls of the chapel. They dug for an hour, but found the petrels more inaccessible. "We took 6 eggs and I kept (killed) 3 birds". These, too, were females.

The Duchess of Bedford had to contend with Fulmars, and thus searched in vain for the smaller petrels, though in 1914 she "detected a Petrel in the ruined walls but was unable to get at it."

In more recent years descriptions of petrel-busy nights become frequent. One of the first, that of Reid (1931), is not enthusiastic: "To one who has never experienced it, a night with the fork-tailed petrels is one of which the discomfort—one might almost say horror—can hardly be described." Harrisson (1932) wrote that, "we found to our cost" that the ruins "are the haunt of Fulmar and Fork-tailed Petrels and dead sheep." He estimated 120 pairs of Leach's Petrels.

Ainslie & Atkinson (1937b), the first to make a thorough study of the species on Rona, cite an unpublished note of Harrisson's to the effect that on St Kilda there are "certainly many more than on North Rona." In 1931 Harrisson had examined 30 burrows and found 3 addled eggs; infertility and bad brooding were noted by Ainslie & Atkinson in 1936, and among the 30-40 nests examined they found two which had "old cracked eggs alone" and one with "two old eggs as well as the fertile egg of the current year". Another nest had "an old egg and the skeleton of a young chick". Two eggs among those laid in 1936 proved infertile. By

marking occupied burrows with a latticework of matchsticks they eventually estimated 327 pairs for the "ruined area", and 50 pairs elsewhere. There were many at the storm beach.

Darling (1940) considered the main colony was in the chapel and the village; petrels were also breeding at the storm beach. He thought that collisions of birds in flight at night were inevitable "when two or three hundred are flying . . . within a restricted space." Smith (1954) "had the impression of a flourishing colony", having dug out "a pair, a single adult and one young Leach's . . . in quick succession."

Bagenal & Baird (1959) recorded the results of their mistnetting in 1958; their conclusion was that the colony was far bigger than when last estimated in 1936. Donald (1959), a member of the same party, wrote: "Leach's Petrel now breeds on Rona in far greater numbers than had been observed by previous visitors, and this would suggest that the island is now the largest British breeding station of the birds." According to Williamson & Boyd (1963), "the village, with its myriad holes and crannies in the walls, is the centre of one of the most important breeding-stations of Leach's fork-tailed petrel in the eastern Atlantic." Swinburne's opinion of 80 years before was thus restated.

Bagenal & Baird found Leach's Petrels in many other parts of the island—in the stone cairns, at Buaille na Sgrath, at Geodha Leis, in the old wall at the foot of Toa Rona and at the cairn on top of the hill, and over the whole of Fianuis, particularly at its northern end.

In 1966 I found that the distribution of petrels had changed little from that of 1958. The greatest numbers were in the village. However, I found none in the stone cairns, although they were flying nearby, and very few at Geodha Leis. There were a few in the ruined huts on Scepull, and in the wall running from the cultivation strips across the top of the island to the northwest cliffs. There was a scattered colony in the walls and huts of Cro Mhic Iain Choinnich. My other observations in 1966 are summarised as follows:

The village colony. The village consists of three distinct groups of buildings; most of my observations were made in the eastern section, Group A (so named, for convenience, by Nisbet & Gailey 1962), where I marked burrow entrances by the matchstick method of Ainslie & Atkinson (1937). The nature of the village ruins concentrates the petrel colony within a small area, thus making it easy to watch superficially. It is by no means so easy to examine burrows, perhaps more aptly called cavities, since these wind deeply into the ruined walls and cannot be opened up without considerable damage to the buildings and probably causing birds to desert their nests. It may be that the concentration of petrels helps to give the impression of large numbers.

Burrows. Excavation of earth sometimes betrayed a burrow. Many were close to Fulmar nests. I counted 12 burrow entrances within the main 'room' of Group A, and 6-8 elsewhere in the same group. These numbers are very approximate, as not all entrances indicated separate burrows and some were rarely used. Some burrows evidently have more than one entrance and some entrances probably lead to more than one burrow.

Calls. There are three common calls, each described by Ainslie & Atkinson (1937b). The flight-call has several variations, one of which is also made in the burrow. Recordings made in Group A enabled me to distinguish distinctly different patterns of flight-call, but in only one case could one pick out an individual. This bird had "lost its voice" and produced an odd falsetto sound, no doubt similar to that mentioned by Ainslie & Atkinson. It was possible to track this bird's course in flight and to note the times of its first and last calling. Occasional flight-calls occur during the day in a burrow.

Aerial activity. The night flight of Leach's Petrels over their nesting

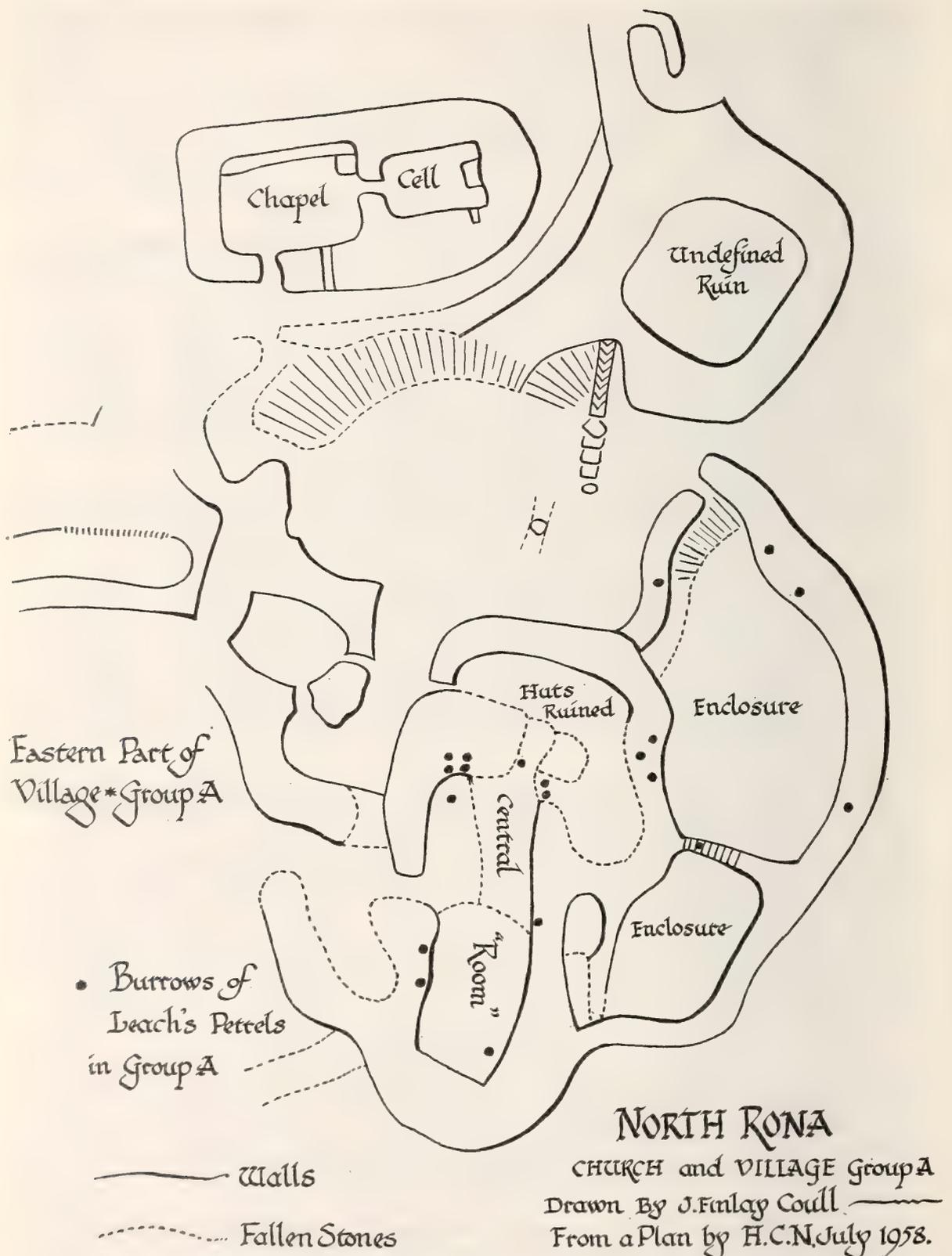


FIG. 2. Sketch map of North Rona chapel and village area, showing burrows of Leach's Petrels in Group A.

area has been described by several observers. Arrival time in late July and early August was usually about 2330 hrs BST, while departures became noticeable at 0230-0300 hrs. Differences in weather conditions caused little change in nocturnal activity, except that on a night of gale

and rain no birds were seen or heard. Definite flight routes seemed possible, as a result of plotting the falsetto cries, which remained within the general area of Group A.

Population. Owing to the difficulty of the ground I uncovered only four burrows in the village, and 15 elsewhere. None contained egg or chick, though there were small pads of dead grass in each at varying depths, and in six of the burrows there were two birds. All these burrows, betrayed by churring, were near the edge of the colony, and it may be that the birds were non-breeders. I found immature birds in recesses under large stones; these and other non-breeders form an unknown proportion of the colony.

Bagenal & Baird's (1959) record of a great increase deserves comment. Much the same applies as with the Fulmar, described below. An estimate of the population based on the numbers of birds captured and recaptured in mistnets in 1958 was set beside the number of occupied burrows counted in 1936, and the conclusion drawn that the colony was in 1958 "probably about 10 times as large" as in 1936. However, non-breeding birds, as well as 'visiting' by birds not belonging to the colony, disturbance, failed breeding, and flight movement within the village area, should all be taken into account, in addition to the different times of the season at which counts are made and the difference in what is being counted. At present there seems to be too little evidence to show that the colony is any greater than it has been before. The status of breeding Leach's Petrels on Rona remains unknown, as well as many details of their breeding behaviour. Harvie-Brown's total of six eggs after an hour's digging in 1887 does not indicate a dense breeding colony, and nothing in the distribution of burrows in 1966 indicated that it had enormously increased.

Storm Petrel *Hydrobates pelagicus*.

Harvie-Brown (1885) found two Storm Petrels when digging for Leach's Petrels in the village in 1885. They were not on eggs, and he "kept these for specimens." He launched some Leach's Petrels into the air, and "would like to have tossed up the Stormy Petrels too in order to compare the flight of the two species, but greed, and the fact that they had not previously been recorded as inhabiting Rona prevailed". Storm Petrels, he thought, were "sheltering among the corridors of the Fork-tailed petrels' colony". He made no particular mention of the species on his second visit in 1887.

Barrington in 1886 found a large colony "on the western end", possibly Buaile na Sgrath or Cro Mhic Iain Choinnich, and one or two in the Leach's Petrel colony "on the south-east side"—probably the village. "The churr of the stormies at nights was very loud, hundreds churring under stones at the same time."

Harrisson (1932), who found young and adults under the stone piles southwest of the village but none in the village itself, estimated 80 or more pairs. He saw 50 at sea 25 miles southeast of the island. Ainslie & Atkinson (1937a) reckoned there were 20 pairs in the village ruins, chiefly in the heap of stones east of the chapel, while "many more lay under boulders in other parts of the island", including a large colony in the storm beach. In 1937 a colony in the rough wall across the neck of Fianuis was destroyed by shepherds rebuilding the wall (Atkinson 1938), but Darling (1938), whose camp was set up near this wall, heard "a storm petrel with a peculiar voice" in a dyke, and mentioned "an unknown but considerable population of storm petrels". Thus by 1954, when a Storm Petrel on an egg was discovered by chance in the storm beach, the species was known in most parts of the island. Eggs are usual in early August, chicks at the end of the month.

In early June 1958 one thousand pairs were estimated at the storm beach, later considered by Bagenal & Baird (1959) to be the main colony.

They ringed 82 in one night, and heard churring in the fank, walls, piles of stone on the ridge, boulders at Cladach Cro Iain Dheirg, and on Toa Rona. They caught some birds in the village. Of a total of 105 ringed none was recaptured.

In 1966 distribution was similar to that of 1958. Several birds were nesting in the heap of stones east of the oratory, where it was easy to find an egg, and more were at the base of the south and west walls of the chapel, but I found none elsewhere in the village. They were abundant along the walls of Cro Mhic Iain Choinnich, and there were a few in the rubble on Sceapull. I heard none at the Cladach boulders, but every cairn had one or two eggs. There was a scattered colony on the west side of Geodha Leis. I found no chicks during my stay, but many eggs; only one or two birds were found without eggs. Autumn records confirm that the breeding season is prolonged on Rona. In 1959 young were heard as late as 5th October, and possibly 20th (Boyd 1960).

Fulmar Fulmarus glacialis.

First seen in Rona by Barrington in 1886. In 1887 Harvie-Brown hoped to find the third British breeding colony, but was disappointed. It was 1894, when the first egg was found, before Rona achieved this status (following St Kilda and Foula). In his description Harvie-Brown (1886-87) refers to "six or eight Fulmar Petrels" skimming by the northwest cliffs and occasionally alighting "about 50 yards west of the big Granite cliff." He saw one bird apparently on a nest, dislodged it with stones, and found it had been sitting in a hollow "about the size of a soup-plate" and "apparently ready for an egg". He could not determine whether this was a nest or a resting place. The Fulmars did not fly over the land, so he was unable to shoot any.

By 1910 (Bedford 1910) there were "hundreds" of Fulmars, and they were already nesting "inland" among the ruins and on "sloping ledges of rock". A good many Fulmars were present on 25th August 1910, with some young still at the nest. The Duchess of Bedford (1914) also saw "hundreds" in 1914, but "there were far fewer nesting in the ruined houses than usual", a reduction attributed to recent interference by "two gentlemen".

"The whole island smells of fulmar oil", wrote Reid (1931), who cursed the abundant young: "There is one under almost every rock, at least one in every house, and three in St. Ronan's cell." The Fulmars were similarly described by Harrisson (1932): "Pairs nest commonly in all the ruins, on the flat peninsulas, and even on the grassy hillsides three hundred yards from the sea!" The present situation is much the same, though I found no nests on the open hill-slope.

Harrisson found seven Fulmar skulls in the chapel, "some inches deep in the soil", and concluded that "very few of the young bred in the village ever live to see the water, for they are seldom able to find a way out of the buildings". Describing an unusual flight call given over the ruins thrice in one day, Harrisson (1931) suggests it was directed to fledged chicks trapped in the cell. He estimated 600 pairs for the island.

Stewart (1934) mentions Fulmars nesting among the grass and rocks on the top of the island, and Atkinson (1949) describes a similar situation in 1936. There was then a chick in each corner of the cell, one in the "manse", and 21 "parked indifferently about" the village. Elsewhere there were young in the storm beach, against stones at Buaille na Sgrath, on flat rocks of Fianuis and Sceapull, and "a few" on the west coast. Atkinson (1949) gives a total of 587 chicks in all.

In 1937 Atkinson (1938) found two chicks and a failed egg in the cell, and there were nests on the flat ground, but visiting shepherds brought destruction: "Young Fulmars were killed with a stone or pulled out of the nest and left helpless." Darling (1940), who also remarks on inland

breeding and records a nest in each corner of the cell, "several" in the ruins, and more than 50 at the storm beach, estimated 600 pairs, including "hundreds" on the northwest cliffs. Fisher & Waterston (1941), who do not mention inland breeding in Rona, take 600 pairs as a basis for classifying the island as an "Order 3" colony, i.e. under 1000 eggs laid, with a supposed breeding success "which may well be over 75%."

On the basis of a count of 470 occupied sites in July 1949, Fisher (1952) remarked on the "static" nature of the colony after 1931. In 1953 a reference is made to a census "of at least one thousand breeding pairs" in July 1949, and this was thought a conservative estimate for 1952 (Studdy 1953). In 1954 fifty young birds were found on Fianuis, and most were then ringed. There were five in the cell. In 1958 inland breeding continued in the village, on Fianuis, on Buaille na Sgrath, and at Cro Mhic Iain Choinnich. Colonies were found all round the coast. Five thousand pairs were estimated in early June (Dennis & Waters 1962); Bagenal & Baird (1959) estimated 2166 pairs later in the same month. A huge increase had apparently occurred within 10 years.

A census of a breeding colony of Fulmars is made particularly awkward by the irregular presence of non-breeders throughout the season, and by the difficulty in locating nests. The estimates already recorded here were made at different times of the summer, were concerned with different things, and were sometimes no more than guesses. Conclusions drawn from comparisons between them may therefore be of little use. Bagenal & Baird chose Anderson's (1957, 1962) method of counting in St Kilda: "Each occupied nest site, containing one or two adults or a chick, is taken to represent a breeding pair of fulmars." As this does not take into account non-breeding birds, Bagenal & Baird, like Anderson, observe that "this method would overestimate the successful breeders since many nest sites occupied by birds that were apparently brooding were found to contain neither egg nor chick". They thought that a count indicating "a potential number of breeding pairs", including immature and other non-breeding birds, was useful, and that it was better to have "a number that is accurate . . . than to have a count that, because it tries to have a closer connection with the breeding birds, must have a larger proportion estimated." Whatever the use of such a count, it nevertheless seems misleading to compare the 1958 figure, reached in June when many non-breeding birds are present, with that of 1936, which was made much later in the season and was concerned only with chicks. To draw any conclusion from the comparison would require a special examination of the history of a Fulmar colony between June and August.

Since breeding success among Fulmars varies according to the size of the colony (Fisher 1952), it should be decided whether in this respect Rona consists of one large colony, or of several of varying size. In spite of the tendency of writers, including Fisher & Waterston (1941), to consider Rona as a single unit, and of Fisher's (1952) arbitrary definition of distinct colonies as those separated by at least a mile of sea or coast, I incline more to the view that there may be many separate colonies, many of them quite small. If this is so, breeding success will vary in different parts of the island; thus 2166 potential breeders in late June may be not greatly in excess of the number required for there to be 587 chicks in August (see table 1). The large numbers of Great Black-backed Gulls and the possibility of human interference must also be remembered. The Duchess of Bedford (1914), Atkinson (1938), and Bagenal & Baird (1959) all report that human interference considerably reduced fledging success. This may have been so in 1966 as well.

Distribution of nesting sites in 1966 was similar to that of 1958. No new colonies were found. I made no attempt to count Fulmars on the northern cliffs.

By mid August 1966 some chicks had been deserted by their parents. In one or two small colonies there was a noticeable diversity of age—

Table 1. Comparison of number of occupied Fulmar nest sites on North Rona in late June 1958 and number of chicks in August 1966, illustrating the unreliability of basing estimates of a change in population on a simple comparison of two sets of figures, and suggesting that there may have been little change in population since 1936. The table continues the history of specific breeding areas and gives further evidence on the relation between numbers of occupied sites in June and chicks in August, but no decline of population can be recorded as a result of the comparison.

	Occupied sites 1958	Chicks 1966	
Sceapull	20	2	
Buaile na Sgrath	43	15	
Leac na Sgrob	8	3	
Village	41*	26‡	* "some half dozen chicks" after interference ‡ +2 infertile eggs cf. 26 chicks 1936
Stoc a Phriosain	13	1	
Heallair	3	0	
Poll Heallair	34	6	
Pollan Uisge	3	0	
Poll Thothatom			
West	22	0	
West side	4	0	
Centre	178	25-30	
East side	37	7	
Poll Thothatom to			
Sron an Tinntir	2	0	
Geodha 17	0	0	
Geodha 18	6	2	
Geodha 19			
East side	6	1	
West side	0	0	
Geodha na Breatuinn	2	0	
Ridge to Fank wall	9	1*	* in fank
Fianuis			
Centre	15	13	
East coast	27	7	
Storm beach and west			
coast	38	21	cf. 50+ nests 1939
North	49	33	
Ton Breighe to Geodha 56	13	1	
Cro Mhic Iain Choinnich and coast	29	14	
	<hr/>	<hr/>	
Occupied North Cliff sites 1958	602	c.180	
	1564		Based on Bagenal & Baird (1959) total of 2166 occupied sites
Estimated North Cliff chicks 1966		467	Assuming same proportion of 1564 sites as 180 is of 602
	<hr/>	<hr/>	
	2166	647	cf. 587 chicks 1936

as much as three weeks. Chicks in the village were variously placed, sometimes very difficult to find, and often deep underneath in the ruined huts. There were several bare scrapes in the walls which photographs taken in 1958 show were nest sites then as well as resting places. The

four corners of the cell had chicks. The positions of young in the village suggested that the more concealed sites were favoured, but elsewhere, at Buaille na Sgrath, Cro Mhic Iain Choinnich, and the northern and central parts of Fianuis, chicks were in sites fully exposed to the gulls. A young Fulmar in the village reacted in various ways to interference; it was undisturbed by Great Black-backed Gulls nearby, it coughed at Leach's Petrels landing nearby at night, and at my approach, though I might be 20 yards away.

Fulmars in Rona have been found incubating gull's eggs. The Duchess of Bedford (1914) saw a Fulmar settle on an egg between two slabs and found it be a Herring Gull's egg which "reeked of Fulmar". Boyd (1959), in June 1958, found a Fulmar incubating three eggs in a Great Black-backed Gull's nest on Fianuis. Five minutes after being disturbed, the Fulmar, unmolested by the many gulls around, returned to the eggs it could not cover. Though Fulmar eggs may be carried off by gulls, young Fulmars on Rona do not seem to be troubled; according to Atkinson (1949), they are "practically immune" from the Great Black-backed Gulls, probably because of their oily defences.

On several occasions in the village an unusual call marked a nest where feeding was in progress. The only description of the sound I have seen is Perry's "a continuous, monosyllabic buzzing note" (Fisher 1952). The noise sometimes lasted 10 minutes; it was made by the chick, in the open or underground, and at moments of irritation or excitement rose high and urgent. My own near presence, or that of a microphone, which at other times received a jet of oil, did not interrupt this sound. Adults visited young once or twice a day, and were seldom present at night. If I disturbed an adult it would often climb to the nearest high point and try to take off, but it frequently failed and floundered down into the thick weed. Atkinson (1949) also noted the difficulty with which 'inland' Fulmars left the ground, and I have seen the same thing on the much steeper ground of Dun in St Kilda.

Fulmars have been recorded at Rona in October since 1938, usually in large numbers. In 1959 there were very many on the cliffs but none inland; they left the cliffs daily, forming large rafts in the lee of the island (Dennis & Waters 1962). In 1960 there were well over 100 (*loc. cit.*). A census in 1962 gave 838 birds on the west cliffs on 10th October; and 831 on the east side, with 60 on Fianuis, on 13th October (*loc. cit.*). Assuming that the counts were of different birds, and including another 800 or so patrolling the cliffs, as well as hundreds visible out at sea, it is possible there was a total of 3500 birds. They seemed to be increasing—"certainly they became more numerous inland and around the ruins." This large autumnal gathering was also noted by Darling (1939a), who thought seal offal might be the attraction: "I have seen the fulmars devouring seal excrement and picking up small portions of the carcasses of calves." He considered his estimate of 600 breeding pairs possibly too low, because "the fulmars do not leave Rona in the winter as they do from other breeding grounds, and when they are the only birds about the cliffs, it is obvious there are at least 3000-4000 birds present."

Shag *Phalacrocorax aristotelis*.

Seen by Swinburne (1884) and described as "innumerable" by Harvie-Brown & Buckley (1888), who saw them "lined along the lower debris close to the rocky coast" and whose 1885 party "got a few young ones." They were below the Puffins on Fianuis, and in the caverns. There were "thousands" in 1910 (Bedford 1910), and Harrisson (1932) estimated 300 pairs, describing them as "astonishingly tame". They were numerous all round the island in 1936 (Atkinson 1949), and especially common along the south side; there were three nests on the west coast. One chick was seen to regurgitate 26 small fish. Darling (1938) estimated 1000 birds. On 3rd August 1954 most young were fledged, but there was

one nest with five eggs under the large boulder on Fianuis. In 1958 Bagenal & Baird (1959) found Shags breeding in many places, especially among fallen rocks at the heads of geos, which made it impossible to count the nests. However, 748 adult and immature birds were counted, and the population therefore considered "fairly static". In 1966 parties of Shags were common about the inlets of the south coast and on either side of Fianuis, sometimes 70-100 in a group. I found a nest with one egg and a newly-hatched chick at Geodha 19 on 8th August.

Eider Somateria mollissima.

The records give no clear picture of the status of this species on Rona. Swinburne (1884) found it "very plentiful" and "took a nest" in the long grass. Barrington saw a few males. Harvie-Brown (1885) on his first visit wrote: "Eider Ducks were common and the men took eggs". In 1887 he saw them "lumbering along, or squatting off their nests" and "constantly crossing my path". He noted a few young, one on a Fianuis pool. In 1910 "numbers . . . frequented the bays" in July, but were gone in August, and in 1914 there were many nesting (Bedford 1910, 1914). Harrison (1932) saw large flocks on 3rd September, and estimated 60 pairs, but Atkinson (1949), who found old nests and only saw the birds offshore with well grown families, suggested 20 pairs. Darling (1940) thought there were very few and that they fell victim to the gulls. In 1954 five females were seen, two with single chicks, one with two chicks (Smith 1954). Twenty pairs were counted in early June 1958 (Dennis & Waters 1962); later in the month Eiders were seen regularly, many nests were found in the village and on Toa Rona, and adults with chicks were all round the coast; no numbers are given (Bagenal & Baird 1959). In 1966 I saw very few birds on the sea, and found only two old nests.

Oystercatcher Haematopus ostralegus.

Swinburne (1884) found several pairs and "took a nest" on the edge of a cliff: "I never saw an oystercatcher's nest in so exalted a position before". Harvie-Brown found them "very numerous and aggressive", noting them especially "amongst the Puffin slopes and loose stones" on Fianuis. He added eight to the ship's larder, and could easily have got eight more, for "perhaps nowhere have I seen them so numerous and tame", but he "disliked the job", and spared the rest. He added that they tasted like Teal. The Duchess of Bedford (1910, 1914) saw many; Harrison (1932) estimated only eight pairs, seeing 15 birds flying south on the east side. In 1936 (Atkinson 1949) there were 30 adults and a few young. Smith (1954) saw many, apparently with young. Bagenal & Baird (1959) saw Oystercatchers along the rocky shores only, except for some in the grass at the edge of the west cliff, a popular haunt of waders. Nests with eggs were found, and an egg in an Arctic Tern's nest; 45 birds were counted. In early June 1958 under 20 breeding pairs were recorded (Dennis & Waters 1962). In 1966 I found a pair frequenting the edge of the west cliff, 1-2 pairs on the south coast, and 1-2 pairs on Fianuis.

Great Skua Catharacta skua.

This species is the latest to colonise Rona*. On 10th May 1965 (Dennis & Waters 1965) two nests were found; in 1966 there were seven adults and one dead in the grass, but no young birds were seen. Diving attacks were regular to the end of my stay. Two birds seen on 10th May 1959 may have been the first colonisers.

* Dougal (1937) mentions "settled colonies of gulls, kittiwakes, gannets, guillemots, skuas or 'black Johns'" in 1927; 'black John' may be a mistranslation of 'ian dubh' (black bird), a name used in the Hebrides for various seabirds, particularly the Guillemot. Dougal gave only casual attention to the birds of Rona, but "the presence of a group of thirty to forty crossbills excited much interest."

Great Black-backed Gull *Larus marinus*.

Descriptions of gulls on Rona are a little confusing. In early times gulls were certainly present; MacCulloch thought the gulls "proper tenants" of Rona.

At present the dominating species on Rona. Swinburne (1884) remarked on "a large colony of these birds on the low point at the western end of Rona, just below where the ruins are situated". He found the ground littered "with feathers, nest material, etc.", young birds were hiding under stones, "while the old ones created a terrible din overhead" as they dived at the visitors. A similar situation prevails today. In 1885 Harvie-Brown, who did not explore this part, went to Fianuis, where Great Black-backed Gulls "were apparently in a colony, but we did not reach their locality". He reckoned a possible 25 pairs. In 1886 Barrington found the species "breeding in larger numbers than I have seen it anywhere on the British coasts". On his second visit in 1887 Harvie-Brown gave only cursory attention to the gulls.

It is surprising to find the species in 1910 and 1914 (Bedford 1910, 1914) "in smaller numbers" than the Lesser Black-backed Gull, especially as Harrisson (1932) found the former "too numerous". His 70 pairs were recorded at the end of August, when many birds had probably left the island. Atkinson (1938), who thought them "the only birds whose numbers would be better thinned" and noted that they were not touched by shepherds though damage to lambs was suspected, estimated at least 250 pairs in various colonies. He remarked on breeding between Scepull and the village. Darling (1939b, 1943) first estimated 500-750 and later 700-1000 pairs; the majority were on Fianuis, where they heavily manured the ground. In 1958 there were still "great numbers" (Bagenal & Baird 1959); there was breeding on Scepull, Buaile na Sgrath, the whole southern slope, and on Fianuis. A total of 656 birds is given. A count early in June 1958 (Dennis & Waters 1962) gave 150 pairs. In 1966 the breeding grounds were similar, though the advanced season made accurate description difficult. Nests on the south slope were scattered and mostly below the height of the village. Minor concentrations occurred at Heallair, Pollan Uisge, and Sron an Tinntir. There were no birds on Scepull. Fianuis was thickly and generally populated. No accurate count could be made of the total numbers, but there were frequently 50-60 birds on the fank slope, 150-200 on the north part of Fianuis and 250-300 on the centre part, 60-70 along the south slope. There were several pairs in and around the village.

Recent history of the species on Rona begins therefore with the colony established at the southwest corner and the minor group on Fianuis. It has seen an extension of breeding ground so that now almost the whole island is occupied, and an increase of numbers to the present abundant population. At the start, however, Barrington remarked that Rona probably held the largest British colony, a view repeated by Darling (1939b).

The abundance of such a powerful species must have its effect on the entire fauna of the island. Many observers have remarked on this gull as a predator. Harrisson (1932) said the gulls "take hundreds of Puffins and young Kittiwakes," and Ainslie & Atkinson (1937a), finding many carcasses of the same victims, concluded that the number of gulls "seemed quite disproportionate to the size of the island and the rest of the breeding population." Darling (1940) saw the gulls prowling among the Puffin burrows, and calculated that 500 gulls would take a total of 250 Puffins a day. In 1966 I was surprised to find very few carcasses. One count produced three Puffins and eleven Kittiwakes, and another two Puffins and nineteen Kittiwakes, not necessarily all victims of gulls.

The movement of the species in late summer and autumn also deserves attention. In 1910 the birds were present in late August, but Ainslie &

Atkinson (1937a) noted that they began to leave as soon as the young could fly, so that after 12th August only 70 adults remained of a former 500 or so. Darling (1940) considered that these gulls came and left with their prey, the Puffins, stating that the departure is "almost synchronous", the gulls disappearing "almost immediately the puffins left the cliffs." The few remaining preyed on young Kittiwakes. Later, 200-300 returned in September to take advantage of the seals. In 1966 the Puffins had gone by 8th August, but gull numbers did not drop noticeably.

Herring Gull *Larus argentatus*.

Swinburne (1884) found "several pairs" of Herring Gulls. Harvie-Brown (1885, 1886-87) mentions "a few" on his first visit, but describes a very different situation in 1887, for then Herring Gulls were abundant, "perched on distant vantage ground or in continuous motion overhead and around us". Most, if not all, were on Fianuis, as were the other gull species. The Duchess of Bedford (1910) remarked on Herring Gulls' nests in 1910, and noted an increase of birds in August, but in 1914 there were "comparatively few". Harrison (1932) estimated a possible 30 pairs. There were about 20 pairs in 1936. Darling (1940) reported a few, nesting at Sron na Chaorach and at the north tip of Fianuis. The former site was occupied in 1952, and both in 1958, when there was also breeding near the northwest cliffs. In 1958 (Bagenal & Baird 1959) 111 birds were counted at the various extremities of the island, areas north and south of Cladach Cro Iain Dheirg also being favoured, and an increase to 50 pairs was therefore recorded.

I saw little of this species in 1966; 3-4 pairs around Buaile na Sgrath, 2-3 pairs at Sron an Tinntir, 3-4 pairs at the tip of Fianuis, and an occasional bird elsewhere.

Kittiwake *Rissa tridactyla*

The large colony in the caverns of the northwest cliffs was noted by Swinburne (1884). Harvie-Brown (1885, 1886-87) first describes the Kittiwakes as "a very good company", and later speaks of "large colonies on the NW cliff occupying as usual the lower ledges." He mentions "smaller numbers in a geo and cave on the NE side", probably Geodha Mairi, and "large colonies on the west horn" which must be those of the northwest cliffs. Barrington described the Kittiwakes as "abundant, breeding in great numbers". The Duchess of Bedford recorded "thousands" in 1910, with a good many still present in August. Harrison (1932) estimated 1000 pairs; only adults were present after 28th August, mostly sitting on nest ledges, but five juveniles were seen flying south. Atkinson (1949) said the Kittiwakes were seething, also estimated 1000 pairs, and remarked that they were present on the south coast and that there were two pairs on the west cliffs. He counted occupied and unoccupied nests. He noted that the first young Kittiwake flew on 1st August, and that very soon after there were many corpses. Darling (1940) refers to thousands on the northwest cliffs, especially in the caverns, considering them as numerous as the Guillemots, which in his opinion numbered 25,000. An increase in Kittiwakes from 1000 pairs to 12,000 in two years is scarcely possible, and Darling's comparison between the numbers of Kittiwakes and Guillemots is further evidence that his estimate of Guillemot numbers was much too high. A gale in June 1939 resulted in many Kittiwake nests being washed away (Darling 1943). According to Darling no Kittiwakes were nesting on Fianuis though they were "in many places round the island". Bagenal & Baird (1959) dismiss Darling's estimate, but, using the 1936 figure of 1000 pairs for comparison, conclude that by 1958 there had been a great increase. They give a minimum total of 3388 nests. In place of two pairs on the west coast they give 36, and 34 pairs were nesting on the west side of Fianuis; elsewhere no close comparison with previous records can be made.

Much the same areas were occupied in 1966 as in 1958, but there were one or two minor changes. On Fianuis new colonies were at Geodha 42 and on the large separate stack nearby. At Geodha 17 there were two distinct colonies, and at Geodha 57 there was a small offshoot. Thus a further increase might appear possible, but a limited comparison between the situations in 1958 and 1966 shows that a redistribution of nesting birds is more likely. I was unable to make a useful count of the colonies on the northern cliffs, but elsewhere I counted nests with some care. Table 2 compares the 1958 and 1966 nest numbers in geos counted in both years.

I found in 1966 that young Kittiwakes were prey of the Great Black-backed Gulls and, occasionally, of the Great Skuas. On one occasion a skua killed a young Kittiwake, but was driven from its meal by a gull.

Jackson (1966) remarks that on Foula "by mid August very few birds are to be seen". This was not the case on Rona in 1966.

Table 2. Comparison of number of Kittiwake nests at selected sites on North Rona in 1958 and 1966 counted in both years

	1958	1966
Stoc a Phriosain E	13	60-70
Stoc a Phriosain W	3	12
Poll Heallair	107	82
Poll Thothatom E	8	18
Poll Thothatom centre	33	3
Poll Thothatom W	14	8
Geodha 17	6	42*
Geodha 18	8	E 2
Geodha 19 E	7	8
Geodha 19 W	11	46
Geodha na Breatuinn E	50	25
Geodha na Breatuinn W	79	40
Geodha 45	34	25
Stack	(0)	6
Geodha 42	(0)	10
Geodha 57	24	12
Geodha 58	12	10
	409	409-419

Note. E stands for "east side" and W for "west side".

* Geodha 17 (1966), two colonies: (1) E 16, W2; (2) E 14, W 10.

Razorbill Alca torda.

Regularly recorded. Swinburne (1884), describing it as plentiful, noted that the species preferred the crannies near the top of the cliffs. Harvie-Brown (1885) recorded "a very fair colony" on both sides of the fank slope. There were "thousands" seen in July 1910, but by August the Razorbills, like the Guillemots, had gone. The shepherds on the island in the 1930s shot Razorbills, but Ainslie & Atkinson (1937a) say the species was "fairly numerous"; the "very many" breeding birds left the island at the same time as the Guillemots. Two eggs were found on the "west coast", i.e. the northwest cliffs, where there was a nest on a tuft of thrift jutting from a sheer rock face. This was an exposed site and was apparently used regularly, and Darling (1943) describes the same nest. Darling also refers to "hundreds" on the northern cliffs, more scattered, higher up, and fewer than the Guillemots. In 1938 he estimated 750-1000 pairs. Bagenal & Baird (1959) did not try to count "this abundant breeding species," but an earlier count in 1958 gave about 2000 pairs (Dennis & Waters 1962).

In 1966 most of the Razorbills had gone by 29th July. One or two

chicks were left on the north side of Ton Breighe and on the west side of Geodha Leis, at first accompanied by adults and later abandoned.

Guillemot *Uria aalge*.

A large colony has been regularly recorded. Harvie-Brown recorded in his journal that both the Guillemot and Razorbill were common, "the best filled ledges being on the NW side, and the former the more plentiful of the two species." Darling (1940) estimated 25,000 birds,* the colonies on the northwest cliffs being large and extending into the caverns. In 1958, 750-800 birds were counted in Geodha Leis on 11th July (Bagenal & Baird 1959); this geo, and the cliffs west of it, where the birds were too numerous to be counted, held the largest colonies. Bagenal & Baird give detailed figures for colonies elsewhere, ranging from 4 to 295 birds, and including 88 on the west coast, a figure that agrees closely with the 40-50 pairs in 1936 (Atkinson 1949). The total for the minor colonies in 1958 was 1148 birds. An earlier count that year gave 5000 pairs for the island (Dennis & Waters 1962).

The Guillemots had left the island by 25th August 1910, and at the end of August 1931 only a single adult remained, with a few seen at sea. Darling (1940) said the Guillemots disappeared in an August night, mentioning the 9th for one departure, after which there were only a few birds with young chicks here and there. In 1966 I found nearly all birds had gone by 29th July, a situation apparently corresponding with that recorded in the Flannans in 1959 (Baird 1960), where the majority of young left between 26th and 29th July and the last on 3rd August. I counted 130-150 birds on ledges of the northern cliffs, with a few at Geodha Leis, and one adult on each side of Geodha na Breatuinn, that on the west with a chick. I saw no Guillemots after 2nd August.

After a count of six ledges Harvie-Brown thought that one in 9 or 10 birds was bridled; Barrington estimated 17 out of 64. In 1938 bridled birds were estimated as 13% of the total, a figure matched by the 12.69% of 1958.

Black Guillemot *Cepphus grylle*.

Swinburne (1884) found "a good many" at the "west end," and took an egg. Harvie-Brown saw none in 1885, but came across the species at a pool on Fianuis in 1887. It is surprising that he did not see any at the village, where in 1886 Barrington "found them breeding in the walls of the old dwellings a hundred yards from the sea. During the day they sat sunning themselves on the grassy roofs of old houses." No mention is made of the species by the Duchess of Bedford, but Harrisson (1932) counted 3-5 pairs in 1931 and saw an adult and juvenile off the southeast point. In 1936 there were nesting birds among boulders on Fianuis and Sceapull, a pair on the west cliffs, and groups of 2-3 standing around on the rocks—15-20 pairs in all (Atkinson 1949). Darling (1940) reported a few, some nesting deep in the stones of the storm beach. They were not present in winter. In early June 1958 about six pairs were recorded (Dennis & Waters 1962), but later in the month Bagenal & Baird (1959) counted 14 pairs at various points on the coast; many birds were seen with food, and one nest was found at Geodha nan Gall. Donald (1959) gives a total of 18 pairs.

In 1966 I saw four birds on the south side of Cladach Cro Iain Dheirg, and five more north of Leacan Siar, where, in a deep crack, were three

*Darling's calculation of 25,000 birds was based on a count made at clearly visible ledges of the northern geos, the 3000 or more birds seen there being held to represent one-eighth of the total numbers. The population was probably much over-estimated by this method.

abandoned eggs. On Fianuis there were three birds at the north tip, and five at Pol a Chleirich.

Puffin Fratercula arctica.

"This species simply swarmed," said Swinburne (1884), "wherever they could burrow," adding that "a considerable number of the young are annually taken for the purpose of being salted for food" by the visiting sheep shearers. He reckoned that 500-1000 were taken towards the end of July, by methods similar to those used in St Kilda: "They are either extracted from their nests by means of a hook tied to the end of a stick about two feet long, or, if they have left the nest a noose attached to the extremity of a long rod is slipped over their head as they sit on the rocks." Casual shooting of "great numbers" occurred fifty years later, yet still the Puffins were innumerable.

In 1885 Harvie-Brown found some Puffins on Fianuis in two colonies, one in the storm beach, the other in a boulder line along the east side. Later he seems to confuse these colonies with those found on the northwest and northeast cliffs on his second visit, since he refers (Harvie-Brown & Buckley 1888) to the latter in the same terms he used in his 1885 journal for the colonies on Fianuis, and then adds "we also found great numbers on the north peninsula."

Barrington in 1886 found the Puffins "most numerous at the west end," but there were probably colonies all over the island, as Harvie-Brown on his second visit found them "bobbing about, or ducking head first into the crevices of the cairns, every loose heap of boulders holding some proportion of the general colony," and there were hundreds streaming past him as he explored. No mention of colonies on the south coast is made until 1930, when Reid (1931), noticing the tameness of the Puffins, cleaned out "the one possible well" while the birds "sat round and discussed the matter in some detail." The well is almost certainly that at Poll Heallair. Atkinson (1949) again found colonies on the south coast, and in the storm beach; he refers to the Puffins as "unnumbered." Some were nesting under the stones of the Toa Rona cairn, and "a few" in the village, where one pair was nesting "next door" to the "manse" room. Darling (1940) considered the Puffin the most numerous of all the species on Rona, and noticed that the "hosts" nesting mainly at the cliff tops caused erosion by loosening the turf with their burrows. He thought 25,000 Guillemots "as nothing to the number of puffins," and concluded that the latter were being compelled to burrow at inland sites because the cliff tops were full. Calculating the numbers needed to satisfy gull predators without noticeable depletion, he suggested a population of at least 100,000, most on the northwest cliff.

Bagenal & Baird (1959) observe that "no serious count" of "this extremely numerous species" had been made by 1958. They do not attempt one either; however an estimate in 1958 gave 8000 pairs (Dennis & Waters 1962). Baird's map shows the approximate extent but not the density of the breeding colonies.

In 1966 there were large colonies on the northwest and northeast cliffs. At suitable points nesting burrows were well down the cliff face. I saw no Puffins at the storm beach or elsewhere on Fianuis, but there were a few at the head of Sgeildige. I saw none at any stone pile, one bird only at Buaile na Sgrath and one at the village, both flying over. There were none at Stoc a Phriosain and Poll Heallair, though burrow entrances were visible in the long grass and one or two looked used. There was a large colony at the back of Poll Thothatom, and a few birds flew over the east side of Heallair. There were several at the head of Geodha na Breatuinn, which were perhaps an extension of the large colony round Geodha Mairi. The difference between these observations and those recorded on Baird's map may mean a real reduction in numbers or perhaps only that the end of the breeding season was near.

Great Black-backed Gulls are recorded as preying on the Puffins (Darling 1940; Atkinson 1949). Skins and carcasses have been frequently found. Darling (1939a, b) also suggested that Peregrines killed Puffins, remains consisting of the two wings and breast bone indicating the work of the falcons. In 1966 such carcasses were present, though I saw no Peregrines. Only once did I see a gull hunting among Puffins.

On 25th August 1910 a few Puffins were still to be seen. In 1936 there were "half fledged young" in the burrows on 12th August (Atkinson 1949), but many birds were "congregating" on this date preparatory to leaving. Stewart (1938) noticed that on 1st August there were fewer Puffins than usual and thought that many had already left; Darling (1940) gives 10th August as the date of departure in 1939. In 1966 there were empty small colonies and very restless birds at the larger nesting areas, from 29th July until 8th August, when, for the last time, a great company flew a wide oval course off the north side of Toa Rona.

Meadow Pipit *Anthus pratensis*.

Present in small numbers in 1883 (Swinburne 1884); not recorded by Harvie-Brown; 6-7 birds in July 1910 (Bedford 1910). Harrison (1932) suggested 3-5 pairs breeding, and both he and the Duchess of Bedford (1910) record a large influx at the end of summer. Ainslie & Atkinson (1937a) saw none in 1936 till 10th August, when there were 3-4 birds on Fianuis. In early June 1958, ten pairs were counted (Dennis & Waters 1962), but Bagenal & Baird (1959) describe a two-day census during which 12 pairs were found. Breeding was assumed when adults were seen carrying food, but no nests were found. I saw no obvious pairs in 1966, though 2-3 birds were seen before 9th August; thereafter scattered parties of 5-6 birds were more and more frequently observed.

Rock Pipit *Anthus spinoletta*.

Present in 1883 (Swinburne 1884); fairly common in 1885, though Harvie-Brown could not decide on its status. Barrington "got a nest" in 1886. The Duchess of Bedford found the species numerous in 1910 (possibly more abundant on her second visit that year), and in 1914. Harrison (1932) estimated 30 pairs, Atkinson (1949) more than 50 in 1936. In 1958 Bagenal & Baird (1959) counted about 35 pairs, chiefly on Fianuis, Buaile na Sgrath, and along the south coast; 20 pairs had been recorded earlier in June (Dennis & Waters 1962). Several nests with eggs and young were noted.

In 1966 distribution was similar to that of 1958, but the advanced season made an accurate census impossible.

Starling *Sturnus vulgaris*.

First recorded in August 1910 (Bedford 1910) though possibly present before this. In 1914 the Duchess of Bedford found Starlings nesting in walls. Reid (1931) noted a flock of 30 accompanying sheep. Harrison (1932) records "a thriving starling community," and stresses their dependence upon the sheep. A flock of 220 was seen, and, even at the end of August, 2-3 nests were found under stones and one at the bottom of a dry well. Atkinson (1949) found seven pairs nesting in the village ruins in July, and a flock of 70 with the sheep, while Darling (1939a) recorded 300-400 birds resident, in winter also. In 1954 (Smith 1954) there was a flock of about 250, and birds were feeding unfledged young. In early June 1958, 100 breeding pairs were estimated (Dennis & Waters 1962); Bagenal & Baird (1959) attempted no count, though they found "many nests with young," and saw flocks of up to 400 feeding randomly over the island. Most of the young fledged towards the end of June. In 1966 Starlings were widely scattered, parties of 30-50 being usual. There were 3-4 nests in the village with young, and more in the storm beach.

Former, irregular and doubtful breeding species

The following species are no longer or only occasionally breeding in North Rona. Some may never have bred there.

Gannet *Sula bassana*.

Morisone's reference to the "soline goose" has already been given. MacCulloch (1824) said that McCagie, the tenant in Rona, "was bound to find an annual supply of eight stone of feathers, the produce of the gannet." He also comments that "there are not many places where such an island would not have been left to its proper tenants, the gulls and gannets."

Gannets no longer breed on Rona, if indeed they ever did. From Swinburne on, all observers have seen them at sea round Rona, but associate their breeding only with *Sula Sgeir*. Regularly seen over the sea round Rona in 1966.

Peregrine *Falco peregrinus*.

Swinburne (1884) said there was a noisy pair of Peregrines, probably nesting, at the southwest end, an unlikely area. Harvie-Brown in 1887 recorded a Peregrine on the "west cliffs," where a male "asserted himself"; he was probably referring to the northwest cliffs. There is no reference to this species by the Duchess of Bedford, but Harrison (1932), who remarked on the absence of birds of prey, recorded an adult female hunting on the island for an hour. Darling (1939b) says that the Puffins were preyed on by one pair of falcons, which he mentioned as if they were breeding birds, and fresh kills of Puffins in May 1959 were said to indicate the presence of Peregrines. None seen in 1966.

Lapwing *Vanellus vanellus*.

Atkinson (1949) heard calling at night and saw birds in flight. Two were seen in 1954. Two pairs were found breeding in early June 1958, one pair with young (Dennis & Waters 1962). Sometimes as many as 13 were seen later in the season, and they were regularly present frequenting the grass near the west cliff. Bagenal & Baird (1959) considered the young Lapwing's chances of survival slight in view of marauding gulls. I saw no Lapwings in 1966.

Ringed Plover *Charadrius hiaticula*.

"Besides the Whimbrels," remarked Harvie-Brown in 1885, "I saw one pair of Ringed Dotterells also evidently nesting." No evidence of breeding has since been recorded; Ainslie & Atkinson (1937a) saw small parties of up to six, mostly immature birds, and two were seen in early June 1958 (Dennis & Waters 1962). In 1966 there were 2 on a gravel patch near Leac Mhor Fianuis on 15th August.

Turnstone *Arenaria interpres*.

Small parties were seen in 1886 (Barrington) and 1887 (Harvie-Brown 1886-87). They were at the Fianuis pools in August 1910 (Bedford 1910), and Harrison (1932) saw at least 30 regularly, with 60 on 29th August. In 1936 a small flock was always to be seen (Atkinson 1949). Darling (1939b) gives the species a special mention, feeling that breeding was possible. He says that Turnstones were numerous on 12th July 1938, many in "brilliant breeding plumage" and some separated into "families" of two adults followed by three young "begging" for food. Scepull, Loba Sgeir, and especially Fianuis were the favoured areas. He was disappointed to find none on 18th June 1939, though there were a few on 24th June. In the seal season Turnstones were abundant on Fianuis and Scepull. There

were 100 seen in 1954 (Smith 1954), one in early June 1958, and later groups of 3-10 all round the island (Bagenal & Baird 1959). One was seen on 10th May 1959 (Williamson *et al.* 1959). In 1966, from 3rd August on, there were small groups of up to five, chiefly near Marcasgeo and on Fianuis.

Whimbrel Numenius phaeopus.

This species provided Harvie-Brown on his first visit with an exciting and frustrating few minutes. "During a hurried run towards the north peninsula [*i.e.* the tip of Fianuis], but before we got more than 300 yards being recalled by the steam whistle, we saw two whimbrels evidently breeding on the level or sloping top not far from where I have made a X on the map." The ship's summons defeated his inclinations, and, although it was very calm, he had to leave. Their actions, he wrote later (Harvie-Brown 1888), were "*distinctly* those of breeding birds." Thus he departed without proof of breeding. Barrington shot one bird in 1886, but Harvie-Brown did not find a pair in 1887.

The Duchess of Bedford saw a pair on the high ground in June 1914. Ainslie & Atkinson (1937a) recorded small parties of up to four in August, and one was seen in 1954. In 1958 ones and twos were seen in early June (Dennis & Waters 1962); but later dead birds were found, followed by a live Whimbrel on 27th June and others in July (Bagenal & Baird 1959). There was one on 10th May 1959 (Williamson *et al.* 1959). Whimbrels were daily occurrences in 1966, usually in small parties of 3-9 and often in the grass near the west cliffs.

Dunlin Calidris alpina.

Harvie-Brown (1886-87) noted one or two near some pools on Fianuis in 1887, adding: "No doubt they are breeding on the grassier portions." No evidence to support this has since been given. In 1910 birds were seen on Fianuis in August, Harrison (1932) saw 3-5, and one adult in summer plumage was seen on 7th and 11th August 1936 (Ainslie & Atkinson 1937a). In 1958 there were a few at the beginning of June (Dennis & Waters 1962), and one on 26th June (Bagenal & Baird 1959). There were seven on 10th May 1959 (Williamson *et al.* 1959). In 1966 there was an adult in summer plumage on 5th August, accompanying Golden Plover. A party of 15 flew off Fianuis on 10th August.

Lesser Black-backed Gull Larus fuscus.

"I did not notice any Lesser Black-backed gulls," wrote Swinburne (1884), "though I have no doubt they were there." In 1885 Harvie-Brown did not record any, but this was possibly because he ignored the southwest corner where Barrington found them "plentiful" a year later. They were "breeding at the south side." In 1887 Harvie-Brown includes the Lesser Black-backed Gull in his description of Herring Gulls, *i.e.* chiefly on Fianuis, and says (Harvie-Brown & Buckley 1888) that there were a few on the slope of the southwest peninsula. The position had apparently changed considerably when, in 1910, the Duchess of Bedford wrote: "The low peninsulas are thickly covered with the nests of the Lesser Black-backed Gull." The birds were still numerous in August. In 1914 they were "by far the most abundant birds away from the cliffs," outnumbering the Great Black-backed Gull, and "nesting from one end of the island to the other." This description aptly fits the present status of the Great Black-backed Gull. In spite of the enormous numbers of 1914, none was seen by Harrison (1932), who remarked that "probably the numbers vary considerably from year to year"; and Atkinson (1949) recorded not more than six pairs. Darling (1940) said there were a few nesting with the Herring Gulls. The last record was in 1958, when 2-3 pairs were seen but were probably not breeding. I saw none in 1966.

Arctic Tern *Sterna macrura*.

Harvie-Brown mentions "a few" in 1885; these were on Fianuis, for in his journal for 1887 he says: "The colony of Arctic Terns has left the N. End, where they were in 1885, and taken up their abode at the S.W. end, just below where Barrington found the colony of Stormy Petrels." Barrington's find was described as "on the Western End," so the terns were probably on Buaille na Sgrath, where they had chosen broken ground and lined their nests with gravel. The colony was "fair-sized" but the nests were scattered. Elsewhere Harvie-Brown & Buckley (1888) confirm this location by describing the terns as on the slope "above the southwest promontory," and speak of many nests in the thrift. In 1886 Barrington had found the breeding terns on Fianuis, estimating about 30 pairs, and shooting a bird for sure identification. In 1910 the colony at or near Buaille na Sgrath was still there: "At the extreme southwestern end is a large colony of Arctic Terns" (Bedford 1910). The birds had gone in August. There were four colonies in 1914, but these are not located. Atkinson (1949) noted terns at Loba Sgeir on landing in 1936. About 60 pairs were estimated in small colonies elsewhere, but very few nests were found; some of these were on the gravel patches of Fianuis, where Darling (1939b) also found them. Atkinson saw a few young on the wing on 10th August, but one bird was still on eggs. Darling, who estimated 200-300 pairs, said that until the birds left in August there were only about two hours around midnight free from their calls.

In 1952 (Studdy 1953) there were "three distinct colonies" on Fianuis, with "many chicks," and another two on the south side, one of which was on Sceapull. In 1954 a flock of 40, with a few immature birds, was seen on Fianuis (Smith 1954).

The uncertain and somewhat mysterious history of the tern colonies was continued in 1958, when there were 20 pairs estimated in early June (Dennis & Waters 1962) and later in the month three colonies found, one at the south end of the storm beach, and two near the depression crossing the north part of Fianuis (Bagenal & Baird 1959). By July, however, there was no sign of these colonies, though adults continued to frequent these areas and Loba Sgeir. In 1966 terns again rose from Loba Sgeir but only on 30th July. Occasional calls came from terns passing over Leac na Sgrob on 31st July, but thereafter none was heard or seen. The evidence not only reinforces Atkinson's view that there is an annual variation of breeding sites, but suggests that breeding in Rona is most irregular.

Raven *Corvus corax*.

This species was first seen by Darling on 18th December 1938 after a southeast gale. In 1954 four were seen and described as probably a family party (Smith 1954). It was recorded as breeding in 1958 when a 'family' of seven was seen in early June (Dennis & Waters 1962), but Bagenal & Baird (1959), who regularly saw "up to 5" near the northern cliffs, found no evidence of a nest. A pair was present in May 1959 (Williamson *et al.* 1959). None in 1966.

Hooded Crow *Corvus corone cornix*.

Seen in 1914 and presumed to be breeding (Bedford 1914), this species was not again reported until 1958 when one or two were present in July (Bagenal & Baird 1959). None in 1966.

Wheatear *Oenanthe oenanthe*.

Once probably nesting on Rona, not now certainly breeding there. Swinburne (1884) saw Wheatears in June 1883, and Harvie-Brown (1885, 1886-87) first of all reports "some half-dozen pairs seen on S. portion"

in 1885, while later he says that "a few pairs"—probably three or four—were nesting in the stone cairns. Barrington saw one bird at the end of June 1886 which might have been breeding. The Duchess of Bedford likewise saw this species in June 1914; Atkinson (1949) estimated 3-4 pairs in 1936, but found no young. Bagenal & Baird (1959) saw "single individuals" on various dates during July 1958, and on 8th July an adult and a fully fledged juvenile, but "we do not think they were native breeding birds." There was a count of at least 20 at the beginning of June 1958 (Dennis & Waters 1962), and some were thought to be breeding: Wheatears present on 10th May 1959 were described as 'Icelanders' (Williamson *et al.* 1959).

One on 3rd August 1966 at the storm beach. Further Wheatears arrived on 8th August: one seen on the south slope of Toa Rona, four more above the village. Thereafter small parties of 4-6 birds regularly seen, chiefly north and west of the village.

Summary

The ornithological history of North Rona is traced and briefly related to the former inhabitants and to the ornithological visitors of the past 85 years. The recorded history of each species that breeds or may have bred is discussed in detail, with special attention to the Fulmar and Leach's Petrel.

A list of migrants seen between 28th July and 19th August 1966, and the dates of some ornithological visits to the island, are given in appendices, and many references are cited.

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Appendix 1

Migrants on North Rona, 28th July - 19th August 1966

Heron. One on 2nd August, mobbed by skuas; one on 4th, circled overhead, flew towards Lewis, faltered and turned southeast.

Mallard. Pair on pool at west edge of Buaille na Sgarth on 1st August.

Kestrel. A bird of prey flying east high over the fank slope on 10th August was taken to be a Kestrel, and on 17th one was resting at the edge of Geodha Mairi.

Golden Plover. This species has not been found breeding on Rona. Parties of 4-15 regularly near west cliffs, and often flying over.

Snipe. One in the village on 13th August.

Jack Snipe. Single birds above the village on 29th July and on Fianuis on 3rd August.

Curlew. Small parties of 3-6 throughout period.

Redshank. Five on Fianuis on 3rd August and ones and twos regular thereafter, but no large party.

Sanderling. Two in summer plumage on Leac Mhor Fhianuis on 15th August.

Cuckoo. Juvenile on fank slope and in village on 10th August.

Short-eared Owl. One sheltering in the wall by the cultivation strips on 8th August, and probably the same bird rose from the wall to the north-west cliffs on the 10th.

Fieldfare. One at Poll Thothatom on 4th August.

Blackbird. One at boulders of Cladach Cro Iain Dheirg on 7th August.

White Wagtail. Small flock arrived on 13th August and stayed.

Appendix 2

Dates of visits to North Rona by observers mentioned in this paper

1883	J. Swinburne	18th (?20th) June
1885	J. A. Harvie-Brown	16th June
1886	R. M. Barrington	29th June-1st July
1887	J. A. Harvie-Brown	18th-19th June
1907	Duchess of Bedford	
1910	Duchess of Bedford	19th July, 25th August
1914	Duchess of Bedford	21st June
1927	J. Wilson Dougal	29th July
1930	D. M. Reid, M. Stewart	31st July-4th August
1931	T. H. Harrisson, M. Stewart	28th August-3rd September
1936	J. A. Ainslie, R. Atkinson	16th July-12th August
1937	R. Atkinson, A. A. MacGregor	28th July
1937	M. Stewart (4th visit)	1st August



PLATE 8. Aerial views of North Rona, 1966, showing (*above*) the settlement from the north, with chapel, graveyard and the three sections of the village; and (*below*) the chapel (at top, with cell at right end), and eastern section (Group A) of the village (see fig. 2).

Photographs by M. J. H. Robson





PLATE 9. Ruin of central section of village, North Rona, 1966, with Fulmar chick in typical village site, and (below) the altar in the cell, with another young Fulmar in one corner.

Photographs by M. J. H. Robson





PLATE 10. An exhausted migrant Lapland Bunting on North Rona, October 1962, and a view of the highest point on the island, Toa Rona (355 ft), to the left, and the eastern geos, taken from the low northerly peninsula of Fianuis.

Photographs by W. E. Waters





PLATE 11. One of the young White-tailed Eagles (see page 121) being inspected on its arrival at Fair Isle by Roy Dennis, Dr Johan Willgoos and George Waterston.

Photograph by Dennis Coult

1938	F. F. Darling	12th July-30th September, 15th November-22nd December
1939	F. F. Darling	18th-29th June
1946	R. Atkinson	27th-28th July
1949	I. D. Pennie	July
1952	R. Studdy	July
1954	R. W. J. Smith	3rd August
1958	J. M. Boyd, J. MacGeoch, D. N. McVean, D. A. Ratcliffe	3rd-5th June
1958	T. B. Bagenal, D. E. Baird, S. Donald	24th June-22nd July
1959-1962	Nature Conservancy parties	October
1966	M. J. H. Robson	28th July-19th August

October bird migrants at North Rona

R. H. DENNIS and W. E. WATERS

(Plates 8 - 10)

The pattern of migration into northwest Scotland is less well known than that through Orkney and Shetland and along the east coast. The northwest is sparsely populated and has no permanent bird observatory. Since 1959, expeditions from the Nature Conservancy, Edinburgh, have visited North Rona annually in late autumn to study the grey seals, and this paper brings together ornithological observations made during these nine visits. Observations from elsewhere in the north and west, especially Fair Isle (RHD) and St Kilda (WEW), are used for comparison with those at North Rona.

North Rona is near to ideal for observing both flying and grounded migrants. There are no neighbouring islands to the northwest or north and only Shetland some 150 miles to the northeast. It is 300 acres and an easy island to walk around. The centre of the island is grassland giving little cover and attracts mostly pipits and thrushes, occasionally in large numbers. The only shelter for birds is at half a dozen geos in the cliffs; the geos on the leeward side of the island usually contain most of the migrants and the concentration of them at these few points must be almost without equal in Britain.

The techniques of recording have been similar to those described by Boyd (1960); it should be noted that grey seal research was the main aim of the expeditions and searches for birds usually took place on the way to and from the seal breeding areas and at meal times. Visible migrants, and species associated with the seals, have been noted during

work among the seals on Fianuis, the bleak northern peninsula.

The visits to the island were planned to coincide with the breeding season of the seals but arrival and departure dates and the length of stay were dependent on the weather and varied from year to year. The dates and members of each expedition were:

- 1959 1st-26th Oct. J. M. Boyd, H. R. Hewer, J. D. Lockie, J. MacGeoch
 1960 16th Oct-7th Nov. J. M. Boyd, M. J. W. Douglas, R. M. Laws, J. MacGeoch
 1961 13th-21st Oct. J. M. Boyd, R. H. Dennis, A. Holmes
 1962 5th-20th Oct. R. Balharry, J. M. Boyd, R. H. Dennis, W. E. Waters
 1963 25th Oct-4th Nov. R. Balharry, R. N. Campbell, K. East, K. M. Wallace
 1964 10th-19th Oct. R. N. Campbell, K. East, N. Picozzi, R. Tweddle
 1965 21st-27th Oct. R. Balharry, R. N. Campbell, R. Moss, G. Smith
 1966 24th-31st Oct. J. M. Boyd, A. Christie, R. Tweddle, P. Wormell.
 1967 16th-27th Oct. R. Balharry, R. N. Campbell, W. J. Eggeling, H. H. Kolb, D. R. Shelley.

During these visits 116 species of birds were identified on or from the island. The annual tally of species varied considerably and was noticeably dependent on the weather situation, easterly winds producing a far greater variety of species. In 1959 many of the species recorded were new for the island's list (Boyd 1960); the number of new species found in subsequent years was 1960 (6), 1961 (4), 1962 (8), 1963 (1), 1964 (3), 1965 (1) and 1967 (1). The more interesting details of all the species recorded on the island during these late-autumn visits are summarised in the following systematic list; comprehensive daily figures have been deposited with the Nature Conservancy in Edinburgh.

Systematic list

Great Northern Diver. Two on 28th and one on 31st October 1960; one on 19th October 1961.

Black-throated Diver. One on 10th and 12th October 1959; two on 27th October 1960.

Red-throated Diver. One from 6th to 15th October 1962.

Slavonian Grebe. One on 11th October 1962.

Leach's Petrel. Small numbers in 1959, 1961, 1962 and 1967; latest date 27th, but one found dead 29th October 1966.

Storm Petrel. Small numbers heard until last days of October most years.

Fulmar. Up to 2000 recorded ashore annually in October; blue-phase birds noted in 1962, 1964 and 1966.

Gannet. Usually small numbers offshore, but flock of 100 on 6th October 1962.

Shag. Small numbers, up to 100, annually in October.

Heron. Singles in 1959, 1960, 1962 and 1964.

Mallard. Small numbers all years except 1966 and 1967; maximum 8 on 31st October 1960 and 17th October 1961.

Teal. Small numbers all years except 1963 and 1967; maxima 8 on 18th October 1961 and 10 in October 1962.

Wigeon. Small numbers in 1959, 1961, 1962, 1966 and 1967; maximum 6 on 7th October 1962 and 26th October 1966.

Pintail. Two on 11th October 1964 and 29th October 1966; recorded also in October 1963.

Tufted Duck. One on 9th October 1959.

Goldeneye. Four on 3rd October 1959 and two on 6th November 1960.

Long-tailed Duck. Small numbers in all years except 1959 and 1963; maximum 4 on 17th October 1960.

Velvet Scoter. One on 28th and 29th and three on 30th October 1960.

Common Scoter. Small numbers, maximum 6, between 24th October and 6th November 1960.

Eider. October flock maxima ranged between 25 and 100, but generally about 50.

Red-breasted Merganser. In 1962 a total of 27 were recorded on six days, the maximum being 18 flying west to east past the island on 14th October; otherwise only singles on 16th October 1961 and 23rd October 1965.

Grey Lag Goose. Migrant flocks and occasional grounded birds in October 1960, 1961, 1962, 1964, 1966 and 1967; maxima 35 on 10th October 1962, 30 on 17th October 1964 and 53 on 17th October 1967.

White-fronted Goose. Single grounded birds of the Greenland race in October 1961 and 1963.

Pink-footed Goose. Forty-two on 16th October 1959, 110 on 7th and 140 on 9th October 1962 and 111 on 17th October 1967; stragglers on other days and also in 1960, 1961 and 1964.

'Grey' geese. A total of 345 unidentified grey geese in October 1960; smaller numbers in four other years.

Barnacle Goose. Eleven to 23 on 24th-26th October 1959, 17 in October 1963, and 75 on 17th, 9 on 18th and 16 on 20th October 1967.

Whooper Swan. In October 1960, 8 on 20th, 12 on 28th, 50+ on 29th and 30th; smaller numbers, maximum 21 on 9th, in October 1962. Stragglers in 1961, 1965, 1966 and 1967.

Buzzard. One found dead 7th October 1959.

Hen Harrier. A female on 9th October 1962.

Peregrine. Singles on 3rd and 18th October 1959, 17th and 22nd October 1960. An escaped falconer's bird, complete with bells and jesses, 16th-20th October 1961. Single females 5th-14th October 1962 and 24th October 1965.

Merlin. Recorded most days in October 1959 (1-3), 1960 (1-2) and 1961 (1-4). Common in October 1962 with one to six daily but 15 on 7th and 12 on 9th. Singles in 1963, 1964, 1966 and 1967.

Kestrel. One on 13th-14th and two on 15th October 1961; one on 7th and 8th October 1962

Water Rail. Singles on 11th October 1959, 17th October 1961 and 11th October 1962.

Corncrake. Singles on 17th October 1959 and 30th October 1960.

Oystercatcher. One or two stragglers in all years except 1963. In two years the records show a decrease from two to one during the month.

Lapwing. One on 14th-17th October 1959. Commoner from 1960 to 1962, when seen most days; maxima 6 in 1961 and 22 in 1962. The only records since then have been of singles on three days in October 1964 and on 20th October 1967.

Ringed Plover. One to ten in October 1959; one to four in October

1962; one on 14th October 1964; and five on 25th October 1965.

Golden Plover. Common from 1959 until 1962; maxima 35 in October 1962 and 30 on 16th October 1959. Seen in 1963, two in October 1964 and one or two on three days in October 1967.

Turnstone. Common each autumn 1959-67, usually c. 100 but c. 300 in October 1967.

Snipe. Regularly seen each October; daily maxima 10-30, but scarce in 1963.

Jack Snipe. Seen nearly daily in 1959 (1-11, but 20 on 11th-12th October), 1960 (1-3), 1961 (1-6) and 1962 (1-5); none in 1963 and 1964; singles on 27th October 1965, 21st and 25th October 1966 and two on 21st October 1967.

Woodcock. Singles on one or two days in all years except 1961 and 1964; maximum three in October 1959.

Curlew. Small numbers each October; maxima 21 in 1961 and 13 in 1962.

Whimbrel. One on 5th October 1962.

Common Sandpiper. One on 22nd October 1966.

Redshank. Small numbers present each October; maxima 30 in 1959 and 1962 and 20 in 1960 and 1967.

Greenshank. One on 24th October 1965.

Knot. One on 14th and 19th October 1959.

Purple Sandpiper. Regularly seen each autumn and very common some years; yearly maxima 1959 (20), 1960 (100+ on 2nd and 200+ on 4th November), 1961 (50), 1962 (35), 1964 (5), 1965 (small parties), 1966 (100) and 1967 (80).

Little Stint. Singles on 6th, 7th and 20th October 1959 and 29th October 1965.

Dunlin. Scarce, except in October 1961 when 35 on 13th decreased to 2 by 20th. Not recorded in 1963 or 1965-67.

Red-necked Phalarope. One on 9th October 1962.

Great Skua. One to three on several dates between 7th and 15th October 1962; singles on 14th and 16th October 1964, 24th (dead) and 28th October 1965.

Great Black-backed Gull. Very common scavenger in seal grounds; numbers usually c. 500 each autumn but 800 on 19th October 1962; scarce, maximum 100, in 1965 and 1966.

Herring Gull. Small numbers each autumn with Great Black-backed Gulls; recorded maxima of 200 on 14th October 1961 and 100 on 19th October 1962.

Common Gull. Singles on 17th, 18th and 19th October 1961; two or three on 7th-10th, 8 (6 first-year) on 11th and 6 on 12th October 1962.

Glaucous Gull. Singles on 13th and 20th October 1961, 5th October 1962 and 19th-27th October 1967.

Iceland Gull. A first-year bird on 20th October 1967.

Black-headed Gull. One on 16th October 1959; one on 14th and 15th and two on 17th October 1961; four on 9th and one or two on several other days in October 1962.

Kittiwake. Scarce around the island in October; one or two seen in four years and up to 20 in October 1962.

Little Auk. One found dead on 6th November 1960.

Black Guillemot. Singles on 1st October 1959, 7th November 1960 and 8th October 1962, two on 11th October 1962 and one on 23rd October 1967.

Rock Dove. The annual October flock has decreased from 10-12 in

1959, 1960 and 1961 to 3-4 in 1962 and 1966, with none in 1965 and 1967.

Woodpigeon. Singles on 13th October 1961 and 9th October 1962.

Turtle Dove. Singles on 9th October 1962 and 13th-14th October 1964.

Long-eared Owl. Singles on 17th October 1964 and 24th October 1966.

Short-eared Owl. Singles each October except 1961, 1963 and 1965; two on 27th October 1960 and 14th October 1962.

Great Spotted Woodpecker. One on 11th October 1962.

Skylark. Day maxima of 15-20 in 1960, 1961 and 1962, but scarce (maximum 6) in all other Octobers and none in 1966.

Swallow. One on 5th October 1962. [Two 'martins' were seen on 21st October 1966.]

Raven. Two to four residents most years but numbers have fluctuated. Maximum of five on 6th November 1960, and none recorded in 1967.

Hooded Crow. One most days in 1959-63 and two on 14th October 1962. Not recorded since 1963.

Rook. One on 20th October 1961.

Jackdaw. Eight on 22nd decreased to three by 29th October 1960; one on 9th October 1962.

Wren. Singles recorded in 1959 (but two on 22nd October), 1960, 1962, 1964 and 1965.

Fieldfare. Recorded every October; especially numerous in 1959, 1960 and 1965. In 1959 a strong passage from 13th peaked at 200+ on 17th and 18th October; 500+ on 17th October present until 2nd November and 50+ on 5th November 1960; 40 on 20th October 1961; maximum of only 6 in 1962; plentiful in October 1963; up to 50 in 1964; hundreds in 1965; maximum of 50 (many exhausted) in 1966; and 15 on 21st October 1967.

Song Thrush. Small numbers with other Turdidae most autumns; maximum 20 on 20th October 1961, but not recorded in 1963 and 1967.

Redwing. Commonest October migrant and very common some years, thus: passage from 1st, peaked at 1000 on 17th and 18th October 1959; 500+ on 17th October and numbers maintained until 5th November 1960; 600 on 13th, 1000 on 14th, decreased to 150 by 18th, and fresh arrival of 400 on 20th October 1961; small numbers on 5th-8th, increased dramatically to 1000+ on 9th, 200 on 10th and similar numbers to 15th, then few to 20th October 1962; 'plentiful' in 1963; up to 300 in 1964; sometimes hundreds in 1965; but a maximum of only 6 in 1966; small numbers in October 1967 peaked at 100 on 18th.

Ring Ouzel. Two on 10th, one on 12th and 14th October 1959; singles on 9th October 1962 and 18th October 1967.

Blackbird. Recorded nearly daily on all visits; numbers small most years, maxima 15 in 1961 and 12 in 1962. Commoner than Redwings in 1965, when hundreds sometimes recorded; and in 1960, when 50 on 16th October increased to 100 on 28th and to 500+ on 2nd November. The records indicate a late migration.

Eye-browed Thrush. One on 16th October 1964 (Picozzi 1965; Parslow 1968).

Wheatear. Usually small numbers each October although very common in 1962 and not recorded in 1963, 1966 and 1967; 50+ on 1st-8th and passage until 26th October 1959; one most days to 7th November 1960; 15 on 13th October and smaller numbers to 20th in 1961; 9-12 on 5th-8th, a big arrival of 150 on 9th, and then decreased to 5 by 20th October 1962; maximum of 12 on 10th October 1964 and last one on 18th; only one in 1965, on 22nd October.

Whinchat. Singles on 9th October 1962 and 10th October 1964.

Redstart. Singles on 8th October 1959, 27th October 1960, 9th-15th October 1962, 17th October 1964 and 21st October 1967.

Black Redstart. One on 1st November 1963.

Robin. Small numbers in 1959, 1960, 1961, 1963 and 1964; usually one or two but four on 15th October 1961.

Blackcap. The only fairly regular warbler in October; seen in all years except 1961, 1963 and 1966, with maxima of 10 on 7th October 1959, 4 on 20th October 1960 and 12 on 21st October 1967.

Barred Warber. One on 20th October 1961.

Garden Warbler. Three on 9th and one on 14th and 19th October 1962; two on 21st October 1967; and singles in 1959, 1960 and 1964.

Lesser Whitethroat. One on 9th October 1962.

Willow Warbler. Singles reported on 7th, 8th and 20th October 1959, and 14th October 1961; two on 17th and one on 18th October 1964. See comments under Chiffchaff.

Chiffchaff. One on 14th and 15th October 1961 is the only record. The low proportion of Chiffchaffs to Willow Warblers is contrary to that observed at Fair Isle in October, and trapping at North Rona would almost certainly reveal more Chiffchaffs than Willow Warblers in this month.

Yellow-browed Warbler. One on 18th (not 19th as in Picozzi 1965) October 1964.

Goldcrest. Regular in small numbers all autumns except 1965; maxima of 6 on 27th October 1960, 25 on 20th October 1961 and 6+ on 11th October 1962.

Spotted Flycatcher. One on 6th, two on 9th, and one on 10th and 12th October 1962.

Pied Flycatcher. Two on 6th, one on 14th and 15th October 1959, and one from 9th to 20th October 1962.

Red-breasted Flycatcher. One from 10th to 13th October 1959 and one on 18th (not 19th as in Picozzi 1965) October 1964.

Meadow Pipit. Regular; large numbers occur in some autumns—peaks of 500 on 16th-18th October 1959, 300 on 13th October 1961 and 300 on 9th October 1962; but daily numbers only 5-10 in 1967 and 10-20 in 1965.

Tree Pipit. One on 22nd October 1965.

Rock Pipit. Common each October 1959-67; numbers probably about 50 but 100+ on 17th and 18th October 1960 and an increase on 20th October 1961.

Pied/White Wagtail. One immature on 2nd October 1959; one White Wagtail on 13th-16th October 1961; one Pied Wagtail on 5th-14th October 1962; two White Wagtails on 22nd, three on 23rd and one on 25th October 1967.

Grey Wagtail. One on 9th and 10th October 1962.

Yellow Wagtail. An immature of indeterminate race on 18th (not 19th as in Picozzi 1965) October 1964.

Waxwing. About 20 on 24th October 1965.

Great Grey Shrike. One on 11th October 1962.

Starling. Recorded throughout each visit 1959-67, numbers usually 100-200 but scarce in 1962 and 1966 (maximum 60). In October 1961 the flock decreased from 200 on 13th-15th to 25-40 from 16th to 19th and then increased to 300 on 20th.

Siskin. Five on 13th decreased to one by 20th October 1961; one or two on five days between 9th and 14th October 1962.

Twite. Two on 27th October 1960; one on 14th October 1961; maximum of 3 on 13th in October 1964; and singles on 21st, 23rd and 24th October 1965.

Redpoll. One on 20th and 22nd October 1959; one on 19th and four on 20th October 1961 were Mealy Redpolls; five Greenland birds on 8th October 1962; one on 16th and four on 17th October 1964 included one Mealy in a Lesser Redpoll group; noted as common in 1965, with maximum of about 20 on 26th and 27th October (Mealy Redpolls were very common at Fair Isle in October 1965).

Bullfinch. One on 27th and 30th October 1960.

Parrot Crossbill. Two on 9th and one on 10th-11th October 1962. Though not caught, the birds were identified by their large bills and different call from a common Crossbill (noted as *chup* instead of *chip*). There was an unprecedented invasion of this species at Fair Isle and elsewhere in October 1962 (*Scot. Birds* 3: 197).

Chaffinch. Small numbers regularly in 1959 (maximum 12), 1961 (maximum 6), and 1962 (maximum 4), but otherwise only singles in 1965 and 1966, and two in October 1967.

Brambling. Common in October 1959, maximum 50+ on 17th; smaller numbers, maximum 11, in October 1960, 1961, 1962 and 1964; common in 1965 with maximum of 33 on 23rd October.

Lapland Bunting. Present most autumns in small numbers, but none in 1967; maxima of 10 on 26th October and 10+ on 1st November 1960, 12 on 13th October 1961 and 20 on 6th October 1962.

Snow Bunting. Common on island every October, with evidence of passage; peaks of 100+ in October 1959, 200 on 13th and 14th October 1961, 100 in October 1963 and 70 in October 1967.

House Sparrow. One to six daily from 3rd to 26th October 1959 and a female on 13th and 14th October 1961; there are no breeding records.

Tree Sparrow. Between two and twelve most days from 20th October to 6th November 1960; two on 19th and three on 20th October 1961; one on 6th October 1962.

A comparison of North Rona with St Kilda and Fair Isle

Geographically, North Rona and St Kilda are in ideal positions to study bird migration in the northwest approaches of Scotland. In autumn we would expect the species recorded to be rather similar and probably of Icelandic origin. Our observations have shown that this is not so, and North Rona gets larger numbers of migrants and a greater variety of species. From 1st to 20th October 1961, 38 species of migrants were seen at St Kilda, whereas observations for less than half this period at North Rona produced 50 species. It is interesting to note that this was perhaps the most exciting month for quantity and variety of migrants at Fair Isle since the observatory opened, and 109 species were recorded in the first twenty days. Boyd's (1960) list includes 54 species of migrants at North Rona in October 1959, and in October 1962 70 species of migrants were seen, surely an astonishing number for a situation so far to the northwest.

However, there are factors that make St Kilda a more difficult place from which to study migration. St Kilda is an archipelago and it has been possible to observe only from

the main island, Hirta. Migrants may well rest on Soay, Boreray or Dun and hence pass unobserved. Hirta itself has over 1500 acres, or five times the area of North Rona, and it is four times as high. Thus it is much more difficult to cover in a given time.

That North Rona receives more migration from Scandinavia and the continent than St Kilda could be expected from its more northeasterly position. Perhaps rather more surprising is the fact that North Rona also gets larger numbers of Icelandic birds—at least in late autumn, the only period under consideration in this paper. The bird migrants at North Rona in October can generally be divided into those on passage from the Iceland/Greenland areas and those off course from Scandinavia. They are discussed separately below and comparisons are made between the three islands.

Migrants of northwestern origin. The species in this category most likely to be observed at North Rona in October include Whooper Swans, ducks, geese, waders, Merlins, Redwings and Lapland and Snow Buntings. The expeditions to the island have been rather too late in the autumn to compare the passage of the common Icelandic passerines, Wheatear, Meadow Pipit and White Wagtail, but Harrisson's (1932) observations in 1931 suggest that all are very numerous there in August and September. Redwings have on occasions been subspecifically identified but the big falls in the years in question have been mainly continental birds.

Goose passage has on occasions been spectacular and easily observed at North Rona; Whooper Swans and Merlins have usually been associated with it.

The volume of passage is considerably less at St Kilda; no geese or swans were seen there in October 1961, and Merlins were only recorded for five bird/days in the period in question. Table 1 gives the totals for these species at North Rona and Fair Isle during the expedition periods in certain years. The numbers represent the total number of birds recorded, allowance being made for lingering flocks of geese at Fair Isle.

Table 1. Comparison of number of birds of northwestern species seen at North Rona and Fair Isle during expedition periods

	North Rona				Fair Isle			
	1960	1961	1962	1967	1960	1961	1962	1967
Grey Lag	8	18	73	62	80+	30	59	60+
Pinkfoot	6	8	253	122		18	3	
'Grey' geese	345		31			84	25	
Whooper Swan	120	3	39	3		94	36	26
Merlin	10	16	58	10	3	23	9	47

Nearly all the geese at North Rona have been flying to-

wards the Scottish coast and only a few tired individuals have rested on the island; this is in contrast to a larger island like Fair Isle, where small flocks of geese, especially Greylags, stay for days or weeks each autumn. Greylag passage is rather similar at both islands but the numbers of Pinkfeet are high at North Rona and very low at Fair Isle, where the highest number recorded is only 33. In 1960 Whooper Swans were common at North Rona and absent at Fair Isle, but this situation was more or less reversed in 1961 and 1967. Merlin totals are similar at the two places but tend to show a good passage at one island associated with low numbers at the other.

These differences appear to be associated with weather conditions. When the weather is ideal for passage from Iceland to Scotland, as in October 1962, more birds are seen passing North Rona than Fair Isle. In years like 1961, stronger winds and approaching fronts have drifted the birds away from their preferred direct route and towards the northeast, and Fair Isle has then recorded greater numbers than North Rona.

In 1962 peak days of wildfowl and Merlin passage occurred on 7th and 9th October and both migrations were associated with cyclonic weather over Iceland. On 6th October, after the passage of a depression, there was a col over Iceland, and on the following morning 109+ Pinkfeet, 11 Greylags, 30 grey geese and 15 Merlins passed over North Rona in fresh, becoming light, southerly winds and clear conditions. The Pinkfeet were heard calling from dawn, and four flocks flew north to south over the island between 100 and 200 feet above sea level—at 0800 hrs (all times GMT) 32 birds, at 0900 hrs 50 birds, at 0920 hrs 10 birds, and at 1230 hrs 17 birds. The Greylags passed over in the afternoon and the Merlins also arrived between 1200 and 1600 hrs; they all flew in from the north at about 100 feet. The depression passed over Iceland on 7th and with the clearing of the cold front on 8th there was renewed passage at North Rona on 9th. Flocks of 30 and 45 Pinkfeet passed over from north to SSW at 0800 hrs and 65 flew north to south at 0855 hrs; 12 Merlins arrived during the day. The only birds of these species at Fair Isle on these two days of peak passage were three Pinkfeet on 7th.

The high numbers of Pinkfeet at North Rona suggest that this species is surprisingly accurate in its migration from Iceland to Scotland, and the fact that, on days of wildfowl passage, Pinkfeet arrive earlier than others suggests that they may complete their journey more quickly and so are less likely to be caught by bad weather and drifted off course.

Barnacle Geese are commoner at North Rona than at Fair

Isle; 75 at North Rona on 17th October 1967 contrast with the all-time autumn record of 18 in a day at Fair Isle. Greenland White-fronted Geese are surprisingly scarce at North Rona, with only single records in 1961 and 1963; the species is also scarce at Fair Isle, and this may reflect an entry into western Britain to the south of North Rona.

The bulk of the Lapland Buntings recorded at Fair Isle are in September, with smaller numbers in October, so the expeditions to North Rona may have missed most of these birds. Even so the data show that years of abundance and paucity have coincided at the two islands—see table 2. Ex-

Table 2. Comparison of bird/days for Lapland Buntings at North Rona and Fair Isle during expedition periods

	1960	1961	1962	1967
North Rona	34	23	86	0
Fair Isle	66	30	179	0

amination of the daily records has shown simultaneous arrivals of this species at North Rona and Fair Isle, indicating a broad-front arrival, and this is also true for Snow Buntings. Fair Isle usually has a larger flock of Snow Buntings in October than North Rona, being between 75 and 300 in the periods of comparison. This was true in all years except 1961, when the North Rona flock peaked at 200; the maximum daily totals in other years were between 15 and 100, with 150+ in 1963.

Migrants of continental origin. Passerine migrants of continental origin have been observed at North Rona on every visit between 1959 and 1967; on occasions the falls of lost night-migrants have been very large. Table 3 gives the maximum daily totals of the more regular continental migrants at North Rona for these nine years, though, of course, not all the Redwings, Wheatears and Meadow Pipits were of continental origin. On some visits the actual numbers were not recorded for some species and only absence or presence was noted.

Fieldfares have been very common in some years and the presence or absence of this species with an arrival of Redwings can give some indication of the origin of the Redwings when subspecific identification in the field has not been attempted. In October 1961 the Redwings at North Rona when we arrived on 13th were a mixture of races (the Icelandic birds were probably part of a movement seen at Fair Isle on 12th), and there were no Fieldfares; but 400 continental Redwings on 20th were accompanied by 40 Fieldfares.

It appears that continental Redwings have been more abundant at North Rona in October than Icelandic birds and

Table 3. Maximum daily totals of regular October migrants at North Rona

	1959	1960	1961	1962	1963	1964	1965	1966	1967
Fieldfare	200+	500+	40	6	x	50	100	50	15
Song Thrush	x	x	20	6		2	5	1	
Redwing	1000	500	1000	1000+	x	300	100	6	100
Blackbird	x	500+	15	12	x	6	100	x	2
Wheatear	50+	1+	15	150		12	1		
Robin	1	1	4		1	2			
Blackcap	10	4		2		3	1		12
Goldcrest	6	6	25	6	1	2		2	4
Meadow Pipit	500	50+	300	300	x	70	20	x	10
Chaffinch	12		6	4			1	1	2
Brambling	50+	6	11	2		6	33		

Note A 'x' indicates presence but no count.

the reason for this may be that Redwings on a night flight in favourable weather from Iceland to Scotland would pass over North Rona before dawn. In inclement weather, when night-migrants are likely to be grounded on an island, these birds would be drifted east or south of the shortest direct route to Scotland, which lies through the North Rona area. The majority of the Meadow Pipits were also probably of continental or Scottish origin; there were Icelandic birds at North Rona on 14th October 1961, but October is rather late for these birds.

Blackbird numbers have generally been low, because the expeditions have usually left before the peak of the North Sea Blackbird migration; it is significant that the high numbers in 1960 were in a year when the expedition stayed into November.

It was shown earlier that North Rona receives a greater variety of species than St Kilda and it was also stated that larger numbers of continental birds reached the island. Table 4 illustrates a few of the more striking examples. These five species were seen at North Rona each autumn from 1959 to 1962, but the St Kilda data refer to all years up to 1962.

Table 4. Relative abundance of continental migrants at North Rona (1959-62) and St Kilda (up to 1962)

	St Kilda	North Rona
Jack Snipe	13 bird/days in all	up to 20 in one day
Song Thrush	13 bird/days this century	up to 20 in one day
Blackbird	up to 17 in one day	up to 500 in one day
Goldcrest	only one record	up to 25 in one day
Brambling	no autumn record since 1911	up to 50+ in one day

After visits to the island in 1961 and 1962 RHD thought

that the most interesting migratory feature at North Rona was the surprisingly large arrivals of continental night-migrants. Comparative observations from St Kilda suggested that the much smaller numbers there could by no means be entirely explained by the physical difficulties of birdwatching and the dispersion of migrants over a larger area. RHD considered that the regular arrivals at North Rona were due to the fact that the island is just within the range that a night-migrant from Scandinavia could travel in one night's flight, whereas St Kilda is well beyond. This idea is supported by the following visual observations from Fair Isle and North Rona.

Most of the continental migrants recorded at North Rona and Fair Isle are common Scandinavian species which winter in the British Isles, especially Scotland and Ireland. After nights of inclement weather, especially with southeasterly winds, these birds are seen, sometimes in spectacular numbers, at Fair Isle and to a lesser extent at North Rona.

Fair Isle has two lighthouses and it has been possible to observe the arrival of night-migrants at the island. Observations by RHD and by G. J. Barnes have shown that in October these birds usually appear at Fair Isle from about 0200-0300 hrs and continue to pass through the beams, on overcast nights, until dawn. Most birds, not attracted to the lighthouses, appear to arrive on the island around first light, although falls do occur later in the day, especially after the clearance of low clouds and rain. The early morning arrivals of continental night-migrants at Fair Isle are most spectacular, with the birds swirling down from the skies with much excited calling to land on the island. It is unusual to see them struggling into the island at sea-level.

Norway is about 200 miles east of Fair Isle and so the first birds have travelled at least 200, and probably 300, miles by the time they are seen at the Fair Isle lighthouses. These migrants have been flying for about ten hours since leaving the coast of Norway at dusk. The birds which overfly, or pass between, Orkney and Shetland (including Fair Isle) have about five hours to go before dawn, and in this time they could travel another 100-150 miles to the west. North Rona lies about 150 miles west of Fair Isle, and so the first waves of a broad-front movement of Scandinavian migrants would reach that area about dawn. The earliest recorded movements at the Fair Isle lighthouses have been at midnight (G. J. Barnes) and, on such nights, these migrants could be well west of North Rona at dawn.

The arrival of these drifted migrants is similar at North Rona, but later in the day than at Fair Isle. For instance, on 20th October 1961 the wind was light and easterly, with early

morning fog at North Rona. The visibility soon improved, and from 0800 to 1200 hrs there was a strong arrival of night-migrants, which included 400 Redwings, 40 Fieldfares, 20 Song Thrushes and 25 Goldcrests, as well as smaller numbers of other species, of which the most unusual was a Barred Warbler. On the same day at Fair Isle, Peter Davis wrote in the log-book: "A fair number of continentals arrived overnight; chiefly Redwings (c. 400) but also 60 Fieldfares, a few Blackbirds, 25 or more Goldcrests and a few other species." These birds were obviously part of the same movement, with arrivals before or at dawn at Fair Isle and later in the morning at North Rona.

A detailed examination of the records shows that arrivals at North Rona are usually on the same day as the arrivals at Fair Isle but occur later in the day; sometimes the peaks are a day later. This could be due to tired birds arriving late in the day and not being observed until the following morning when they start to search for food, or grounded birds from Shetland trying to continue their passage to Scotland or Ireland.

As is to be expected, Fair Isle receives a greater variety of continental species, and nearly always larger numbers of drifted night-migrants, than North Rona. When a southeasterly or easterly airstream affects both islands, good falls of birds of similar species are seen at Fair Isle and North Rona. When the weather conditions are more localised and the winds at North Rona are from a different direction, falls of Scandinavian migrants at Fair Isle are not matched by similar arrivals at North Rona.

An arrival completely opposite to the normal pattern occurred on 9th October 1962, when a very large and varied fall of drift-migrants reached North Rona but there was no corresponding movement at Fair Isle that day. The wind was light and northerly at North Rona, with drizzle at dawn; the rain belt cleared the island about 0800 hrs and soon visibility was excellent; later the wind veered to northeast. In the early morning, goose passage from the northwest was strong (see above) but later, especially from 1100 hrs, Scandinavian migrants poured into the island from all directions, but mainly from the east; 70 Redwings were on the island in the morning, but from 1100 hrs their numbers swelled to over 1000, and many smaller passerines came in around mid-day. We recorded Turtle Dove, Jackdaw, 6 Fieldfares, Ring Ouzel, 2 Blackbirds, 6 Song Thrushes, 150 Wheatears, Whinchat, Redstart, 2 Blackcaps, Lesser Whitethroat, 3 Garden Warblers, Goldcrest, 2 Spotted Flycatchers, Pied Flycatcher, Grey Wagtail, 2 Siskins, 2 Parrot Crossbills, Brambling and more Meadow Pipits as new arrivals during the day. We also

saw a Hen Harrier and a Red-necked Phalarope, to bring the day's total of species seen on the island to 60.

No movements of this size were recorded at Fair Isle on 8th or 9th, but there was a mixture of northwestern and continental species arriving on 10th. It would appear that the night-migrants of 8th October may have passed to the north of Fair Isle and some of them came downwind from the northeast in the rain belt to land at North Rona on the morning of 9th October, when the weather improved. Most of these Scandinavian migrants departed at dusk, or during the night, for the then easily visible hills of Sutherland over 40 miles away.

At Fair Isle, grounded night-migrants wait for dusk before continuing their journeys, but at North Rona these birds have sometimes been seen to leave the island during the day and fly directly towards the visible mainland. For instance, Boyd noted this with Redwings on 17th and 18th October 1959, and 75 Redwings flew off towards Cape Wrath at 1115 hrs on 27th October 1967; 22 Fieldfares did likewise at 1500 hrs on 21st October 1965, and 60 more flew off east at 0800 hrs on the 22nd.

This difference in behaviour is probably due to the small size of North Rona, which offers little cover or food for large numbers of grounded passerines compared with larger islands like Fair Isle. Certainly the mortality of passerine migrants in bad weather at North Rona has been very noticeable, (Boyd 1960). Similar conditions occurred in 1961, when large numbers of Redwings and Meadow Pipits, grounded on North Rona since at least 14th October, were noted in ragged condition, with many dead, on 15th and 16th.

The visual observations collected at North Rona between 1959 and 1967 agree with radar data collected and analysed by Myres (1964) in Unst, Shetland, and Lee (1963) in Lewis. Myres, in a very detailed radar study of the night migration of Scandinavian thrushes over the northeast Atlantic in autumn, showed that there is a regular westward broad-front passage of thrushes from Norway across the sea as far north as Shetland. He found that thrushes over the sea make a dawn ascent and usually reorientate; this may explain why we have observed these migrants dropping into the island from a height during the day. His much more detailed radar studies and our visual observations at North Rona both show that the front of an overnight passage of night-migrants from Norway extends as far west as North Rona at dawn, especially with southeast or east winds, and that arrivals of continental night migrants are relatively regular in this area in autumn, except in strong westerly or northerly winds.

October residents

The status of some of the October residents has been puzzling, and it is not certain whether some of the individuals noted were migrants or remnants or successful or attempted breeding pairs. Small numbers of Ravens each autumn suggest that one pair breeds regularly. The records of Peregrine, Hooded Crow, Wren, Twite and House Sparrow are much more sporadic and possibly the island occasionally supports a breeding pair, with sporadic colonisation from Sutherland or Lewis.

Black Guillemots were only seen on five days during the nine visits and this indicates that the breeding birds vacate the island in winter, as do the Oystercatchers. Both species leave St Kilda in winter (Waters 1962 b). Shags, Eiders and Fulmars were seen in good numbers, and some of the population may winter at the island.

Large numbers of birds were always associated with the seal herd; they were either gulls feeding on dead seals and afterbirths or waders feeding in the muddy seal wallows and pools. The numbers of these birds varied from year to year and table 5 gives the highest recorded day's totals for each species between 1959 and 1967.

Table 5. Annual highest daily totals of gulls and waders at North Rona during expedition periods

	1959	1960	1961	1962	1963	1964	1965	1966	1967
Turnstone	20—	100	100	100	xp	x	xp	100	300
Snipe	20	x	17	30	xs	10+	1	20	7
Jack Snipe	20	3	6	5			1	1	2
Curlew	5	8	21	13	xs	10	2	1	7
Redshank	30	20	15	30	x	x	3	10	20
Purple Sandpiper		200+	50	35	x	5	xs	100	80
GBB Gull	500	500+	700+	800	xp	x	xs	100	600
Herring Gull	few	20+	200	100	x	x	xs	10	x

Note A 'x' indicates presence but no count. Abbreviations mean scarce (s) and plentiful (p).

Acknowledgments

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Summary

Migrants are easily located on North Rona, which is well sited for studying migration off northwest Scotland. A detailed systematic list of the 116 species identified on expeditions to study the seals in Octo-

ber 1959-67 is given and comparisons are made with Fair Isle and St Kilda. North Rona falls between the two in the number of species seen, even getting more Iceland/Greenland birds at this season than St Kilda.

Goose passage is more noticeable over North Rona than at St Kilda or Fair Isle, possibly because it lies on the direct route from Iceland to Scotland, and geese and associated Icelandic species apparently occur more commonly at Fair Isle than North Rona only when driven off course by the weather.

Continental migrants are much commoner at North Rona than St Kilda. It is suggested that the comparatively large numbers are due to the fact that North Rona is just within range of a single night's flight from Norway; the birds tend to reach Fair Isle during the night or at dawn and North Rona during the morning. Radar confirms this.

There is little feeding or cover for large numbers of grounded passerines on North Rona and at times they leave during the day for the visible mainland, instead of waiting for dusk as at Fair Isle.

The status of certain October residents is briefly discussed.

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Short Notes

Breeding birds of Whalsay, Shetland

The status of a number of species has changed markedly on the island of Whalsay since Venables & Venables (*Birds and Mammals of Shetland* 1955: 360-361) wrote on the subject. They did not record Redshank, Whimbrel or Dunlin as breeding. Dunlin have bred annually in small numbers (say 10-20 pairs) since 1956 and possibly did so earlier when I was away. A pair of Whimbrel bred for several years before 1960, and since then the number of pairs of this species and of Redshank has been:

	1960	1961	1962	1963	1964	1965	1966	1967
Whimbrel	2	2	2	3	3	4	5	4
Redshank	1	0	2	2	3	3	3	1

Golden Plover and Red-throated Diver, both recorded as extinct by Venables & Venables, now breed regularly. Though I have certainly been away in some years, I do not know when Red-throated Divers were ever extinct as breeding birds on Whalsay. I have known them there for the past 40 years or more and they have increased from 2-3 pairs to 12-15 pairs now.

Other species not recorded breeding by Venables & Venables, but now doing so regularly, are Red-breasted Merganser and Razorbill; and White Wagtail and Merlin (not in past 10 years) do so sporadically. Some 40 pairs of Kittiwakes breeding at Clett Head in 1967 (*Scot. Birds* 4: 572) were also new to the island, and now there are over 60 pairs in 1968.

JOHN H. SIMPSON.

White Stork in Aberdeenshire

At 8.30 a.m. on 2nd June 1967 I was in a train passing close to the Don about 2 miles east of Inverurie. At this point there are several small islands in the river. On one of them a large bird was standing quite still though the train passed within 50 yards of it. I had it in full view for about 20 seconds in good light and it was undoubtedly a White Stork.

Roughly Heron size, it had a relatively bulkier body, pure white plumage with black scapulars and wingtips, and long red or orange-red legs and bill. Although I thought the leg, bill and wing colours were fully saturated I could not be certain of its age.

The locality is about 15 miles from where George Dunnet and others saw a similar bird a few days later.

ALISTAIR J. M. SMITH.

Early on 7th June an 'Osprey' was reported to be feeding in a grass field near Ellon. Dr Robert Fordham and I went to investigate and found that it was a White Stork. There was no mistaking this large white bird with black wingtips. The very long bill and legs were pinky-orange and the body plumage was lightly flecked with grey, especially on the lower neck and upper breast. It was not ringed.

The bird remained in this field for some hours, walking round and feeding actively. It stayed until at least the 9th and was seen by a number of birdwatchers, including G. Raeburn, W. Murray and J. Conroy.

GEORGE M. DUNNET.

King Eider in Shetland

On 12th January 1968 near the Inner Voder, a reef about seven miles northeast of Lerwick, I saw an immaculate

drake King Eider with a party of about a dozen Eiders. The skipper of the boat I was in obligingly brought his vessel to within 30 yards of the bird, enabling me to see the orange forehead and green face, and the pale blue-grey 'space helmet' markings on the head, as well as the black V on the chin.

The bird was seen subsequently in this area, and was still present on 19th April, when John H. Simpson found it in even better plumage with a raft of Eiders and watched it at very close quarters. The raft of birds broke up, and seven remaining Eiders flew off when he took his boat too close. The King Eider, however, preferred to keep out of reach by diving. Four dives were timed as 2 mins. 10 secs. (twice), 1 min. 55 secs. and 1 min. 45 secs.

DENNIS COUTTS.

(There have been several reports of single drake King Eiders in Shetland waters in recent years (*Scot. Birds* 3: 311; 4: 295, 446) but it is not clear whether more than one bird is involved.—Ed.)

Recoveries of raptors ringed on Speyside

One hundred and nine raptors, mostly nestlings, were ringed for the Speyside Predator Survey from June 1964 to the end of 1967 in the Moray Basin faunal area, mainly in Strathspey and Badenoch. Up to April 1968 there were seven recoveries and two 'controls' of live birds. Some of these are of interest.

The Kestrel is largely migratory north of the Grampians (*The Birds of Scotland* 1953). There were four recoveries, all distant, of first-winter birds from the 38 nestlings ringed in 1966 and 1967: one near Tours, north central France, in October; one at Campbeltown, Argyll, in February; and two from a single brood, at Beal, Northumberland, in December, and in Hertfordshire in April, respectively.

A female Golden Eagle ringed as a nestling in June 1966 was trapped at a nest 32 km away in March 1968. The nest had been built up but not lined and there were indications that a second bird was present. The territory had been empty for most or all of the century until about 1965. A pair, probably both immature birds, built up but did not line a nest in 1966. The area was not visited in 1967 but it may be seen that at least one bird had been replaced by March 1968. It is of interest that an immature less than two years old should be paired and have built up a nest, and that this should occur in a 'marginal' territory. Presumably the pair would not have bred in 1968.

One of a brood of two Ospreys ringed in the Moray Basin in

July 1967 was recovered near Seville, in the Guadalquivir Delta, that November. In an unpublished table of ringing recoveries of northwest European Ospreys up to 1960, Miss P. Whitehead (now Mrs Weir) listed nine Iberian recoveries, mostly in October and November, among 33 first-winter Swedish birds recovered. The table gives no Iberian recoveries of first-winter birds from elsewhere, but Moll (*Der Fischadler, Neue Brehm Bucherei*, monograph in German, 1962) includes two such records among 15 first-winter recoveries of birds ringed in Germany, Poland and the USSR. Appropriately, the Scottish bird was recovered further west than all but one of the continental birds.

DOUGLAS N. WEIR.

Golden Eagle calling

On 14th April 1968 I was walking on the hills in North Harris. While on a ridge I suddenly heard behind me a loud, sharp, clear call and on looking round I saw an eagle rising steeply up the rock face about a hundred yards away. The call was repeated rapidly several times and thereafter at intervals as the bird soared higher and higher. Finally, it was many hundreds of feet above me and occasionally obscured by wisps of cloud but its calls could still be heard distinctly.

I reached the summit of the hill and descended into a valley on the far side. Once more the eagle circled the area and called twice or thrice before passing from view.

I then began the ascent of a neighbouring hill and had climbed to over 2000 feet when once again I heard the eagle call. I looked down and saw the bird ascending steeply from the valley. After calling several times it disappeared.

I find it difficult to describe the call, but to compare it to the yap of a small dog would not, I feel, be inappropriate. In twenty years of walking in Golden Eagle territory this was the first occasion on which I heard the bird calling.

IAN M. MACLEAN.

Gyr Falcon in Orkney

On 23rd November 1967 I received a report of a 'white eagle' on North Ronaldsay. On investigating I discovered a very white falcon which, from notes made then and on subsequent sightings, I recognised as the Greenland form of the Gyr Falcon. On 9th December both J. Cutt and I saw the bird with a male Hen Harrier, when it at once appeared larger and whiter, and on 16th J. N. Tulloch saw it rise from

beside a loch, where he found a dead Moorhen.

It was not so alert or energetic as a Peregrine, and in flight almost suggested a harrier with its slow actions and very pronounced wing-beats. The following description was made:

Whole head white; mantle, scapulars, back, rump and upper tail-coverts white with dark spots and small bars, slightly heavier across mantle and scapulars; tail white with dark shafts and faint barring, though this was not noticeable in flight; underparts white with dark shafts, particularly on breast and belly, and irregular faint spots and bars over whole area; under tail-coverts white; whole wing white, with dark shafts and intermittent dark spots and bars; remiges pale brown; bill slate-blue; legs and feet yellow.

Apart from the dates already mentioned, the bird was seen on 24th and 28th November and 4th and 24th December.

K. G. WALKER.

(The most recent of a number of Orkney records was on 13th May 1966 (*Scot. Birds* 4: 371).—ED.)

Little Ringed Plover in Renfrewshire

About 1700 hrs BST on 7th May 1968 Hector Galbraith showed us a bird in the marsh at Paisley Moss which he suspected was a Little Ringed Plover. As we did not have binoculars with us we could not verify this identification, but we were struck by its strange call. We returned two hours later with binoculars and telescopes and found the bird feeding on one of the small muddy islands we had built during the previous summer.

GTW, who had seen many Little Ringed Plovers in Morocco during the previous three weeks, immediately identified the bird as this species. R. G. Caldow and R. Dalrymple joined us later, and we watched the bird for over an hour, noting the following characteristics:

No other birds present for size comparison, but bird lacked 'large-headed' appearance of Ringed Plover. Short, thin, very dark or black bill; prominent orange eye-ring, giving bird a hard, even aggressive look; black stripe beginning at base of bill thickening through eye; white forehead with thin black line above; very thin white line above this marking, continuing over black eyestripe; black band across breast, like Ringed Plover; colour of crown and back not noticeably different from Ringed Plover; white underparts; in flight, uniform brown upper wings; legs slightly yellowish. Call—a short, high-pitched *tee-oo*.

The bird was not present the following day. This is the second record for Clyde, and the first for Renfrewshire.

IAIN GIBSON, GEORGE T. WHITE.

(This is the first satisfactory spring record since 1894 and,

following the 1967 record of a Little Ringed Plover at Hamilton on 1st July (*Scot. Birds* 5: 27), increases the hope that the bird may soon breed in Scotland.—ED.)

Bonaparte's Gull in Sutherland

While we were visiting Oldshoremore, near Kinlochbervie, Sutherland, on 17th August 1967 we noticed a gull which we had never seen before. We watched it both perched and in flight in overcast but bright conditions at ranges down to 25 yards. It was smaller in overall length and in wingspan than Kittiwakes seen in flight beside it, and its wings were relatively broader and seemed more pointed. Its flight was fluttering, similar to that of a Little Gull; it flew low over the water and did not land to feed nor pick from the surface, but plunged in, submerging its head and shoulders.

It was sligher and less bulky than a Black-headed Gull with which we had an opportunity to compare it, and its plumage, though similar, differed in the following respects:

Head slightly darker than neck with black spot behind eye; white leading edge to wing from carpal joint to tip; black distal half to trailing edge; black mark parallel to this slightly in from tip of outermost few primaries; undersurface of primaries white, that of secondaries slightly darker but still paler than in Black-headed Gull.

Bill blackish with no sign of red, also seemed shorter and less down-curved than in Black-headed; inside of mouth red; eye dark and giving gentle appearance; legs and feet pinkish-yellow unlike Black-headed.

When we compared this description with those in textbooks we concluded that the bird was a Bonaparte's Gull, a North American species only recorded in Scotland on one previous occasion.

DAVID T. PARKIN, PATRICIA PARKIN.

(This North American species has been recorded some 15 times in the British Isles (*Brit. Birds* 57: 270). The only previous Scottish record is of one shot in Dunbartonshire at the edge of Loch Lomond at the end of April 1850. The details published at the time (*Zool.* 9: 3117) leave no doubt as to the identity of the bird, which Lumsden & Brown (*A Guide to the Natural History of Loch Lomond* 1895) say was preserved at Ross Priory, and Yarrell (*A History of British Birds* 4th edn. 1871-85, 3: 585) reports was exhibited at a Zoological Society meeting on 4th March 1884.—ED.)

Sand Martin colony under railway platform

A colony of Sand Martins is making use of partly prefabricated nest sites at Ballinluig Junction. The west platform, which is no longer in use, is constructed of concrete slabs,

each of which has a small half-moon drain hole at its lower edge. The soil retained by the slabs is almost pure sand. In May 1968 almost every hole was being excavated by a martin, with a view to a very comfortable nesting hole, if perhaps a rather dangerous one owing to passing main-line trains. The birds were still present at the time of writing in mid June.

T. H. EVANSON.

Meadow Pipit display

As far as I am aware, the only accounts of unusual display behaviour in the Meadow Pipit are those of Averil Morley, Sybil M. Butlin, and C. and D. Nethersole-Thompson (*Brit. Birds* 34: 65, 108-109), all of which are summarised by Dr D. A. Bannerman in his essay on the species in Volume 2 of *The Birds of the British Isles* (1953).

While sitting on a grassy hillock overlooking arable fields near Dornoch, Sutherland, on the morning of 10th June 1967, I saw a display which differed in certain aspects from those previously recorded. When a pair of Meadow Pipits suddenly alighted on one of the wire strands of a nearby fence I noticed that one bird, which subsequent events showed to be the male, held a small tuft of nesting material in his bill. He kept flitting up and down from one strand of wire to another, sometimes perching on a fence post, and twice flew down into the short grass below the fence. Throughout this performance his tail, which at intervals was cocked up, was expanded to show the white outer feathers, and his wings were partially drooped. Eventually he dropped the dried grasses, but continued to display as before until the female flew away, when he immediately followed her. The female also flitted about, but to a much lesser extent, and both birds uttered the *tseep* call-note at intervals throughout the display, which lasted for at least five minutes. The whole incident was, as Miss Butlin so aptly described the one she had witnessed, "extremely dainty."

D. MACDONALD.

Woodchat Shrike in East Lothian

On 19th August 1967 I watched a Woodchat Shrike at Tynninghame for 25 minutes. It perched on a wire fence and on the wooden posts, making flycatcher-like flights back and forth, catching flies in the air. Only twice did it drop to the ground, once returning to a fence post to eat a beetle.

I have seen this species in France, Spain and Yugoslavia. The bird was in good plumage, with chestnut head, broad dark mark from bill through eye, large white scapular

patches and wing spots when at rest, and pattern of scapular patches, wing-bars and white rump in flight, with the very pale underparts prominent as it perched on the fence.

C. S. TAIT.

Notes on the food of the Siskin around Inverness

There is little published information on the food of the Siskin, and in a recent review of the food of finches in Britain, Newton (*Ibis* 109: 33-98) was able to list only about ten plant-species on which this bird had been seen to feed. Over the past few years I have watched Siskins in the Inverness area, and it seems worth noting some of the foods recorded, for they extend considerably Newton's list. Siskins are present in the Inverness area throughout the year, but commonest in the breeding season, when they occur primarily in the conifer plantations on high ground. These are mostly of pine or spruce, mixed with larch, with a scattering of birch and alders in the valleys. In winter many Siskins leave the Inverness area altogether, but some move lower, chiefly into riverside alders and on to overgrown waste land.

In spring the main foods are the buds of pine and larch, but the seeds of these conifers are also eaten, being picked directly from the cones. Siskins also feed at this season from cultivated land and gardens near the woods, where they take the seeds of dandelions and chickweed.

In summer most pairs nest in the plantations and feed there on the shoots of pine and on seeds from the partly opened cones of pine and larch. They also feed largely outside the plantations, on nearby cultivated ground, where they take the seeds of a variety of common weeds. I have seen them mostly on dandelions, chickweed and (in late summer) on bloody-veined dock, but also on shepherd's purse, groundsel, plantains, sorrel and various seeding grasses.

In autumn, although pine seeds are still eaten to some extent, most Siskins move out of the plantations and feed more in birches and on waste land. Their favourite seeds at this season, besides birch, are those of meadowsweet, hard-heads, ragwort and bloody-veined dock. In addition, the seeds of other docks are eaten, together with those of sorrel, thistles, ragwort and nettle.

In winter Siskins move largely onto alders, as soon as the cones begin to ripen, but they also take seeds of birch, and from waste land those of nettle, dock and any remaining meadowsweet and chickweed. Although Siskins obtain most of their food directly from the plants themselves, they also

feed on the ground at the sides of the Caledonian Canal and various small lochs in the area on the seeds of alder, meadow-sweet, dock and others, which are washed ashore in heaps.

In addition to seeds, Siskins eat a variety of small soft-bodied invertebrates, which they get chiefly from their food-plants. For example, I have seen them picking spiders and greenfly from birches and conifers, and blackfly from nettles and docks; they also pick insects from bracken fronds.

Perhaps most people regard the Siskin primarily as a forest bird, and indeed most of the food is obtained in trees throughout the year (mainly conifers in summer, birches in autumn and alders in winter). At least in the Inverness area, however, they make extensive use of seeds from common weeds of waste land and cultivation. In these latter habitats their diet overlaps widely with those of other finches; indeed, here they often feed in mixed flocks with other finch species, their commonest companions being Redpolls.

D. MACDONALD.

Recent News

ANDREW T. MACMILLAN

We are still very much feeling our way with this section and hope readers and contributors will bear with us if it seems scrappy or out of line with what was promised or expected. We are keen to avoid what is merely routine and yet do not want to offer simply a catalogue of rarities or to spoil the interest of subsequent Short Notes in a goulash of their essential meat.

Late winter visitors. Though largely ignoring arrival dates, we may for once mention some late departures, for the number of reports is so much less: a **Brambling** on the Isle of May on 27th May, a duck **Smew** at Cameron Reservoir, Fife, from 15th until at least 18th June, and a **Fieldfare** at Portmore, Peeblesshire, on the 29th.

Spring migration. A **Snowy Owl** was at St Kilda at least from 30th March to 14th April, living on the local mice in Gleann Mor.

An excellent fall of migrants was noted after easterly wind in east Fife on 5th-7th May, including **Willow Warblers**, **Pied Flycatchers**, **Redstarts**, three **Black Redstarts**, a **Red-breasted Flycatcher** and a **Bluethroat**. Migrants were seen also on the Isle of May at this time, including seven **Wrynecks** on the 5th, 14 on the 6th and 7th, and one to three until the 16th.

No really big falls reached Fair Isle but it seems to have been a very good spring for several species. Single **Hoopoes** were there on 17th-19th and 29th April, and at Taynuilt, Argyllshire, on 9th May, near Kinross on 11th-20th, and at Largo, Fife, on 23rd May and 1st June. Different female **Golden Orioles** were at Fair Isle on 14th May and 14th-17th June, and there were other records from Shetland. At Fair Isle it was the best spring since the bird observatory began for **Red-backed Shrikes**, which were there from 10th May to 13th June, with eight on 23rd May and high numbers to the 30th. There was one on the Isle of May on 5th-7th May, one at Dornoch on the 30th, and "a lot" in Shetland, including 7-8 on Whalsay in the last week of the month. Although we erred in claiming one as the first for the Outer Hebrides other than St Kilda (5: 112), **Goldfinches** continue to be interesting. One on Fair Isle on 5th-8th June was only the fourth recorded there, and numbers were noted elsewhere in Shetland, where the species is rare (e.g. Whalsay on 4th June), and apparently also in Orkney. Unusual numbers were recorded on the Isle of May, especially in April (8 on 2nd, 20 on 3rd).

A **Long-tailed Skua** that joined the Arctic Skua colony on Fair Isle from 28th June to 2nd July may be included in this section. They do this occasionally.

Escapes. The problems posed by escaped cagebirds have been news recently. Fair Isle had a **Lanner Falcon** (complete with jesses and bells) from 7th to 15th June, a male **Rose-coloured Starling** from 23rd May to 1st June that looked and behaved like a wild bird until it was trapped, a male **Black-headed Bunting** from 17th to 26th April that also looked a wild bird until it was trapped, and finally three male **Red-headed Buntings**. One of these last was on Rhum from 26th April to at least 6th May.

Overshooting. An adult male **Swallow** ringed at its roost on Fair Isle on 26th April this year was found dead at North Kessock, 170 miles SW, nine days later. This recovery illustrates the phenomenon of overshooting by Scottish mainland breeding birds on spring migration.

Breeding birds and summer visitors. A duck **Pintail** with four week-old ducklings on Loch Ken on 9th May must have begun laying in the first week of April—a month earlier than indicated in the *Handbook*.

Various rather interesting breeding records have come to our ears in general terms, and it seems that 1968 may emulate 1967 in adding two species to the Scottish breeding list, though only one to the British list. **Redwings** and **Wood Sandpipers** also seem to have had an exceptional year, with

breeding at new sites and in record numbers.

Moulting Canada Geese. The flock of moulting **Canada Geese** on the Beaulieu Firth numbered 233 on 9th June. Later in the summer a high proportion of the flightless birds was caught for ringing, and produced a fine crop of recoveries from previous catches and from birds ringed in Yorkshire, the main source of the flock.

Bird of ill omen. The sandy island of Ensay in the Sound of Harris has long been used as a burial ground, but the wind has exposed many of the skeletons. This year Roderick Graham found the nest of a pair of **Ravens** there, largely constructed of human bones.

Another golf ball. Further to last quarter's tailpiece about gulls and golf balls, it is reported that on 9th July 1939 a golf ball was found on top of the Scar Rocks, Luce Bay, Wigtownshire, by the late Rev. J. M. McWilliam, five miles from land and 22 miles from the nearest golf course.

Surprise, surprise! We have been sent a cutting from the *Sunday Times* of 28th April 1968 headed *Zoo's surprise*. "Two pairs of Cornish Choughs," it says, "have astounded their keepers at Paignton Zoo by producing swan eggs." If the keepers were surprised, we cannot imagine what the birds must have thought.

Letter

SIR,

Geese at St Kilda

I have read Kenneth Williamson's paper on goose emigration from western Scotland (*Scot. Birds* 5: 71-89) with interest. The observations from St Kilda in 1962 are mine and were either extracted from the records that I deposited with the Nature Conservancy or taken from the migration reports that I sent to the British Trust for Ornithology while I was on St Kilda. My observations on this goose passage have been published briefly (*Scot. Birds* 2: 293) but some now seem worth mentioning in more detail as they do not support Williamson's statement that flocks seldom put down at St Kilda unless the weather seems unsuitable for onward journeying.

On 27th April 1962 27 Barnacle Geese were grazing on the Cambir and this number had increased to 41 by the following afternoon. They were then disturbed and flew off and, after circling around, were later seen from the Cambir grazing on top of the island of Soay. On 28th April 12 Grey Lag Geese were feeding on the Cambir and were less wary than the nearby Barnacles. The weather on both 27th and

28th April was settled with excellent visibility and no rain. The wind varied between easterly and NNW and was never more than Beaufort force 3. On both days there were long sunny periods. Goose droppings were numerous on the Cambir at this time, suggesting that geese had been there for some considerable time. Four Greylags were flushed from the Cambir at 0500 hrs on 13th May and one was seen on the island on several dates to 28th June.

These observations show that geese do stay and feed on St Kilda and that they do so even when weather conditions seem suitable for onward migration.

W. E. WATERS.

Requests for Information

Blue-ringed immature Herring Gulls. On the Isle of May, Firth of Forth, Herring Gull chicks have been ringed with a blue colour ring this year as well as the usual BTO metal ring. Other colours were used in earlier years. The position of the blue ring, whether on the right or left leg, and whether above or below the metal ring or on the other leg, gives the approximate date of hatching of the chick. Please send a note of any sightings of these first-winter gulls, together with details of the colour combination and place of sighting, to Jasper Parsons, Zoology Department, Science Laboratories, South Road, Durham City.

International Wildfowl Census, January 1969. Volunteers are again required to assist with this census, which takes place during the middle fortnight of January. Last year's appeal for helpers produced a gratifying response and a resultant improvement in coverage, so that most of the central lowlands, the northeast and much of the southwest are now adequately covered. Assistance is still urgently required in all other areas and especially in the Inner and Outer Hebrides and in Shetland.

Count forms will be sent to all those who have helped in the previous two censuses, in the hope that they will be able and willing to cover the same areas again in 1969. New volunteers are asked to send their name and address and details of the water(s) they are willing to count to Miss V. M. Thom, 19 Braeside Gardens, Perth, as soon as possible.

Correction

Breeding birds of Orkney. In the annotated list of breeding birds (*Scot. Birds* 5: 92) insert between Teal and Pintail:

Wigeon *Anas penelope*. Several pairs breed regularly on Mainland, and probably also on Sanday and Stronsay (DL). Continues to breed in small numbers on Mainland and on some of the other islands, including Sanday and Stronsay.

The Scottish Ornithologists' Club
TWENTYFIRST ANNUAL CONFERENCE
HOTEL DUNBLANE, PERTHSHIRE
25th to 27th October 1968

Friday 25th October

- 5 to 7.30 p.m. Conference Office in the Hotel Dunblane opens for
 and 8 to 9 p.m. members and guests to register and collect name cards
 and Annual Dinner tickets.
- 6.15 p.m. Meeting of Council.
- 8.30 to 9.30 p.m. **FILM AND SLIDE PROGRAMME** in the Ballroom.
 At 9.30 p.m. details of excursions on Saturday after-
 noon will be given.
- 10 p.m. Meeting of Local Recorders.
- 9.30 p.m. to
 midnight Lounges available for informal discussions and refresh-
 ments (late licence).

Saturday 26th October

- 8.45 to 9.15 a.m. Conference Office opens for registration.
- 9.20 a.m. Official Opening of Conference in the Ballroom.
ADDRESS OF WELCOME by David R. Grant, Esq.,
 J.P., Provost of Dunblane.
- 9.30 a.m. **LECTURE**, "The Birds of the South Atlantic Islands,"
 by Dr M. W. Holdgate (Deputy Director, Nature Con-
 servancy), followed by discussion .
- 11 a.m. **INTERVAL** for coffee and biscuits.
- 11.30 a.m. **LECTURE**, "Palearctic Migrants and African Birds at
 Lake Chad," by I. J. Ferguson-Lees (Editor of "British
 Birds"), followed by discussion.
- 1 p.m. **INTERVAL** for lunch.
- 2 p.m. **EXCURSIONS** by private cars leaving the Conference
 Hotel car park. Details will be posted on the Confer-
 ence notice board.
- 6 p.m. **32nd ANNUAL GENERAL MEETING OF THE CLUB**
 in the Ballroom
BUSINESS :
 (1) Apologies for absence.
 (2) Approval of Minutes of 31st Annual General Meet-
 ing of the Club held in Dunblane on 28th October
 1967 (see *Scottish Birds* 4: 590).
 (3) Report of Council for Session 31.
 (4) Approval of Accounts for Session 31.
 (5) Appointment of Auditor.
 (6) Election of new Members of Council. The Council
 recommends the election of R. S. Baillie and C. G.
 Headlam to replace J. H. B. Munro and G. L. A.
 Patrick who are due to retire by rotation.
 (7) B.T.O. Atlas of British Breeding Birds.
 (8) Any other competent business.
- 7.30 for 8 p.m. **ANNUAL DINNER** in the Diningroom of the Hotel
 Dunblane (dress informal).

Sunday 27th October

- 9.30 a.m. **LECTURE**, "Ornithological Reminiscences," by Profes-

- 10.45 a.m. sor M. F. M. Meiklejohn.
 INTERVAL for coffee and biscuits.
- 11.15 a.m. PROGRAMME OF FILMS, including a film of Gough
 Island.
- 1 p.m. INTERVAL for lunch.
- 2 p.m. EXCURSIONS (informal), leaving the Conference Hotel
 car park.
- 2.30 p.m. MEETING of members of the R.S.P.B. in the Ballroom,
 to which all members of the Club and their guests are
 invited.
- 4 p.m. Conference breaks up.

Conference Office

Outwith registration hours the Conference Office will also be open at intervals during the weekend for members to see the exhibits. A wide selection of new books from the S.O.C. Bird Bookshop will be displayed for purchase or orders. R.S.P.B. literature, Christmas cards, garden bird equipment and gramophone records will be on sale, and also a selection of B.T.O. literature and Christmas cards. A display of paintings by wild-life artists will be on sale in the Exhibition room.

Film and Slide Programme

The programme from 8.30 to 9.30 p.m. on Friday evening is intended to give members and guests an opportunity of showing 2" x 2" slides or 16 mm films. These must however be submitted beforehand to the Conference Film Committee, and should be sent, by 11th October at the latest, to the Club Secretary, 21 Regent Terrace, Edinburgh 7. The slides should be titled and sent with brief notes on what will be said about them, to enable the Committee to make a selection and to form a good programme. It will not be possible to show material which has not been received by this date.

INFORMATION

- (1) **Hotel Reservations.** All reservations must be made direct. Owing to the shortage of single rooms, members are urged to make arrangements to share a room with a friend.
- (2) **Conference Post Card.** It is essential that members intending to be present should complete the enclosed printed post card and send it to the Club Secretary not later than 21st October. Because of limited seating accommodation, the Council regrets that members may invite only one guest each to the Annual Dinner.
- (3) **Registration.** Everyone attending the Conference must register on arrival (10s each) at the Conference Office (for opening times, see Programme). Members attending only the Annual General Meeting do not require to pay the registration fee, which covers morning coffees and incidental expenses.
- (4) **Annual Dinner.** Tickets for the Annual Dinner (price 27s 6d inclusive of red or white wine or fruit cup, and of gratuities) should be purchased when registering. Members and guests staying in the Conference Hotel pay for the Annual Dinner in their inclusive hotel account, but must obtain a dinner ticket from the Conference Office as all tickets will be collected at the Annual Dinner. No payments should be made in advance to the office in Edinburgh.
- (5) **Other Meals.** Dinner on Friday evening is served in the Conference Hotel from 6.30 to 9 p.m. Non-residents will be able to obtain lunch on Saturday or Sunday (12s 6d) by prior arrangement with the Hotel Reception desk.
- (6) **Swimming Pool.** The indoor swimming pool in the Conference Hotel will be available during the weekend at no extra charge.

(7) **Excursions.** Members are asked to provide cars if possible and to fill their passenger seats; to avoid congestion in the car park the minimum number of cars will be used. Members wishing to go out on their own are particularly asked not to go in advance of led excursions to avoid disturbing the birds.

Hotels in Dunblane

Hotel Dunblane (Hydro) (Tel. 2551). Special Conference charge £7.17.6d, inclusive of 10% service charge, bed and all meals (except tea on Saturday afternoon) from Friday dinner to Sunday lunch, after-meal coffee, and the Annual Dinner (with wine or soft drinks). For less than a full day, bed and breakfast is 42/-, lunch 12/6 and dinner 18/6, all with an additional 10% service charge. Rooms with private bathroom have a supplementary charge of 10/- per person per day.

Stirling Arms Hotel (Tel. 2156). Bed & Breakfast from 27/6 to 30/-.

Schiehallion Hotel, Doune Road (Tel. 3141). B & B 21/- to 25/-.

Neuk Private Hotel, Doune Road (Tel. 2150). B & B 23/- to 25/-.

Ardleighton Hotel (near Hotel Dunblane gates). (Tel. 2273). B & B from 25/-.

Hotels in Bridge of Allan

Allan Water Hotel (Tel. 2293). B & B 40/- to 54/-.

Royal Hotel (Tel. 2284). B & B 47/6.

Prices, except for the Conference Hotel, are provisional and should be confirmed.

DUNDEE BRANCH WINTER EXCURSIONS

Sunday 13th October 1968. FIFE NESS and KILCONQUHAR LOCH.

Sunday 17th November. STORMONT and the five lochs.

Sunday 15th December. MORTON LOCHS and TENTSMUIR.

Sunday 19th January 1969. LINTRATHEN LOCH.

Sunday 16th February. GLEN CLOVA.

Sunday 16th March. LARGO BAY.

Sunday 20th April. RESCOBIE AREA.

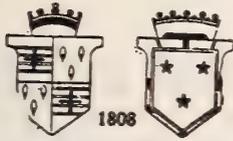
All excursions leave City Square, Dundee, at 10 a.m. by private cars. Those requiring transport should contact the Branch Secretary, Miss Jenny Stirling, 21 Johnston Avenue, Dundee.

SUBSCRIPTIONS, COVENANTS AND BANKER'S ORDERS

Your subscription for the new session is now due and should be sent at once with the enclosed form to the Club Secretary or paid to Branch Secretaries. The winter number of the journal will only be sent to paid-up subscribers.

If you pay income tax at the full rate and have not already signed a seven-year Deed of Covenant, this is the way you can help the Club funds at no extra cost to yourself, as the tax we are allowed to reclaim on a subscription of 25/- is nearly 18/-. If only 50% of our members signed Covenants the Club would gain an annual income of £750, which could be used to give increased services through the journal and other publications, Conferences and lectures and in many other ways. May we invite you to use the enclosed form, which should be sent on completion to the Secretary, who will forward a Certificate of Deduction of Tax for signature each year

A Banker's Order is enclosed for the use of members who find this a more convenient way of paying the annual subscription, and it will also help to lessen the administrative work in the Club office; this should be returned to the Secretary and not to the Bank.



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THE Scottish Ornithologists' Club was founded in 1936 and membership is open to all interested in Scottish ornithology. Meetings are held during the winter months in Aberdeen, Ayr, Dumfries, Dundee, Edinburgh, Glasgow, St Andrews and elsewhere at which lectures by prominent ornithologists are given and films exhibited. Exhibitions are organised in the summer to places of ornithological interest.

The aims and objects of the Club are to (a) encourage and direct the study of Scottish Ornithology in all its branches; (b) co-ordinate the efforts of Scottish Ornithologists and encourage co-operation between field and indoor worker; (c) encourage ornithological research in Scotland in co-operation with other organisations; (d) hold meetings at centres to be arranged at which Lectures are given, films exhibited, and discussions held; and (e) publish or arrange for the publication of statistics and information with regard to Scottish Ornithology.

There are no entry fees for Membership. The Annual subscription is 25/-; or 7/6 in the case of Members under twenty-one years of age or in the case of University undergraduates who satisfy the Council of their status as such at the time at which their subscriptions fall due in any year. The Life subscription is £50. Joint membership is available to married couples at an Annual subscription of 40/-, or a Life subscription of £75. "Scottish Birds" is issued free to members but Joint members will receive only one copy between them.

The affairs of the Club are controlled by a Council composed of the Hon. Presidents, the President, the Vice-President, the Hon. Treasurer, the Editor and Business Editor of "Scottish Birds," the Hon. Treasurer of the House Fabric Fund, one Representative of each Branch Committee appointed annually by the Branch, and ten other Members of the Club elected at an Annual General Meeting. Two of the last named retire annually by rotation and shall not be eligible for re-election for one year.

A Scottish Bird Records' Committee, appointed by the Council, produce an annual Report on "Ornithological Changes in Scotland."

An official tie in dark green, navy or maroon terylene, embroidered with small crested tits in white, can be obtained by Members only from the Club Secretary, at a cost of 17s 6d. A brooch in silver and blue is also available to Members, price 3s 6d, from the Club Secretary or from Hon. Branch Secretaries.

The Club-room and Library at 21 Regent Terrace, Edinburgh 7, will be available to Members during office hours, and on Wednesday evenings from 7 to 10 p.m. during the winter months. Members may use the Reference Library, and there is a small duplicate section, consisting of standard reference books and important journals, which can be lent to students and others wishing to read a particular subject. A lending section for junior Members, which is shared with the Young Ornithologists' Club, is also available.

Forms of application for Membership, copy of the Club Constitution, and other literature is obtainable from the Club Secretary, Mrs George Waterston, Scottish Centre for Ornithology and Bird Protection, 21 Regent Terrace, Edinburgh 7. (Tel. 031 556 - 6042).

NOTICE TO CONTRIBUTORS

1. General notes (not of sufficient importance to be published on their own as Short Notes) should be sent to the appropriate local recorders for inclusion in their summary for the annual Scottish Bird Report, not to the editor. A list of local recorders is published from time to time, but in cases of doubt the editor will be glad to forward notes to the right person. All other material should be sent to the editor, Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12. Attention to the following points greatly simplifies the work of producing the journal and is much appreciated.

2. If not sent earlier, all general notes for January to October each year should be sent to the local recorders early in November, and any for November and December should be sent at the beginning of January. In addition, local recorders will be glad to have brief reports on matters of special current interest at the end of March, June, September and December for the journal. All other material should of course be sent as soon as it is ready.

3. All contributions should be on one side of the paper only. Papers, especially, should be typed if possible, with double spacing. Proofs will normally be sent to authors of papers, but not of shorter items. Such proofs should be returned without delay. If alterations are made at this stage it may be necessary to ask the author to bear the cost.

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

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

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

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

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

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

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

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

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The London Bird Report, compiled by the Ornithological Section and published annually, includes papers, facts and figures of special interest to bird watchers in London.

Further details can be had from the General Secretary:

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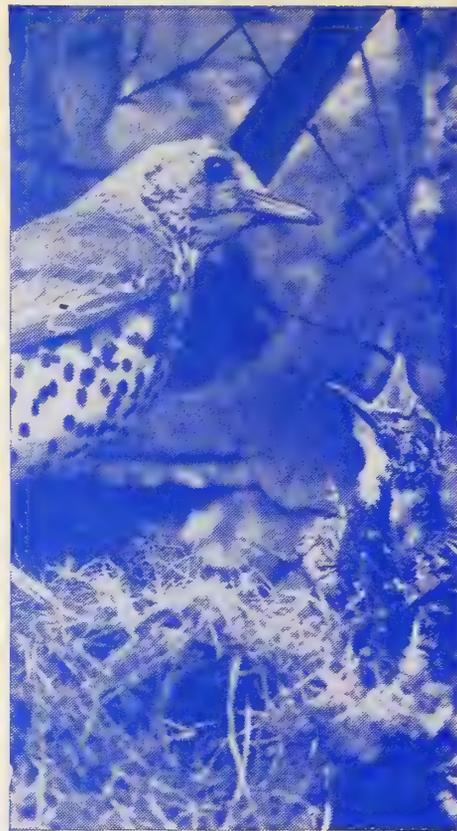
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THE JOURNAL OF THE
SCOTTISH ORNITHOLOGISTS' CLUB

Volume 5 No 4

WINTER 1968

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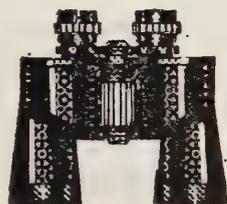
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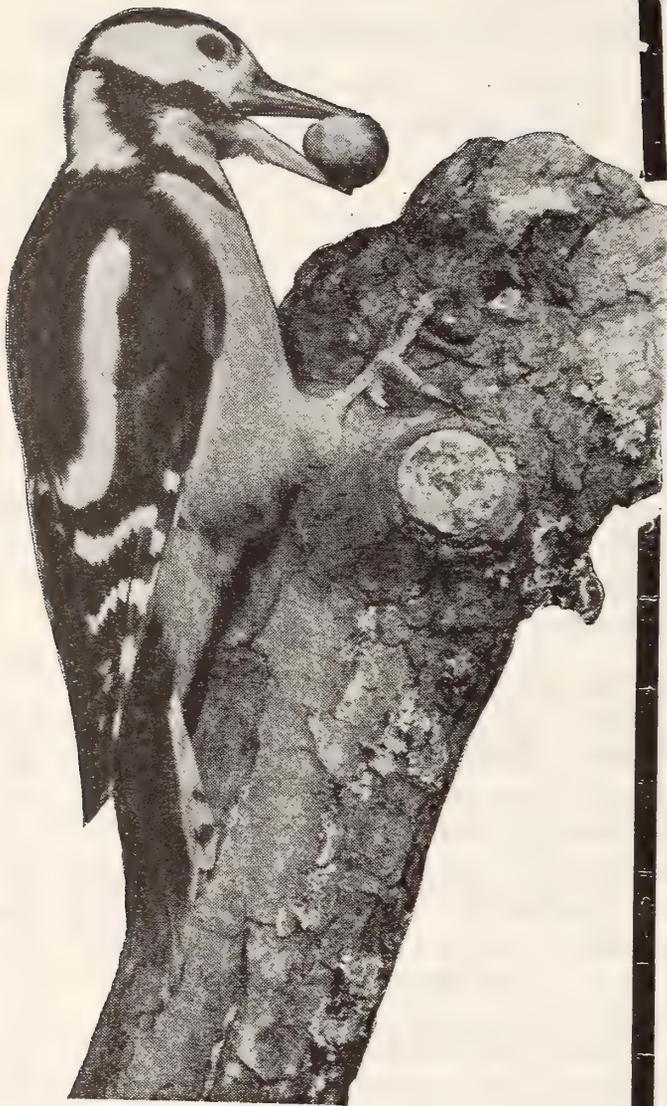
SCOTTISH BIRDS

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Edited by Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12.
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Vol. 5 No. 4

Winter 1968

Edited by A. T. MACMILLAN with the assistance of D. G. ANDREW and
M. J. EVERETT. Business Editor, T. C. SMOUT.

Editorial

Scottish Bird Report. We hesitate to bore readers with another appeal on this subject, yet it is too important to let pass unmentioned. 1968 is almost gone. All records for the first ten months should have been in the hands of local recorders for some little time, and no doubt were, so that it remains only to encourage everyone to send the few notes for November and December as early as possible in January 1969. Local recorders should now be well advanced with their summaries, but these cannot be completed satisfactorily until the flow of notes stops and final reports are received from the more active local birdwatchers. We look forward with keen anticipation to seeing the outcome of all the local planning for the Scottish Bird Report; for it remains a matter of confidence rather than certainty that it will be a fine swan and not an ugly duckling; and this depends as much on the cooperation of the local birdwatcher as on the efficiency of the local recorder.

SOC Conference. Another SOC Conference has come and gone, as enjoyable an occasion as ever, and attended by more people than ever before—over 300 of them, with about 280 at the dinner. Professor M. F. M. Meiklejohn delighted his audience with reminiscences of ornithologists he had met, and James Ferguson-Lees described recent studies of trans-Saharan migrants at Lake Chad; but our outstanding recollection is of Dr Martin Holdgate's lucid plea for preservation of the bird islands of the southern oceans and, especially, the mainland of Antarctica, from thoughtless and irreversible damage, and his optimism that in the present atmosphere of international accord this can be achieved. As the first tourists set an ominous foot on the ice, Antarctica is one of the last places on earth where the natural balance of nature remains largely unaltered by man; but the concentration of breeding species at the relatively few suitable sites renders the whole situation particularly vulnerable to disturbance.

New RSPB office. When the Scottish Centre for Ornithology and Bird Protection was opened at 21 Regent Terrace,

Edinburgh 7, in 1959 it provided vastly more space than had previously been available for the joint SOC and RSPB offices. Yet so rapid has been the increase in the scope and activity of the two bodies that by 1968 there was a distinct lack of space, especially for the RSPB, which has now bought No. 17, four doors away. After extensive repairs and redecoration the premises were occupied in the middle of October.

The closest links will be maintained with the SOC at No. 21, and it is hoped to let the surplus parts of the two buildings to other natural history organisations whose aims and interests will blend with ornithology. The RSPB's premises include a fine large room, the whole depth of the building, which is curtained into offices by day and may be converted to a lecture hall by night. A club room will also be available for the Young Ornithologists' Club in the basement.

St Kilda stamps. In the October 1968 *Newsletter* we read that 'local carriage labels' for St Kilda are being introduced by the National Trust for Scotland. They have been designed by Miss Jennifer Toombs and illustrate local birds—Great Auk (4d), St Kilda Wren (5d), Gannet (9d), Shag (1/6d), Leach's Petrel (1/9d), Guillemot (2/-), Kittiwake (2/6d) and Puffin (5/-). Officially these stamps cover the cost of carriage of mail from the islands to the mainland (but not the subsequent postage), and they will be used by Trust work parties and cruise visitors. They are produced in conjunction with the Great Britain Locals Philatelic Agency. The *Newsletter* reports that the stamps have aroused much interest among collectors, many of whom buy them unused. Those interested may obtain them (complete sets only, at 14/9d each) from the Agency, 119 Praed Street, London W2, or from the Trust, 5 Charlotte Square, Edinburgh 2. Further sets will be issued later.

Conference advertisements. We are asked to publicise the 15th International Ornithological Congress (Holland, 30th August to 5th September 1970) and the 3rd All-Ireland Conference on Bird Conservation (County Down, 28th February to 2nd March 1969), of which details may be had respectively from Professor Dr K. H. Voous, c/o Netherlands Congress Centre, 10 Churchillplein, The Hague, and from the RSPB, 58 High Street, Newtownards, Co. Down.

Current literature. Notes with a Scottish interest include: Food of the Long-eared Owl in Inverness-shire. R. D. Wooller and G. S. Triggs, 1968. *Bird Study* 15: 164-166. The autumn migration records of the Red-breasted Flycatcher. M. C. Radford, 1968. *Bird Study* 15: 154-160. New analyses, including Fair Isle and Isle of May records.

Ornithological Atlas 1968 - 72

A good start has been made in 1968 towards recording the breeding of all species of birds throughout Scotland. This cooperative enquiry has been launched by the BTO and backed by the SOC Council as a major part of the campaign to record the present status of our breeding birds. Only by establishing a base-line can we judge, in the future, the effects of pesticides, pollution, and the pressure of an expanding human population.

The Atlas project is already indebted to *Scottish Birds* for references to it in recent numbers, and the leaflet describing more fully both the aims and techniques to be used was enclosed with the Spring 1968 issue. In spite of the fact that, unavoidably, this was rather late for the winter Branch meetings, which give members their best opportunity for discussion, exemplary progress has been made in 1968 in the Moray Basin, Perthshire, Angus, and parts of Argyll. In addition, complete coverage has been promised and some progress made in 1968 in ten further counties or major areas, as well as by many individuals. A map showing this was on display at the SOC Conference at Dunblane, and a brief report was given at the AGM by the Scottish Coordinator.

The basic unit of area for fieldwork is the 10 km x 10 km square of the National Grid, shown on all scales of Ordnance Survey maps. It is not necessary, and in many cases impossible because they are not issued, to use the 2½" OS maps, which exactly cover 10 km x 10 km in the provisional series and 20 km x 10 km in the new 2nd series; though this scale will obviously show the 10 km square boundaries more precisely than the usual 1" OS, and much better than the ¼" OS. The aim is to record positive proof of breeding for every species that is doing so in the square. No effort will be made to count birds or to determine their relative densities. Detailed instructions and cards for recording are available from the Coordinator and from Regional Organisers.

The information to be noted covers a variety of acceptable evidence, so that it will rarely, if ever, be necessary actually to find nests. This will save time for the observer and disturbance for the birds, which must usually be much more secretive about their nest sites than in the carrying of food to nestlings or recently fledged and begging young; though it is clearly essential to be sure that such activities are correctly interpreted and that the nest is actually in the same area. The non-specialist birdwatcher will find it comparatively easy to record good evidence for the breeding of common species anywhere, and for the majority of species in all accessible areas—an enjoyable and sometimes instruc-

tive pastime. "Time spent in reconnaissance is seldom wasted." If it is possible, before the breeding season, to study both one's area and the instructions, one can later keep one's eyes for the birds rather than for frequent reference to maps and instructions.

There are just under 1100 squares in Scotland and the Islands. In 1968, over 150 squares have been covered to a standard of 50%-80%, about 100 have been well started (and more cards have yet to some in), and firm promises have been received for another 200 (including the Northern and Outer Isles and the counties of Caithness, Renfrewshire and Ayrshire); active support is promised from four further branches but details of the areas have not yet been settled. To avoid undue overlap and duplication of paperwork, disturbance, and problems in some areas with private property, it is essential that Atlas work in Scotland should be organised on a regional basis as far as possible. Volunteers have already come forward for this purpose in nearly all the well populated parts of the country; in almost every case these are the local recorders, to whom much gratitude is due for fully accepting responsibility for their regions.

While all positive and accurate records for any part of Scotland will be welcome and valuable, early application to the Regional Recorder or Branch Secretary is recommended. For the Isles, Sutherland and Ross (apply to C. G. Headlam), Inverness-shire, N. Argyll, and the Border Counties, much help will be needed from non-residents.

Both in the interests of decent behaviour, and to avoid committing an offence under the Protection of Birds Acts, it is essential to avoid disturbance to the nesting of any bird, and particularly those that are rare or at the edge of their geographical range. Records of such species, or of any which a recorder does not want to become publicly known, should be entered on separate cards and sent to the Regional Recorder or to the Coordinator for Scotland with a note asking for security. This problem has been closely studied by a committee including representatives of the RSPB and SOC, and a list of species to be covered by strict security has been agreed.

Please send in, as soon as possible, any Atlas records for 1968. You can use a spare card as a personal record. Any ornithologist doing professional fieldwork is particularly asked to take the small extra step of sending in breeding records for Atlas purposes. Those helping Operation Seafarer in 1969 are asked to report breeding evidence for all species on Atlas cards; they may go to places not approachable by landward birdwatchers.

Foulis Mains, Evanton, Ross-shire. C. G. HEADLAM, Scottish Coordinator.

Birds killed by oil in the Tay Estuary, March and April 1968

J. J. D. GREENWOOD and J. P. F. KEDDIE

The source of pollution

On Thursday 29th February 1968 a crack developed in the hull of the *Tank Duchess* as she lay in the Tay Estuary preparatory to discharging her cargo of 10,373 tons of topped Venezuelan crude oil at Dundee harbour. It was impossible for her to be moved into the harbour to discharge her oil until 24 hours later. As a result, at least 87 tons of oil were lost into the estuary. Consequently, at least 1300 birds were killed.

The oil remained in the estuary for some time, moving about the river with the tide. On the north side, the beaches at Broughty Ferry were polluted considerably, some of those at Monifieth and Carnoustie slightly. On the south side, beaches from two miles east of Newburgh to Tentsmuir Point were polluted in varying degree; particularly heavy deposits were made in the Balmerino, Newport and Tayport areas. Oil also escaped from the estuary to pollute fishermen's nets at Kinshaldy and affect the scoter population of St Andrews Bay. In general, it was rock and pebble beaches that were polluted, while sandy beaches escaped.

Representatives of local authorities in the area met on Monday 4th March and appointed a technical working party to advise on treatment of the pollution. In less than 24 hours the four Dundee University members of this working party produced a paper embodying their recommendations. These were that a surface dredger, which would take the oil from the water, should be used and such a dredger was available at 24 hours' notice; that physical methods of removing the oil (e.g. shovelling it off, absorbing it) should be used on beaches; and that detergents should only be used as a last resort, in view of their grave biological effects (see e.g. Smith 1968).

No local authority was empowered to expend money on cleaning the water lapping its beaches. The Dundee Harbour Trust, while responsible for navigation in the estuary, is not responsible for keeping it clean and was not prepared to finance the hire of a surface dredger. The River Tay Purification Board has no jurisdiction over tidal waters; in any case, it is empowered only to point out pollution and to prosecute polluters, not to clear up pollution. As a result, the cheapest method of cleaning the oil, removing it before it hit the

beaches, was not utilised. The oil remained in the estuary to continue fouling both beaches and birds. Some changes are clearly necessary to prevent a foolish repetition of this in future.

The authority most eager to clean its beaches was Dundee Corporation. Unfortunately, despite the most vigorous representations from the technical working party, this authority discontinued use of physical methods after the scantiest of trials. Some detergent spraying had been carried out on Dundee (Broughty Ferry) beaches previously, as slight oil pollution, possibly from the sewerage system, is a chronic problem in the Tay. The *Tank Duchess* oil was subject to similar, but more vigorous, treatment. During February, March and April, 4700 gallons of detergent were used to wash 10 acres of beaches. While this cleaned the beach, it released into the estuary a detergent/oil/water emulsion that was a further source of contamination for birds.

In the light of later developments on the Fife shore it was particularly unfortunate that Dundee Corporation should have acted in this way. In Fife, where a series of methods of clearing oil from beaches was tried, mainly by Newport Burgh Council, the use of a 'Traxcavator' to scrape the contaminated surface off the beach and of waterproofed limestone dust to remove the oil both proved remarkably effective. Not only was such treatment less of a hazard to birds and other organisms, it was considerably cheaper than the use of detergent.

The birds at risk

The Tay Estuary is famous for holding the largest winter concentration of Eiders in Great Britain. This, judging from Grierson's (1962) account, is probably between 10,000 and 20,000 birds. The population varies from time to time, however, and while up to 20,000 were estimated by one observer before Christmas, there was none on the day of the international wildfowl count. The average figure for last winter seems to have been from 7000 to 8000. From observations made, it can reasonably be concluded that the Eider population in the estuary about the time of the *Tank Duchess* pollution was approximately 4000 birds.

Other ducks are present in the estuary in winter in much smaller numbers—Mallard and Wigeon usually in hundreds, Shelduck, Scaup, Goldeneye and Red-breasted Merganser usually in tens. Various waders and gulls are numerous. Although conspicuous, Mute Swans and Cormorants are present only in fairly small numbers. The goose flocks which enliven the lower Tay basin in winter do not utilise the estuary east of Dundee to any great extent although, up to

this past season when numbers were very small, Headwell and Abertay Sands were regularly used as roosting places for flocks of up to 1750 birds.

Outside the estuary, between it and St Andrews, the major feature of bird life in winter is again the duck population. There are much smaller numbers of Eiders but the scoters number several thousand at times. On 17th February JJDG saw several hundred off St Andrews—Common and Velvet in equal numbers, with a sprinkling of Long-tailed Ducks. By the end of the month, however, most of the Velvet Scoters seem to have left the area. From the Tentsmuir shores small numbers of auks, divers, and other seabirds may be seen throughout the winter, though the Gannets, which feed in the mouth of the Tay in the autumn, are not so apparent in late winter and spring.

Bird rescue during the disaster

A survey of oiled birds in the area between Tayport and Kinshaldy has been carried out by JPFK since October 1966. He began watching the situation closely as soon as the leakage from the *Tank Duchess* was reported. On 1st March he advised Senior Inspector A. MacDougall, Scottish Society for the Prevention of Cruelty to Animals, Cupar, that a serious situation was likely to develop. Operations by the SSPCA began on 4th March on both sides of the river; by this time members of the public had also begun picking up exhausted birds. At this stage, most of the birds collected were humanely destroyed since it was felt, because of the poor success in rehabilitating birds oiled during the *Torrey Canyon* disaster, that to attempt rehabilitation was wasteful and cruel. However, Chief Inspector J. M. Taylor, MM, of the Aberdeen APCA, visited Dundee on 5th March and said that he believed there was a considerably better chance of success than with the *Torrey Canyon* birds. A veteran of the latter campaign, Inspector Taylor has a special interest in the rehabilitation of oiled birds and it is very fortunate that he was able to be in Dundee through the period 6th-22nd March to take charge of the rehabilitation. Inspector MacDougall and Senior Inspector J. Johnston, Kirriemuir, organised SSPCA rescue operations on the Fife and Angus shores respectively and these lasted until 16th March, after which the number of birds rescued became steadily fewer.

Methods of counting oiled birds

Sporadic counts of birds found dead were made by various people in the early days. During the weekend of 9th-10th March a special effort was made on the Fife side of the river by a number of members of the Dundee branch of the SOC

with help, on the Sunday, from the Royal Naval Reserve from HMS *Unicorn* and from the Dundee Unit of Civil Defence. The whole shore and adjoining dunes from Tentsmuir Point to the Eden mouth were covered. Live birds were removed and most of the dead birds buried to minimise the chance of double counting.

Over the weekend of 22nd-23rd March, members of the Dundee and St Andrews branches of the SOC operated on much of the shore line from Dundee to Carnoustie and much of that from Kinshaldy to St Andrews. During this period right wings were removed from all dead birds to prevent duplication in counting and for research. This procedure was continued when completing the search on the Fife shore from Balmerino to St Andrews over the next few days.

Finally, some ringed birds were reported to the British Trust for Ornithology by members of the public and the ringing office has kindly passed to us all ringing returns for the area during the period 1st March to 15th April.

Figures for birds found dead, destroyed, and taken into care have been kindly provided by Inspectors MacDougall and Johnston. We are most grateful that, despite the difficulty of their main task, they took the trouble to record these.

Some birds were rescued or destroyed by other people and we have added these to the totals. All the birds that died at the rehabilitation centre on and after 9th March were passed to JJDG for post-mortem examination. A comparison of the total birds said to have been taken into care with the total of those that we know had died by, or were still alive on, 15th April, provides a check on the former total. For all but three species, the former totals are the same as the latter or bigger by just the amount that are likely to have died before JJDG started receiving corpses. For three species, however, there were more known 'dead plus still alive' on 15th April than the SSPCA officers said had been taken into care, so that extra birds had to be added to their figures (see table 1). The adjustment made in this way has had the remarkable effect of making the grand total of birds taken into care agree to within two birds with a total tally kept by Chief Inspector Taylor. In view of the chaos involved in large-scale rescue operations of oiled birds, such agreement is far closer than one would have expected.

Though the persons reporting some of the birds were not birdwatchers, we ourselves saw all the less usual specimens and found that only two of the SSPCA identifications needed correction. We are grateful to Allan Allison for checking and identifying three problematical wings against museum specimens.

We have taken the end of the incident, for the purpose of counting casualties, as 15th April. Oiled birds were found after that date but their frequency differed little from that for periods of non-pollution during the months preceding the *Tank Duchess* incident.

The numbers of birds affected

Table 1 shows the total number of birds known to have been affected by oil from the *Tank Duchess*. Of the birds taken into care, only some Eiders and Mute Swans survived more than a few days. At the time of writing (late May), about 10% of the Eiders and 75% of the Mute Swans have been rehabilitated or are still alive in captivity. Leaving aside the swans, this means that one may take the figures as minimal estimates of the birds that have been killed in this incident.

It would be useful if one knew what proportion of the birds that actually died are accounted for in table 1. The Eiders, at least, were moving away from the area at the time of the oiling, to return to their breeding-grounds; oiled Eiders were observed in the Ythan Estuary (Aberdeenshire) by Dr H. Milne and M. Gorman, who watch that area daily, on 18th March and subsequently. If many dispersing birds died at sea or on shores outside the Arbroath-St Andrews region, then table 1 presents a marked underestimate of the total number of birds killed.

In view of lack of reports of large numbers of oiled birds elsewhere, it may seem unlikely that the true figure could be more than 2000. On the other hand, during the recent dinoflagellosis outbreak on the Farne Islands, Dr J. C. Coulson (pers. comm.) found that only one of eight of the Shags that died were found on the shore, though the rate was far higher for other species. If the discovery rate for Tay Eiders was as low as that for Farnes Shags, as many as 8,000-10,000 may have died. A figure as high as this is perhaps unlikely since the breeding population of the Ythan Estuary, whence ringing shows many of the Tay birds to have come, has not been noticeably reduced (Dr H. Milne, pers. comm.). A further point is that the true species composition of the kill may have been different from that indicated by table 1; auks, divers, and similar species may have died at sea much more frequently than inshore species such as Eiders.

Discussion

It is clear from a comparison of the data in table 1 with the less precise data we have on the birds exposed to risk during this disaster, that the birds most affected were the diving species. Waders and gulls, for instance, escaped almost totally. Observations made during the disaster on living

Table 1. Birds found oiled between Arbroath and Fife Ness, 1st March-15th April 1968

	Found dead	Alive - destroyed	Alive - kept	Total	Fife	Source of birds Angus	Extra
Great Northern Diver	5	—	—	5	5	—	—
White-billed Diver	—	—	1	1	1	—	—
Red-throated Diver	6	—	—	6	6	—	—
Great Crested Grebe	1	—	—	1	1	—	—
Slavonian Grebe	1	—	—	1	1	—	—
Cormorant	1	1	—	2	1	1	—
Mallard	—	—	1	1	1	—	—
Scaup	1	—	—	1	1	—	—
Long-tailed Duck	—	—	1	1	1	—	—
Velvet Scoter	2	—	—	2	2	—	—
Common Scoter	133	5	29	167	147	2	18
Eider	461	172	494	1127	938	189	—
Red-breasted Merganser	3	4	3	10	9	1	—
Shelduck	6	—	—	6	6	—	—
Mute Swan	—	—	22	22	2	3	17
Oystercatcher	1	1	—	2	2	—	—
Herring Gull	6	1	—	7	7	—	—
Little Gull	1	—	—	1	1	—	—
Razorbill	2	—	—	2	2	—	—
Little Auk	—	—	1	1	1	—	—
Guillemot	1	—	1	2	1	—	1
	631	184	553	1368	1136	196	36

Note White-billed Diver subject to acceptance by Rarities Committee

birds show that this is not due to diving birds being less resistant to the effects of oil than other species; very few of the latter were oiled at all. This has, of course, been found in previous oiling incidents. It is understandable in the light of Bourne's (1968) recent observation that the diving species tend to dive when they meet an oil slick, so that they may surface in it, whereas gulls merely fly away.

Great mortality of Eiders due to oiling has been recorded previously in North America (Burnett & Snyder 1954; Dennis 1959) but not in Britain. In this incident 7%-28% of the British Eider population may have perished (Atkinson-Willes (1963) puts the total population at 30,000 to 40,000). There might be serious consequences if such mortality became more frequent. Dr H. Milne tells us that 7% is approximately the mean annual mortality of adult Eiders, so an annual repetition of the Tay oiling would cause the mean mortality to be doubled at least. If chick mortality was sufficiently dependent on adult density, such extra mortality could be borne without any decrease in the population. This is probably not the case.

Much of the mortality of birds could have been avoided in the present incident if two actions had been taken. Firstly, if the *Tank Duchess* had discharged her oil to land earlier than 24 hours after the crack had been reported. Secondly, if the oil had been cleared from the water soon after it leaked instead of being allowed to float about for weeks. Since these two actions would also have considerably lessened the pollution of the beaches, it would be incredibly foolish if provisions were not made to ensure that they were taken in any similar incident in future.

Acknowledgments

We wish to express our deep gratitude to Malcolm Smith, Warden of Tentsmuir Point National Nature Reserve; as well as being deeply involved in the practical work during the *Tank Duchess* disaster he has kindly read this report in draft and made extensive and useful suggestions for its improvement.

We also wish to thank the many others who provided the information on which this report is based—the officials of the animal welfare societies, especially Inspectors J. Johnston, A. MacDougall and J. M. Taylor; many members of the SOC, especially Miss M. M. Spires, J. E. Forrest and D. B. Thompson; the Royal Naval Reserve of HMS *Unicorn* and the Dundee Unit of Civil Defence; and the ringing office of the British Trust for Ornithology.

Dr H. Milne has helped us through useful discussions and we are grateful to him for several points of information. Dr

W. R. P. Bourne kindly criticised the paper in draft and Dr J. C. Coulson generously gave information on the results of the mass Shag mortality on the Farne Islands.

During the course of this study JJDG was provided with facilities in the Zoology Department, University of Dundee, for which he is grateful to Dr F. L. Waterhouse.

Summary

An account is given of the methods used to count affected birds during the oil pollution of the Tay Estuary that occurred at the end of February 1968.

The total of birds found dead, destroyed, or taken into care was 1368, most of them being Eiders. The diving birds were affected to an extent out of proportion to their numbers.

The total mortality of the Eiders was probably about 2000—though it may have been up to four times as high. This represents approximately 7% of the British population and repetition of the incident could have serious effects on the size of that population.

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A survey of rookeries in Ayrshire in 1966

MALCOLM E. CASTLE

Introduction

A survey of the number and the size of rookeries in Ayrshire was made in 1956 (Walls 1956). In order to determine any changes in the population of the Rook and its distribution ten years later, a second and more detailed survey was made in 1966. This was organised by the committee of the Ayr branch of the SOC, and most of the fieldwork was done by members of the Ayr and Glasgow branches.

Methods

In March 1966, twenty-seven recorders agreed to count rookeries in Ayrshire, and each was supplied with a survey form and a section of the 1" Ordnance Survey map of the county. The form had a simple layout and provided spaces for the address of the rookery, the number of occupied nests,

the type of tree and the date. Recorders were asked to mark clearly on the map the site of each rookery. Recorders all covered areas that they knew, in the hope that this would increase the accuracy of the survey. It was requested that the counts of occupied nests should be made between 9th and 17th April 1966. The sections of map were stuck together again after their return from the recorders, and each rookery was checked with the details on the form and given a 4-figure grid reference. An independent check was made by the author, who visited rookeries in selected areas of the county where it was thought some might have been missed.

Results

The recorders were extremely cooperative, and 73% of the nests were counted in the period requested, 9th-17th April. A further 21% were counted between 18th and 30th April, and the remaining 6% at various dates up to 23rd May.

Table 1. Distribution of rookeries in Ayrshire in 1966 according to size

Number of occupied nests in rookery	Number of rookeries		Number of nests	
	In each group	As % of total	In each group	As % of total
1-100	146	71½	5118	28½
101-200	32	15½	4507	25½
201-300	13	6½	3167	17½
301-400	8	4	2745	15½
401-500	4	2	1727	9½
over 500	1	½	624	3½
	204	100	17888	100

The number of rookeries recorded in the county was 204, containing a total of 17,888 nests. This gives an average of 88 nests per rookery, but a more complete picture of the sizes of rookeries is given in table 1. It will be seen that rookeries of up to 100 nests were the most frequent and made up 71½% of the total number of rookeries in the county. There were 101 rookeries, 49½% of the total number, containing not more than 50 nests, although these accounted for only 14% of the total number of nests in the county. At the other end of the scale the 26 rookeries containing over 200 nests constituted only 13% of the total number of rookeries but contained 46% of the total number of nests.

The total area of Ayrshire is 1132 square miles, giving an average density of 16 nests per square mile, or six per square kilometre. The county has however a considerable area of hill and moorland where Rooks do not breed and rarely even feed. In the 1956 survey only four rookeries were found at altitudes above 600 ft (Walls 1956), and a similar situation

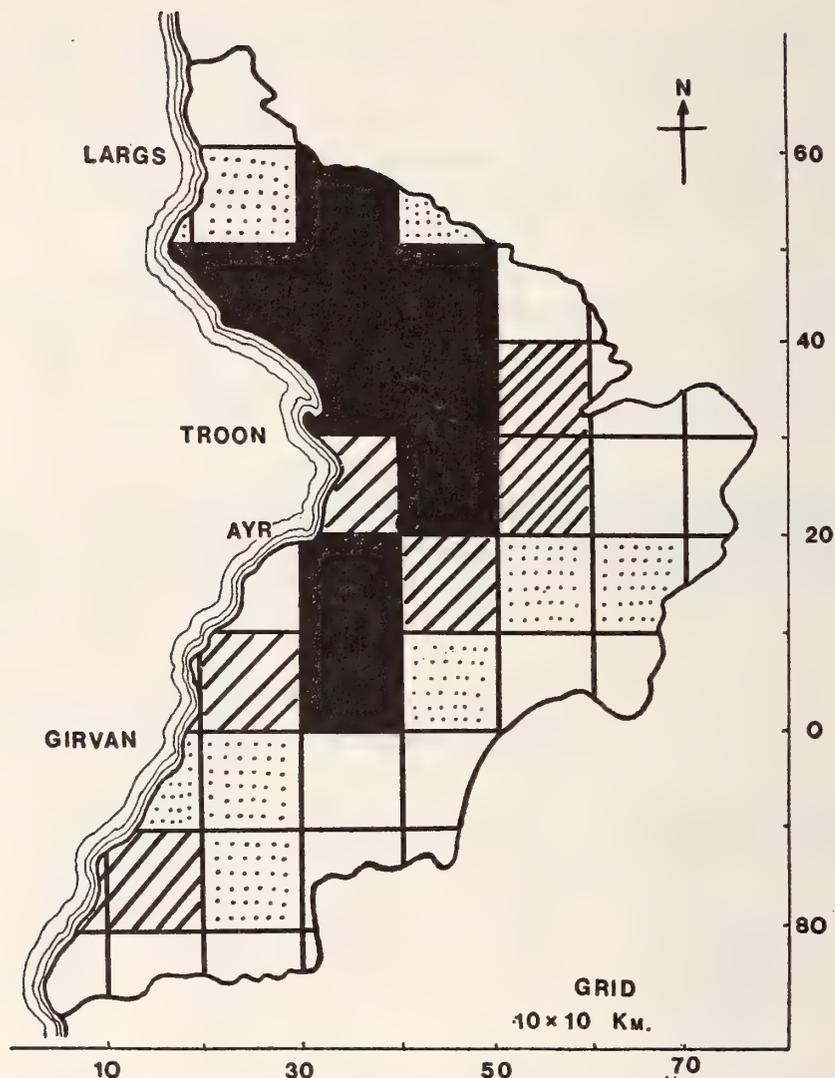


Fig. 1. Density of Rook nests in Ayrshire, 1966. Nests per square kilometre (square mile): uncoloured, up to 1 (0.4); dotted, up to 5 (1.9); hatched, up to 10 (3.8); solid colour, over 10 (3.8).

was found in the 1966 survey. Assuming that the area of arable crops and grassland in the county approximates to the area below the 600 ft contour, then the rookeries are found in an area of only 434 square miles, which gives a density of 41 nests per square mile or 16 nests per square kilometre. The density of nests throughout the county is indicated in fig. 1, which was produced by marking each rookery into its appropriate 10 x 10 km square. The highest general concentration of nests was in an extensive area mainly north of Ayr, with a progressive decrease in density towards the east and the south of the county in the hill and moorland areas. The highest local concentration of nests was in the 10 x 10 km square immediately south of Ayr, where 90 nests per square mile or 35 nests per square kilometre were recorded.

Scots pine was the most frequently used tree for nesting, and 51% of all nests were in this species. The next

Table 2. Number of nests in various species of trees in two areas of Ayrshire in 1966

Species of tree	Percentage of total number of nests	
	Area A	Area B
Scots pine	55	59
Sycamore	20	3
Beech	5	8
Oak	9	14
Horse chestnut	4	—
Elm	4	2
Ash	3	6
Others	—	8
	100	100
Total number of nests	1346	1358

most frequently used tree was beech, with 18% of the nests, followed by sycamore, oak, elm and ash in decreasing order of use. Other trees which were used for nesting included horse chestnut, plane, cherry, lime, birch, Sitka spruce, Norway spruce, Japanese larch, stone pine, alder and hawthorn. Two recorders in separate areas of Ayrshire made particularly detailed studies of the number of nests in the different species of trees and their results are given in table 2. Area A, with rookeries at an average altitude of 150 ft, included the district around Symington, Dundonald and Coodham, north of Ayr; and area B, with rookeries at an average of 300 ft, was south of Ayr in the Maybole, Crosshill, Straiton and Kirkmichael district. Over 1300 nests were counted in each of these areas and table 2 shows that Scots pine was undoubtedly the most frequently used species of tree. Area A consists mainly of high quality agricultural land with scattered shelter belts of planted trees, whereas area B is on the margin of the hill country with large plantations, and yet the marked use of Scots pine for nesting is clearly evident in both districts. At Hatton Castle, Aberdeenshire, in 1957, 62% of all nests were in Scots pine and 25% in beech (Watson 1967), which is similar to the results in the present survey. In many other areas the proportion of deciduous trees used is often much higher. In Edinburgh less than 1% of nests are in conifers (Macmillan 1957), and Wynne (1932) found 90% of nests in elm trees in the Isle of Wight.

The distribution of rookeries and nests according to altitude is shown in table 3. Up to 400 ft above sea level there were 170 rookeries, 83% of the total number in the county, and these contained 89% of the total number of nests. Above 400 ft the number of nests decreased rapidly and progressively with increasing altitude, and only one rookery, Kyle farm near Cumnock (ref. 6519), was found above 700 ft. This

Table 3. Altitude of rookeries in Ayrshire in 1966

Altitude (feet above sea level)	Number of rookeries		Number of nests	
	In each group	As % of total	In each group	As % of total
0-100	43	21	2797	15½
101-200	48	23½	5416	30
201-300	47	23	5237	29½
301-400	32	15½	2510	14
401-500	19	9½	1017	5½
501-600	6	3	443	2½
601-700	8	4	330	2
over 700	1	½	138	1
	<hr/> 204	<hr/> 100	<hr/> 17888	<hr/> 100

rookery was 850 ft above sea level and the number of nests in it had increased from 105 in 1956 to 138 in 1966 although the site is high, wild and exposed. There is usually a sharp drop in the density of Rooks on high ground (Coombs 1961) and the results in the present survey confirm this.

Discussion

Before discussing the results in this survey of rookeries it is worthwhile to comment on the accuracy of the results and the type and the magnitude of errors which could have arisen. The technique employed ensured that the entire county was surveyed, and with the local knowledge of the individual recorders and the relatively small areas covered by each, it is thought that few rookeries were missed. On average, each person counted eight rookeries, although a few of the most experienced helpers had a larger number to count. Cross-checking by members was helpful in confirming results, and the transects of the county made by the author during the period of the survey sorted out some small discrepancies. The dates of the survey, 9th-17th April, were decided many weeks before, but would appear to have been about the optimum. From counts of nests at five rookeries at various dates it is clear that the peak number of nests occurred in mid-to-late April. A similar observation was made by Dunnet and Patterson (1965) in the Ythan valley, and Alexander (1933) suggested that it was important to defer counts as late as possible in order to increase accuracy. The mean date of laying the first egg of the clutch for Rooks in south Scotland has been given as 20th March (Holyoak 1967), and thus with an 18-day incubation period it is likely that at the time of the survey most nests contained eggs or newly hatched young. The few leaves on the trees did not interfere with the counting of the nests in late April, and in retrospect there would seem to have been no valid reasons for having had different dates for the survey. It is suggested however

that the total count of nests could be about 4% too low because of the proportion of rookeries counted in May. In some rookeries it was not always easy to determine with absolute accuracy how many nests were occupied, and, particularly in some Scots pines, how many separate nests were in some of the large accumulations of sticks. This is not a unique problem when counting Rook nests (see *e.g.* Watson 1967), and a certain error must invariably arise. In a small test with two observers counting the same rookeries the difference between counts was only about 1%.

Table 4. Number of rookeries and nests in Ayrshire in 1956 and 1966

	1956	1966	Change
Number of rookeries*	126	204	+62%
Number of nests	25851	17888	-31%
Nests per square mile	23	16	

*Defined differently in two years (see text).

Changes in the number of rookeries and nests from 1956 to 1966 are summarised in table 4. The data for 1956 are taken from the results of Walls (1956). Although the number of rookeries apparently increased by 62%, the number of nests in the county decreased by 31%. Much of the apparent increase in the number of rookeries in the 10-year period is due to a lack of uniformity in the two surveys in distinguishing between a cluster of independent rookeries and a single large scattered one. In the 1956 survey many single rookeries contained two, three or four sections which in the 1966 survey were often classed as separate rookeries by the local recorders. A divided rookery was regarded as one unit by Coombs (1961) if the 'nuptial' pursuit flights of the birds went round both parts and involved members of both parts. No such clear distinction was made in the present survey, but after making adjustments for the differences in defining a rookery it is considered that a more realistic estimate of the increase in the number of rookeries is about 25% rather than 62%. The count of nests is, within the limits already discussed, more accurate than the count of rookeries, and it would seem that there has in fact been a decrease of 31% in the 10-year period. The decrease in numbers is probably slightly larger than this, because the 1956 survey was done by a single observer and it is possible that some rookeries were not counted.

The decline of 31% in the number of nests is similar to the 39% decrease recorded by Coombs (1961) in southwest Cornwall between 1943 and 1953. In the City of Edinburgh the number of Rook nests declined by 51% between 1957 and 1964 (Cowper 1964) and it was not thought

that this was a movement in population. One can only speculate as to the reasons for the large decline in Ayrshire. Twenty-six rookeries listed by Walls in 1956 which then contained 3616 nests were not mentioned by the recorders in 1966. Many old nesting sites have been either cleared or made unsuitable for nesting. In the south of the county, Gorsclays (ref. 0985), a rookery with 548 nests in 1956, no longer exists because of felling, but new rookeries in the area have more than maintained the total number of nests in the district. This however is an exception and in other areas the loss of old rookeries has meant a large decline in the number of nests. Near New Cumnock the felling of trees at Craighbank House rookery (ref. 6012), which had 329 nests in 1956, has reduced the total number of nests in the area from 399 in 1956 to 103 in 1966. Tree felling is taking place constantly and may have a local effect on the number of nests if alternative sites are not available. In most areas there would not appear to be any lack of suitable sites for nesting. Poisoning and shooting undoubtedly take their toll of birds but it was impossible to determine their exact effect. The increased use of toxic chemicals in agriculture cannot be discounted as a possible contributing factor in the decline of such an agricultural bird as the Rook, but evidence on this matter is lacking.

Table 5. Acreages of crops and grassland in Ayrshire in 1956 and 1966

	<u>Thousand acres</u>		
	1956	1966	Change
Cereals	35.6	28.6	—20%
Root crops	15.6	10.4	—33%
Grass	231.9	238.6	+3%

From the June Agricultural Statistics published by the Department of Agriculture and Fisheries, Scotland.

The pattern of land-use and cropping in the county has altered slightly between 1956 and 1966 (table 5) and this may have had some effect on the number of Rooks. The acreages of cereals and root crops have decreased by 20% and 33% respectively in the 10-year period, but the county is still predominantly grassland. Only about 14% of the agricultural area, excluding hill and rough land, was ploughed and cropped in 1966, compared with about 18% in 1956, and this reduction would hardly explain a 31% decrease in the Rook population. The increasing urbanisation of parts of the county would not seem to affect the Rook population if suitable nesting sites are available. The highest concentration of rook nests, 90 per square mile, occurred in the immediate environs of Ayr, where there is a large human population and much new building. Adequate safe nesting

sites are present, and food is available in the surrounding agricultural land and in the town gardens, which are visited regularly.

The density of Rook nests per square mile varies from 5 to 45 in different parts of the British Isles (Coombs 1961). More recently values of 57 and 99 nests per square mile were recorded for the Ythan valley (Dunnet & Patterson 1965) and for an area around Hatton in Aberdeenshire (Watson 1967) respectively. Thus Ayrshire, with an overall density of 16 nests per square mile, has a relatively low number of nests. Calculated on the area of crops and grassland the density is 41 nests per square mile and this is more comparable with that for other areas. Comparisons between counties are not a simple matter, as factors such as altitude (Wynne 1932) and geological formation (Alexander 1933) can exert considerable local effects on the Rook population.

Perhaps the most important result of the present survey has been to show the dramatic decline in the population of a species of bird which is relatively easy to count accurately. No obvious or satisfactory reason for the decline in numbers in the 10-year period can be offered, but it would seem well worthwhile to make a further census in five or ten years time.

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Summary

A total of 204 rookeries containing 17,888 nests was recorded in Ayrshire during a survey conducted in late April and early May 1966. Compared with the results of a survey done in spring 1956 there was a 31% decrease in the number of nests. No single explanation is offered to account for this decrease although tree felling, shooting and changes in land-use have all occurred in the 10-year period.

The average density of nests was 16 per square mile or 6 per square kilometre, but calculated on the area of grass and arable crops there were 41 nests per square mile or 16 per square kilometre.

Scots pine and beech were the most frequently used nesting trees, with 51% and 18% of all nests respectively in these species.

The number of rookeries and nests decreased rapidly and progressively as the altitude increased above 400 ft above sea level. Only 11% of the total number of nests in the county occurred over 400 ft.

The errors which are likely to be made in counting Rook nests are discussed but were thought to be small in the present survey.

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Birds of the Scar Rocks—the Wigtownshire gannetry

JOHN G. YOUNG

(Plates 13-14)

Introduction

The Scar Rocks lie in Luce Bay, Wigtownshire (54°41'N, 4°42'W), roughly halfway between Burrow Head and the Mull of Galloway, six miles from the nearest land. They are formed of a fine-grained, very hard, blue-grey schist, traversed by thin bands of white quartz, and have weathered to a shattered, angular, ledgy surface attractive to breeding seabirds. The rocks, which were leased from the Crown by J. H. Stainton Crosthwaite of Glasgow, have been notified by the Nature Conservancy as a Site of Special Scientific Interest.

The name 'Scar', widespread in southwest Scotland, is derived from the Gaelic 'sgeir' (old Norse 'sker'), a rock or cliff. Although Ordnance Survey maps have the spelling 'Scare', I have preferred the shorter form used by the people of Port William and Drummore, the nearest ports.

No birds nest on the Little Scars, a collection of some six rocks barely 25 ft high, swept by the sea. The Big Scar, more than half a mile distant, is the sole breeding rock; it is 60-70 ft high by about 300 ft long. Castle Rock is a semi-detached stack at its western end.

Except for seaweeds and at least two species of lichen, the rocks are devoid of vegetation. There are no breeding mammals, but since 1963 grey seals have been seen frequently in small numbers, sometimes hauled out.

In 1883 Robert Service of Dumfries found two Gannets' nests on Big Scar, one containing a broken egg. Thereafter it was not until 1939 that the late Rev. John Morell McWil-

Table 1. Pairs of breeding birds on Scar Rocks

	1943 (24th June)	1953 (23rd July)	1965 (25th July)	1968 (8th June)
Gannet	40-50	134	240-300	437
Cormorant	50	40	6	10
Shag	40	20-30	25	24
Great Black-backed Gull	1	2	1-2	1
Lesser Black-backed Gull	—	a few	—	—
Herring Gull	25	30	40	37
Kittiwake	150	100+	130	175
Razorbill	15	50	15	62
Guillemot	1505	1000+	750	1207
Black Guillemot	—	1	—	—

Table 2(a). Birds ringed on Scar Rocks in 1965 and 1968

	1965 (25th July)	1968 (8th June & 20th July)	Total
Gannet	100	213	313
Cormorant	4	5	9
Shag	—	20	20
Great Black-backed Gull	1	—	1
Herring Gull	13	20	33
Kittiwake	5	5	10
Razorbill	2	4	6
Guillemot	96	4	100
	<hr/> 221	<hr/> 271	<hr/> 492

(b) Selected recoveries reported up to 31st July 1968

	Ringed	Recovered
102.4508 Gannet (pull.)	25.7.65	One of 60 taken on fishing lines that day off Agadir, Morocco (30°30'N, 9°40'W) 6.11.65.
102.4510 Gannet (pull.)	25.7.65	Found dead at Asserac (Loire Atlantique), France (47°26'N, 2°23'W) 23.10.66.
102.4514 Gannet (pull.)	25.7.65	Caught on fish-hook at sea 10 miles off Viana do Castelo (Minho), Portugal (c. 41°40'N, 9°00'W) 23.10.65.
102.4546 Gannet (pull.)	25.7.65	Shot at sea off Oporto (Douro Littoral), Portugal (c. 41°10'N, 8°40'W) 4.10.65.
AT92.279 Guillemot (pull.)	27.7.65	Killed at Sallenelles near Caen (Calvados), France (49°16'N, 0°14'W) 1.2.67.

liam and Lord David Stuart discovered that Gannets were again breeding on this rock (*Brit. Birds* 33: 105). A subsequent paper by McWilliam (*Transactions of the Buteshire Natural History Society*, vol. 13, 1945, and reprinted as booklet) contains details of a number of later visits, including a note of counts made by A. B. Duncan on 24th June 1943.

After a landing on 25th July 1965 by a party of six members of the Dumfries Branch of the SOC, Mr McWilliam asked me to bring the ornithological record up to date. It is an indication of the difficulty of gaining access to the Big Scar that in spite of many attempts it was not until 8th June 1968 that I was able again to effect a landing, when a party of ten of us spent over four hours counting, ringing and photographing the birds.

The counts made in 1965 and 1968 are probably as accurate as any that are likely to be made on the Scar, although there will always be a considerable margin of error for Razorbill and Guillemot.

Table 1 shows the number of pairs of breeding birds recorded in different years; table 2 lists the numbers of birds ringed in 1965 and 1968 by the North Solway Ringing Group and is supported by some selected recoveries; table 3 traces the development of the gannetry. A systematic list of the birds of the Scar Rocks follows.

Table 3. Development of Scar Rocks gannetry (and sources of information)

1883—2 nests (J. H. Gurney <i>The Gannet</i> 1913, p. 112)
1939—2-6 pairs; 1 nest; 1 chick reared (J. M. McWilliam—in litt., pers. comm.)
1940—breeding not proved (as 1939)
1941—breeding not proved; believed about 10 pairs (as 1939)
1942—at least 20-25 nests, probably over 30 (as 1939)
1943—40-50 pairs (A. B. Duncan in McWilliam 1945—see Introduction)
1945—35-45 nests (J. Fisher in Bannerman 1959 <i>The Birds of The British Isles</i> 8: 24)
1946—at least 28 nests (as 1945)
1948—90 nests (as 1945)
1949—100 nests (as 1945)
1953—134 nests (Dr J. A. Gibson, J. H. Stainton Crosthwaite—pers. comm.)
1954—137 nests (Dr J. A. Gibson—pers. comm.)
1957—158 nests (as 1954)
1960—167 nests (as 1954)
1962—about 200 pairs (A. D. Watson—pers. comm.)
1964—about 300 pairs (R. W. J. Smith—pers. comm.)
1965—at least 240 pairs breeding; probable maximum, 300 nests (J. G. Young <i>et al.</i>)
1968—437 nests (as 1965)

Birds recorded from the Scar Rocks

Manx Shearwater. Regular in the vicinity, both singly and in parties; up to 100 in a day.

Fulmar. One bird sitting on a ledge in May 1941, but no evidence of breeding then or since. Seen in the area by most visitors.

Gannet. Breeding annually in increasing numbers (see table 3), with still ample room for further expansion; an increase to at least 650-700 pairs seems possible. The area at the very top of the rock where nests were concentrated in 1943 is no longer the centre of the colony; it is now occupied by younger breeders (Sir A. B. Duncan pers. comm.). On 20th July 1968 the entire colony appeared to be feeding on mackerel.

Cormorant. In 1939 there were at least 71 occupied nests and 12-15 empty—a probable maximum of 90 breeding pairs. There has been a steady decline to 50 in 1943; about 40 in 1953; 12 nests in 1957; and to 6 occupied nests in 1965, increasing to 10 nests in 1968. This decline may be associated with increasing Gannet numbers, as in recent years the breeding population of the Cormorant has been increasing in Solway.

Shag. Probable maximum of 16 nests in 1939; 40 in 1943; 20-30 in 1953; about 25 in 1965; 24 in 1968. Some of the differences between totals may be due to the differing dates of visits.

Eider. A pair close inshore on 2nd July 1954. No other record.

Peregrine. Bred about 1922. No other record.

Oystercatcher. One on 16th June 1957 is the only record.

Purple Sandpiper. Five on 25th July 1965; 6 on 20th July 1968.

Great Black-backed Gull. Single pairs bred in 1921, 1939 and 1943; two in 1953; one in 1957. Two pairs were present in 1965 (one breeding on the Big Scar, the other possibly on Castle Rock); one pair bred in 1968.

Lesser Black-backed Gull. A "few" pairs bred in 1953; recorded frequently in small numbers, but no other evidence of breeding.

Herring Gull. Has bred since at least 1870. Several nests in 1921; 25 in 1943; 30 in 1957; and a gradual increase to about 40 in recent years.

Common Gull. Recorded as breeding in 1869 (Gray and Anderson *The Birds of Ayrshire and Wigtownshire*, p. 53) but this was considered by McWilliam to be very doubtful. The species has bred freely on other Solway islands since as far back as 1900.

Kittiwake. Breeds—150 pairs in 1943; 130 in 1965; 175 in 1968.

Common/Arctic Tern. Recorded regularly in the vicinity.

Sandwich Tern. Only one record—of 4 flying over in July 1965.

Razorbill. Recorded as breeding in 1869; scarce in 1921; 15 pairs in 1943; 50 in 1953; at least 62 in 1968.

Guillemot (apparently the southern race *U. a. albionis*). Breeding abundantly in 1869; 1505 pairs in 1943; 1000+ in 1953; 750 in 1965; 1207 in 1968. The nesting of this species among the Gannets on the flat top has always been a feature of the Big Scar (see photographs by McWilliam deposited in the SOC library). A fear that, as the Gannets increased, the Guillemots would decline has not materialised. Nevertheless, since 1965 there has been a marked shift in their distribution from the flat top of the Scar to the narrow ledges on its south side.

Black Guillemot. Bred in 1953, when one was found incubating two eggs in a crevice on 23rd July; recorded in the immediate area in 1954, 1960 and 1962. Two nests were found on 27th June 1964 (*Scot. Birds* 3: 203). Four adults were on the sea close to the rock in July 1965 and nine were recorded in July 1968, but there has been no further evidence of breeding.

Puffin. Mentioned as breeding by Gray and Anderson (1869) and by Gray (*The Birds of the West of Scotland* 1871). Four were seen near the Scar in 1943 and several were standing on different parts of the Big Scar in 1953. Others were recorded offshore in 1954 and 1957, and out of eight seen in 1965 two showed an attachment to the Castle Rock and one was carrying food. Two adults were seen in June 1968 and a single adult in July. It is possible that a pair or two may still breed.

[**Rock Dove.** A flock of seven feral pigeons, three with the pale rump and black wing bars of the Rock Dove, were over the rock in 1965. These cannot be accepted as pure, because for some time the Solway population has been mixed with escapes of homing strains.]

Sedge Warbler. One on 25th July 1965.

Rock Pipit. Recorded in 1921, and on later occasions, such as four birds present on 24th June 1943; single birds on 16th June 1957, 25th July 1965 and 20th July 1968.

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Special mention should be made of William Brawls, boatman of Port William, whose skill and local knowledge has been invaluable, and of James F. Young, my companion on at least 37 mostly-abortive attempts to reach the Scars.

I owe a particular debt to "The Minister"—the late John Morell McWilliam (see obituary in *Scot. Birds* 5: 113)—for hospitality, much kindness and many stimulating chastisements, first at Tynron and latterly at Invergowrie.

Summary

The Scar Rocks are described, and a systematic list is given of the birds recorded, together with censuses of the breeding birds in 1943, 1953, 1965 and 1968, tables of birds ringed and recovered, and a history of the build-up of the gannetry from one or more nests in 1939 to 437 in 1968.

Short Notes

Cory's Shearwater in Outer Hebrides

About 1130 hrs BST on 24th August 1967 I was sitting $\frac{1}{4}$ mile south of the lighthouse at the Butt of Lewis looking northwest over a calm sea. There was a very light northerly breeze and the sun was behind me. Small parties of Manx Shearwaters were passing north about $\frac{1}{2}$ mile out, looking extremely black-and-white, flying very straight and low, and flapping almost continuously in the calm conditions, with only a few short glides. Nearer to me the sea was dotted with small petrels, easily discernible.

Presently a single shearwater approached from the south, within about $\frac{1}{4}$ mile of the land. At once I noted its larger size and slower wingbeat. As it made a big sweeping curve I could see its back. There was no sign of a capped appearance, no collar, and no white on the rump; the whole upperparts were a uniform dullish brown. I could not see the underside of the wings but the underparts were pale. The bird definitely did not have the sharply contrasting black-and-white appearance of the Manx Shearwaters. It gave one or two short glides but flapped nearly all the time. It appeared to have about the same wingspan as a Fulmar but its general appearance was thinner and the wing narrower. I identified it as a Cory's Shearwater. There is one previous record for the Outer Hebrides—from North Uist on 23rd August 1962 (*Scot. Birds* 2: 417).

It may be relevant to note that late the previous afternoon there had been large numbers of seabirds in the Minch—Manx Shearwaters, Guillemots, Gannets, Kittiwakes, and 6-8 Sooty Shearwaters in two hours. The sea was peppered in all directions with small petrels which, judging by their Black Tern size, bounding erratic flight, and the fact that not one investigated the ship's wake, I considered, rather to my surprise, to be all Leach's Petrels. There were also large numbers of the smaller Cetacea, and possibly therefore a lot of fish about.

R. V. A. MARSHALL.

Little Egret in Wigtownshire

On 25th April 1968 I was brought a Little Egret which Miss J. McGaw found dead under telegraph wires near Mochrum Loch two days earlier. Unfortunately the remains could not be preserved, but from them I was able to confirm the bird's identity.

It was basically heron-like, with a long, pointed black bill and long black legs, with the toes and the base of the tarsus yellow. The plumage was white with a crest of two long plumes passing back over the nape. The iris was yellowish, but was probably somewhat faded by the time I saw the bird. I measured its overall length as 25 inches, and its wingspan as 35 inches.

C. A. B. CAMPBELL.

(This species was not recorded in Scotland until 1954, when at least two different birds were seen in Perthshire, Shetland, Lanarkshire and Sutherland between 11th May and 22nd June (*Brit. Birds* 48: 127; *Scot. Nat.* 1955: 66). The only subsequent records are of single birds in the Outer Hebrides on 20th May 1955 (*Brit. Birds* 48: 411) and in Shetland and Orkney between 11th June and 3rd August 1961 (*Scot. Birds* 2: 29; *Fair Isle Bird Obs. Bull.* 4: 226.—ED.)

American Wigeon in Shetland

On 20th January 1968 I found a pair of American Wigeon with a drake and three duck Wigeon resting, preening and feeding on shallow floodwater on a sheep pasture at Norwick, Unst. The drake was immediately identified, but careful scrutiny of the females was required to separate the duck.

Magnus Sinclair accompanied me next day and we were successful in obtaining good views of both birds. They were seen again on 27th January and 3rd February. The following is based on full notes made during the first two sightings:

Drake. Broad white band over head from forehead to nape; dark blackish patch in front of eye, curving above eye to nape, extending below eye to ear coverts; nape, sides of neck, lores, chin and throat grey; upperparts, wing coverts warm rufous-brown; primaries and secondaries appeared black; axillaries white; large white wing-patches; breast and flanks mauvish-pink or vinous-pink; flanks appeared slightly barred; belly off-white; conspicuous white patch on rear flanks; undertail black.

Duck. As ♀ Wigeon but head and neck noticeably greyer and axillaries white.

F. J. WALKER.

(This is the fourth Shetland record and follows closely on the third (*Scot. Birds* 5: 23). It seems possible that both records could refer to the same birds.—ED.)

Red-footed Falcons in Sutherland and Orkney

About 8 p.m. on 22nd July 1967, approaching the Keoldale Ferry from Cape Wrath, my wife and I saw an unfamiliar raptor glide from a telegraph pole with several quickish



PLATE 12. Female Bluethroat near first British nest, Moray Basin, 13th June 1968, and view of habitat. The nest was under the end of the branch in the foreground (see page 221).

Photographs by M. J. Cotton





PLATES 13-14. Views of the Big Scar, Wigtonshire, from the sea, with Castle Rock at the western end, and the Little Scars from the Big Scar, and of John G. Young, holding a young Gannet for ringing, on a recent visit to the Scar Rocks (see page 204).

Photographs by J. F. Young (Little Scars) and B. S. Turner



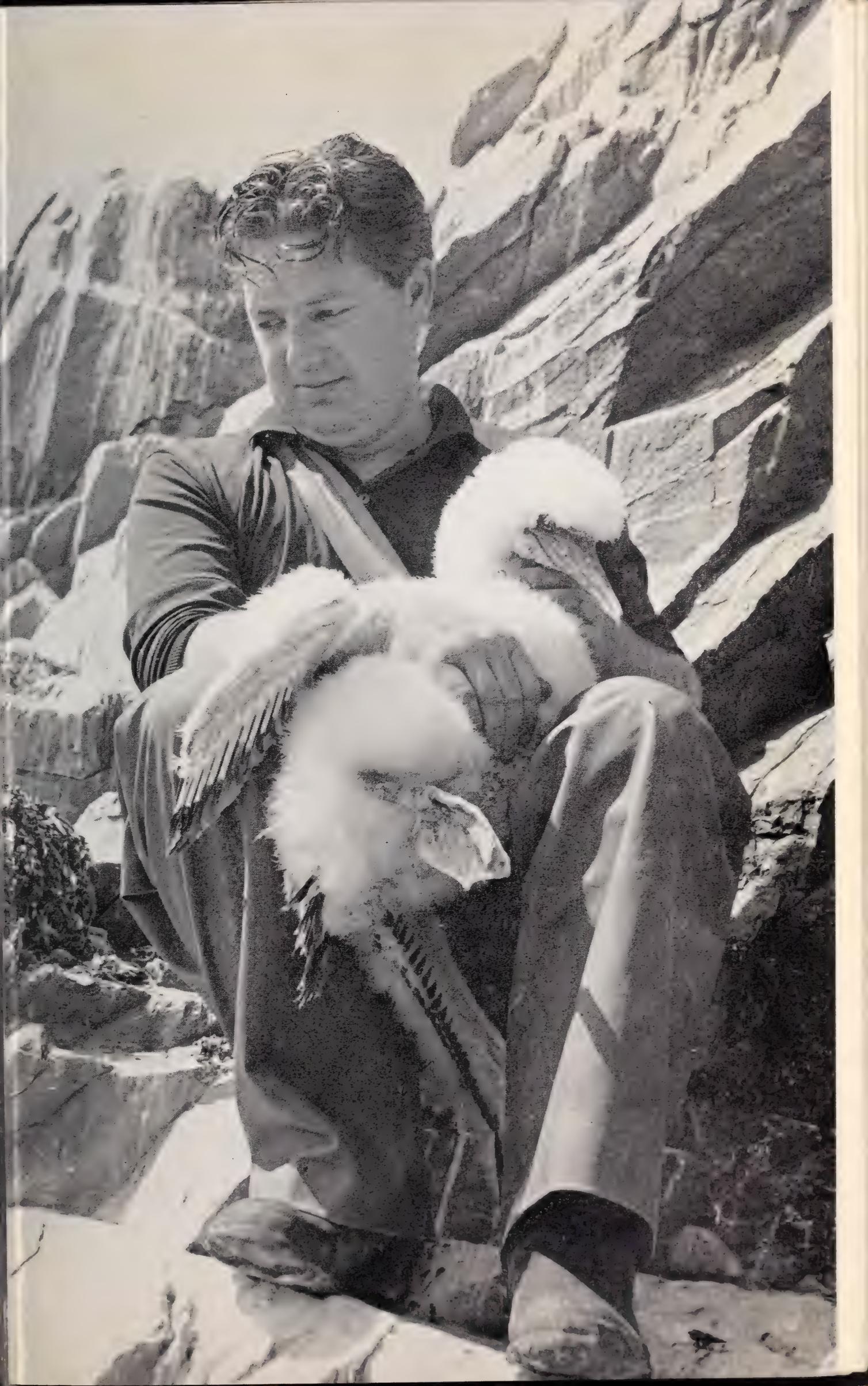




PLATE 15. Fieldfare with young in nest, Shetland, July 1968. The nest was under a slight overhang in the bank of a stream and was quite visible from some distance. Five young were fledged (see page 218).

Photograph by R. J. Tulloch

wing-beats and fly up onto another one. As we continued along the road the bird moved from pole to pole with few wing-beats and looking more clipped and emphatic than a Kestrel. We watched it for 10 minutes. Two or three times it landed in the heather as if hunting for insects, before gliding to the next pole. We got within 100 yards of it but as it was continually flying away it showed little more than a back view, except once when it perched sideways and momentarily when it faced us.

Finally it flew off down the slope towards the Kyle of Durness, disturbing a Buzzard. Earlier a male Kestrel mobbed it briefly and we saw that it was about the same size. It was considerably smaller and slimmer than the Buzzard.

In flight the back, wings and tail appeared dark grey-brown with lighter markings across the feathers of the back, though these did not register as barring. The head was an extremely light, rich buff. Some rufous showed on the flanks. When perched, its attitude always seemed rather hunched and fluffed out; its wings reached near the length of the tail and it did not have the long-tailed appearance of a Kestrel. We now noted the crown as richer buff and ear coverts as paler, creamy, with the eye area black, but did not notice a moustache. The bird had an almost owl-like appearance as it peered back over its shoulder. The underparts were creamy-buff with no discernible spotting or striping. The bill was pale and the feet orange-yellow rather than pale.

We had no idea what it was until we referred to the *Field Guide* and found the illustration of a female Red-footed Falcon fitted almost perfectly. We had not noticed the tail being barred. The front of the bird did not seem so rufous as shown, but the flanks were. The nape did not appear so richly coloured as the crown, and the back was not slate grey but grey-brown, as in the *Handbook* illustration of a juvenile.

We understand that this is the first record of a Red-footed Falcon for the North Coast and for Sutherland.

R. K. BARROW.

From 11th August 1967 a juvenile Red-footed Falcon frequented the Lyde area of Firth and Rendall on the Mainland of Orkney. It was last seen on 10th September by P. J. B. Slater.

The bird was about Kestrel size but of a rather slimmer appearance, with narrower wings. At times it hovered like a Kestrel when hunting and it was seen to capture caterpillars and insects by pouncing on them on the ground. The victims were held in one foot while being eaten, sometimes

in flight and sometimes on a post. Once it took a large black slug. It spent much of the time perched on fence posts in this mainly moorland area, and it roosted in an uninhabited house nearby.

Description. Conspicuously pale creamy head with some darker markings on crown, with nape and sides of head palest; upperparts brownish, shading to slate towards tail, with some rufous edging to feathers, especially on shoulders; tail dull slate, clearly barred with brown; folded wings reached end of tail; underparts creamy-buff streaked rufous-brown; feet and legs orange-yellow; iris dark brown; thin orange ring round eye, surrounded by dark or blackish patch, widest between bill and eye; bill bluish-grey with orange-yellow cere.

This is the second record for Orkney. A female was recorded in Stromness Parish on 8th May 1962 (*Scot. Birds* 2: 422).

E. BALFOUR.

Broad-billed Sandpipers in Stirlingshire and Morayshire

On 23rd July 1967 I found a Broad-billed Sandpiper feeding with Dunlin at one of the pools at Skinflats. It stayed there on the 24th and 25th and I watched it with binoculars and telescope at 10-15 yards range.

It was also seen by John Carson, who was able to get within two yards and found it very tame, but there were always other waders about when I saw it and this may have made it a bit more wary. When feeding, it usually kept away from the small flocks of Dunlin but would join them if they took flight. Often it stood motionless for a few minutes before stepping forward to pick something off the mud.

The most conspicuous features of the bird were the whitish lines on the back, the double white eyestripe, the down-curved tip of the bill, and the small size compared with the Dunlin.

Description. Slightly smaller than Dunlin, with noticeably shorter legs, and appearing shorter in neck and hunched-up when standing with them. Upperparts very dark, with two long whitish stripes down back; back extremely dark in flight, with wings slightly lighter; crown black; black line through eye, with two white stripes above (not so white as in *Field Guide*), converging into one just above eye; neck, breast and lower half of wing (at rest) a muddle of blotches and streaks, the colouring ending in a line at the breast; underparts very white; bill long and downcurved at tip, and noted as rather bulky by JC; legs dark.

IAN TAYLOR.

On 29th August 1967 I watched a Broad-billed Sandpiper on the east beach of the River Lossie at Lossiemouth. It was a very small solitary wader, not associating with Ringed Plovers, Redshanks and Dunlin which were also feeding in

the area, and as it was scarcely larger than a nearby Pied Wagtail I at first took it for a stint.

Closer inspection showed that it was rather like a Dunlin, but had a more heavily streaked breast, shorter legs and a distinctly different bill. The breadth of the upper mandible was a very noticeable feature when the bird faced me. I watched it feeding busily on the drier parts of a sandbank, and noted that it never probed into the sand with its bill or waded deeply. It proved very difficult to flush, and only flew unwillingly for very short distances before settling again.

I made full field notes, summarised as follows:

Double pale superciliary stripe, upper one faint and only obvious at forehead where apparently merged with lower; mantle and wings dark, marbled, contrasting with very white underparts and flanks; breast streaked, more intense at sides, with throat paler; rump greyish; lateral tail-coverts white; tail dark in centre, with paler brown outer feathers; no obvious wing-bar in flight; underwing soft grey; legs short, greenish-black; dark slate bill, slightly decurved at tip with broad upper mandible, held pointing downwards and looking large for size of bird; low, mechanical call *chirrit*.

K. A. WOOD.

(These are the third and fourth Scottish records of this northern wader, the previous ones both being from North Fife, where one was shot on 12th August 1912 (*Scot. Nat.* 1912: 212) and one was seen on 9th September 1946 (*Brit. Birds* 40: 154).—ED.)

Ivory Gull in Shetland

On 10th December 1967, after a week of severe west and north gales, I found a first-winter Ivory Gull on the break-water of Symbister harbour, Whalsay. I watched it for seven or eight minutes with 12 x 50 binoculars before it flew off towards the north and settled alongside 40 or 50 seals on some rocks three-quarters of a mile away.

I was able to compare its strong and very buoyant flight with that of Kittiwakes, Common Gulls and Herring Gulls in the area, and made the following notes:

Forehead and around eye, especially lores, mottled grey and white; rest of head, neck, back and underparts white; scapulars and wing coverts spotted black-brown, and primaries heavily marked with the same colour; tail white, with narrow black-brown subterminal band; bill greyish; legs and feet black, with stance peculiarly 'short-legged'.

J. H. SIMPSON.

(This species is rarely recorded in Scotland, the most recent occurrences being during the winter of 1961/62 (*Scot. Birds* 2: 34-35).—ED.)

Common Gulls using man-made nest sites

Several observers have noted Common Gulls nesting in trees (see *e.g. Scot. Birds* 4: 324, 392, 580). In Perthshire this species is also making use of highly artificial nest sites. The Loch Breaclaich dam, near Killin, is faced with open stonework at an angle of about 50°; in May 1966 some 12 pairs of Common Gulls were nesting in the interstices between the stones. In 1967 a nest was found in the rotted-out top of a post near Ardeonaig on Loch Tay, and in June 1968 at least one pair was making use of a similar site at the derelict Kenmore pier. The most artificial site found was in Glen Lochay, where in June 1968 two or more pairs of Common Gulls were nesting between the joining-plates of the hydro-electric pipeline. These joining-plates are about nine inches apart; they project about five or six inches above the surface of the pipe (which is itself about six feet in diameter) and they have small cross-pieces which serve to retain the nesting material. Any chick wandering out of such a nest is bound to make a speedy and quite irreversible journey to the ground.

VALERIE M. THOM.

Black-headed Gulls chasing feeding plovers

On 26th November 1967, near Loans, Ayrshire, R. D. Macgregor and I watched the behaviour of Black-headed Gulls towards Lapwings and Golden Plovers which were feeding in a grassy field.

Whenever one of the plovers found a worm, it was immediately chased and harried by one or more gulls. It was noticeable that the Lapwings offered very little resistance, and soon dropped their worms for the gulls to pick up, but the Golden Plovers seemed to have the edge over the gulls in speed, and on several occasions were successful in eluding the gulls altogether.

ROGER B. TOZER.

Fieldfares breeding in Shetland

On 12th July 1968 I had a letter from a crofter to tell me a pair of strange birds had nested on his land. I visited the area on the 14th and found that they were Fieldfares and had just hatched four chicks; there was an egg in the nest, and later five young fledged successfully. The nest was placed under a slight overhang in the bank of a little stream and was quite visible from up to 25 yards. It was a few yards

from the edge of a field of oats, and about 200 yards from the occupied croft house.

The parent birds were noisily aggressive, particularly to other birds passing, and were seen to dive at Common Gulls and Hooded Crows, and once at the crofter's son when he went to the nest. The typical aggression call was a harsh churring, quite different from the calls normally heard from birds on migration.

A return visit was made when the young were some ten days old, and the parents were seen to be bringing food about every 10-12 minutes. A hide was quickly erected between visits, about 35 ft away across the stream, and was completely ignored by the returning birds. A number of photographs were taken (plate 15) and the hide was then removed.

Earlier I had been told that a pair of Fieldfares had been seen chasing off gulls (and later followed by what was supposed to be a fledged young bird) about a mile away, and it is possible that what I saw was a second brood, though the date of hatching was much the same as in Orkney in 1967, when the only previous British nest was recorded (*Scot. Birds* 5: 31).

It seems likely that more than one pair of Fieldfares nested in Shetland in 1968. Two adults were found on another island on 28th July with three young birds, so weak on the wing that the observer thought he could have caught them. He got the impression that they still had some down—"a hairy look" was how he put it. Next day at the same place they were sitting on a fence, making no attempt to feed themselves, and the adults were carrying what looked like small moths to them. It is unlikely that these birds had come even from another Shetland island. A 'family party' on yet another island on 22nd July were possibly just early migrants.

It is of interest that there was an unprecedented arrival of Fieldfares in late July and early August, building up in fine high-pressure weather conditions to over 700 by mid August in Fetlar alone. These birds behaved differently from the normal, later, autumn flocks of migrating Fieldfares, which tend to keep more to the hills and moors, in that they came into the townships and crofts readily, feeding in gardens and around the houses. Many seemed to be young birds, and the churring call was often heard. Exceptionally early Fieldfares were recorded also at Fair Isle by R. H. Dennis—1 on 20th July, increasing to 5 on 23rd, 18 on 27th, 41 on 31st, 60 on 3rd August, 100 on 11th, and 300 on 14th-16th. By the end of August 85 had been caught and ringed, most still moulting and in very juvenile plumage.

R. J. TULLOCH.

American Robin on Foula, Shetland

On 11th November 1967, a day of severe gales, my wife and I caught sight of a Blackbird-sized bird with reddish underparts as the wind buffeted it past our window. We had very close views at three or four yards range before the bird flew off into a potato patch, where it fed between the drills. It was wary, but we were able to watch it from 50 yards for about half an hour with 20 x 50 binoculars and to identify it as an American Robin before it flew away. Owing to the gale we did not follow it, but on 16th November Mrs J. A. Gear and I saw it again.

This time the bird was feeding with a selection of other thrushes and was watched through 10 x 50 binoculars and a x30 telescope from 50-60 yards away. We noted that the American Robin was slimly built and slightly smaller than a cock Blackbird, but considerably larger than a Redwing, with the upright posture of a Fieldfare. The following is a description of the bird's plumage:

Top of head black or very dark; white ring around eye; creamy-white stripes from under chin towards cheeks; back and wings slate-grey; upperside of tail black or very dark; breast and underparts to legs red; yellowish from legs to vent; bill part light, part dark; legs dark.

J. R. GEAR.

(This is the third Scottish record of this American vagrant. All have been recent, but the others were both spring records: Orkney, 27th May 1961 (*Brit. Birds* 55: 577) and Kirkcudbright, 12th May 1966 (*Scot. Birds* 4: 376.—Ed.)

Bluethroat breeding in Scotland

Yet another first breeding record for Britain has occurred in Scotland. A nest of the Bluethroat *Cyanosylvia svecica* was found this year in the Moray Basin faunal area. It was located in an acid marsh in which *Carex* and *Phragmites* were dominant (plate 12). A mat of dead vegetation overlay most of the marsh, though in places there were areas of open water. When the nest was found, the current year's growth was still pushing up only sparingly through this mat in the area round the nest, though it was thicker elsewhere. Here and there in the fen were clumps of small *Salix* bushes, a number of these being near the nest.

Miss G. M. Bartlett, Dr M. J. Cotton, S. R. Pepper and I were walking along an embankment across this fen at 0950 hrs BST on 13th June when a red-tailed bird flew into a bush some 15 yards away. Not recognising it, we sat on an embankment to watch it. For most of the next half hour it was clearly in view, though it disappeared into some more

distant bushes for a few minutes. Mostly it sat in the bush in which we had first seen it, moving about a little and occasionally preening, but it spent some time feeding on the open mat of dead vegetation in front of us and for the better part of five minutes sat perched on top of a post only ten yards from us. We were thus able to make detailed descriptions of the bird and had no difficulty in identifying it as a female Bluethroat. Indeed, its most noticeable features, the distinctive facial pattern and reddish sides to the base of the tail, were alone sufficient for identification.

The bird's stance and movements could be described as "rather Robin-like, with a dash of Wheatear." It had a rather upright posture, with drooping wings and upcocked tail, the latter being flicked frequently as the bird hopped about feeding. It made two calls occasionally—a high-pitched *seep*, and a *chat-chat*. Both of these calls, especially the latter, were given more frequently when MJC crawled towards the bird in a successful attempt to photograph it (plate 12). At the same time it flew towards him and altogether gave an impression of agitation.

This behaviour suggested that there might be a nest close at hand, so we searched briefly under the nearby willow bushes. Finding nothing we abandoned this admittedly unlikely idea and left the bird in peace. On our return the same way an hour later, however, we looked for the bird again. As we stood around on the area it suddenly appeared "out of the ground" and SRP quickly spotted the nest from which it had flown. We photographed the nest, for confirmation of its identity, but hurried off immediately we had done this.

The nest was beneath a dead branch. One end of this rested on a fence, the other in the marsh. The nest was under the lower end, hidden by a mass of dead stems. It was itself made of such stems and lined with fine, dead grasses. The cup measured 5-6 cm across and was about as deep.

When found it contained three warm eggs. Next day at 1800 hrs BST one member of the party walked past the nest and looked into it; there were four eggs. The bird was not seen. The eggs were slightly smaller than those of the Robin, olive-blue with reddish-brown markings (especially towards the blunter end), their colouring somewhat reminiscent of eggs of the Blackbird.

On 17th and 20th June representatives of the RSPB visited the nest to confirm the report. On both occasions the female was incubating, four eggs on the first visit and six on the second. At the next visit, on 23rd June, she was not seen; there were still six eggs.

No further visits were made until 14th July, by which date it was judged there should have been half-grown young in the nest. However only fragments of the egg-shells were found. They bore tiny tooth marks, and there was a tunnel through the bottom of the nest, so it seems that it was probably a shrew *Sorex* or fieldmouse *Apodemus* that had eaten the eggs.

While excellent views were obtained by several observers of the female bird, her mate was not seen. Although this is not particularly surprising, since the male Bluethroat is said to be nocturnal during incubation (D. A. Bannerman 1953-63, *The Birds of the British Isles*, vol. 3), it is unfortunate, for it means that we do not know to which race the birds belonged. The nominate race, from Scandinavia, seems the most likely possibility, with *C. s. cyanecula*, of central and southern Europe, second.

Redwing and Wood Sandpiper have been breeding in Scotland for some time and breeding has been confirmed at new localities in 1968. Snowy Owl and Fieldfare have both bred for two years in succession. One wonders if there is a trend for north European species to spread into Scotland. If this speculation is correct, perhaps further records of breeding Bluethroats may be expected.

J. J. D. GREENWOOD.

Arctic Warblers in Shetland

On 3rd September 1967 at Halligarth, Unst, I observed a large leaf-warbler with a striking yellowish-white superciliary and a whitish wing-bar. I watched it at 20 feet in poor light with 10 x 50 binoculars as it fed in the tops of sycamore trees with two Chiffchaffs. It was very restless, and when alarmed it flicked its wings rapidly above its back, calling a harsh *zick* repeatedly.

Description. Forehead, crown, mantle and wing coverts greenish-brown with olive tinge; supercilium yellowish-white, from front of eye almost to nape; lores and eyestripe dark; ear coverts pale yellow, shading to darker olive; chin to belly whitish; flanks greyish-brown; under tail-coverts not clearly seen; primaries and rectrices dark brown; greater coverts edged white, giving distinct wing-bar; upper mandible dark brown, but lower not clearly seen; legs horn.

I concluded that it was an Arctic Warbler, a species that I have seen frequently on migration in Hong Kong and Singapore. In nearly every observation there I recorded the call as a hard or harsh *zick*. The *tswee-ep* note that some reference books describe as the call was rarely heard.

F. J. WALKER.

On 12th September 1967 I was told by Keith Hague, the

RSPB Snowy Owl warden, that there were several warblers in a garden at Leagarth, Fetlar, with certainly Yellow-browed and possibly Arctic among them. I crossed to Fetlar and went to the spot with KH, Alex Temple and Patricia Williams and watched the birds for about half an hour.

The Yellow-browed Warbler was readily identified by its prominent eyestripe and double wing-bar and we saw that it was clearly agitated by the presence of a slightly larger phylloscopine warbler which it scolded with a surprisingly loud *zeep* call and repeatedly chased. The other warbler was very restless, often flying into the open, sometimes to perch on a wall or make a flycatching sally after a flying insect. When perched it repeatedly flicked its wings, and occasionally (especially when near the Yellow-browed) gave a sharp, hard call—though when being chased it was difficult to decide which bird was making which call.

I agreed with Keith Hague that this second bird was an Arctic Warbler. It was a little larger than a Willow Warbler, and rather greyer, with a larger, heavier dark bill and a prominent pale eyestripe extending well back towards the nape, and with a dark mark through the eye, clearly demarcating the greyish cheek. There was little or no yellow on the underparts. The upperparts, wings and tail were uniform dark olive, and a single wing-bar was fairly conspicuous. The legs were pale brownish. I managed to stalk the bird closely enough to get a photograph which shows these characteristics fairly well.

R. J. TULLOCH.

(Though this species has been recorded at least a score of times at Fair Isle it is seldom noted elsewhere and these seem to be the first records for the rest of Shetland (see also *Scot. Birds* 4: 576).—ED.)

**Subalpine Warbler, Scarlet Grosbeak and Lesser Grey Shrike
on North Ronaldsay, Orkney**

On 14th September 1967, in an overgrown garden, I mist-netted a male Subalpine Warbler. The bird was shown to O. Scott, W. Scott, H. Swannie and I. Walker before being released. It remained in the area until 17th September. The following description and measurements were made of the bird in the hand:

Head and upperparts light grey, tinged brown on mantle and back; lores and ear coverts slightly darker; distinct white moustachial stripe; chin and throat deep pink; breast paler pink, merging into white belly; under tail-coverts pink tinged brown, most feathers with white tips; tail feathers dark grey with slight amount of brown, edged lighter grey and tipped white; median and lesser coverts light

grey with brown bases; primary coverts dark grey to grey-brown, edged lighter; secondaries same but edged darker brown; primaries similar to primary coverts; bill slate-blue, dark tipped; legs dark yellow; iris light brown; eye-ring terracotta. Wing 62 mm; tail (12 feathers) 53 mm; bill $10\frac{1}{2}$ mm; tarsus 18 mm; primaries—1st 1 mm shorter than primary coverts, 3rd and 4th longest, 2nd 3 mm shorter, 3rd to 5th emarginated.

On 18th September I netted a female or immature Scarlet Grosbeak on the island. It was readily identified in the hand by its streaked yellow-brown upperparts, yellow to greenish-brown rump and double whitish wing-bar. The following measurements were taken as part of a full description:

Wing 81 mm; tail 56 mm; bill 10 mm; tarsus 18 mm; primaries—1st minute, 2nd to 4th longest, 5th 3 mm shorter, 3rd to 5th emarginated.

As I was driving along on 27th September, I saw a shrike proceeding in front of me. It perched on a post, and I was able to watch it and take notes for about three minutes before it flew off.

The forehead, lores, ear coverts and front of the crown were black, and the chin, breast and belly white, tinged with pink, which was deeper on the flanks. These details, together with the grey upperparts and black-and-white wings and tail, confirmed that the bird was a Lesser Grey Shrike. Just prior to seeing it I had seen a Red-backed Shrike at the roadside.

KENNETH G. WALKER.

(The Subalpine Warbler is the first recorded in Orkney.—ED.)

Firecrest in Orkney

On 13th September 1967 we watched a Firecrest catching flies in the lighthouse garden on Auskerry. It was the size of a Goldcrest and had very energetic flight movements. As soon as we got the glasses on it we saw that it was not a Goldcrest. The face pattern was most noticeable—a white stripe above the eye and a dark one through it, with a very faint whitish mark below. No crest was visible. Otherwise the head and upperparts were greenish olive; wings slightly browner, with one short yellowish wing-bar and a second, longer one with a dark band below it; throat and upper breast yellow-brown, distinctly separated from grey-white belly; bill and legs darkish brown.

The call was rather lower pitched (sweeter and more melodious DMS) than a Goldcrest's, not so thin, cleaner and perhaps a little stronger.

This is the first record for Orkney.

E. BALFOUR, D. M. STARK.

Lesser Grey Shrike in Shetland

On 15th October 1967 at Saxa Vord, Unst, I watched a Lesser Grey Shrike from the window where I was sitting; it was perched on a lamp-post about 30 feet away, and was in view for five to ten minutes.

It was very similar to a Great Grey Shrike I had watched at Saxa Vord the previous day, but was smaller with a narrower tail. It had clear, broad black facial markings which continued right across the forehead, and noticeably pinkish underparts. The upperparts were blue-grey, and the tail showed distinct white outer feathers. A conspicuous white bar showed on the black wings.

E. THOMSON.

(Recent records of this species in Orkney and Shetland have been surprisingly frequent, but the occurrence of Great and Lesser Grey Shrikes on successive days is a curious coincidence, following a similar instance, also in Shetland, two years earlier (*Scot. Birds* 4: 378).—ED.)

Black-headed and Pine Buntings in Orkney

A male Black-headed Bunting was seen by T. B. Miller about 25th June 1967 near the farm of Whitehow, Papa Westray. It remained there for some three weeks, occasionally feeding with the local sparrows. Mr Miller's description of the bird includes the large size, and the characteristic black head and yellow underparts.

E. BALFOUR.

On 4th August 1967 I identified a Black-headed Bunting near the coastguard lookout on North Ronaldsay. The bird was seen again on 6th and 7th, and full field-notes were compiled from my observations on all three days. The black head showed lighter tips to the feathers, especially on the back of the head. A male Red-headed Bunting was present at the same time.

From 7th to 11th August a male Pine Bunting was seen in some sycamores on the island. It was the most inactive bird I have ever watched, and I was able to compile a full field description from notes made on 7th and the following days.

Crown grey-white; forehead and lower sides of crown black, forming distinct stripe that continued to nape; from in front of eyes to lores and nape chestnut or russet, some feathers tipped white to give a mottled appearance; below eye to centre of ear coverts white; ear coverts outlined in black with some white mixed, giving a mottled appear-

ance; chin and throat russet; lower throat and upper edge of breast off-white, forming distinct band across breast and throat; rest of breast and flanks russet, flecked off-white; belly and under tail-coverts white; back of neck and mantle very light brown, latter streaked with black, and some russet marks on lower back; scapulars similar but with slightly more russet; lesser coverts light brown; greater coverts same but with light russet tips; inner secondaries dark brown edged off-white, outer ones light brown; primaries dark brown, edged off-white, but first four or five distinctly lighter; rump russet; upper tail-coverts russet with white tips; tail feathers dark brown, outer edge of outer pair white; bill brown; legs light brown.

K. G. WALKER.

(These three records have been accepted by the Rarities Committee, subject to the reservation that they may have been escapes—a possibility strengthened by the occurrence of three species of rare buntings, all potential cagebirds, in one week.—ED.)

Little Bunting on Out Skerries, Shetland

On 20th September 1967 I was on Out Skerries when there was a large number of migrants on the islands. One of these was flushed from a potato patch, calling *tsic* before disappearing into another patch. I failed to get a good look at this bird that day, and on the following day when I found it again I could not be certain that it was a Little Bunting as I suspected. My provisional identification was confirmed when I caught it in a mistnet and was able to examine and measure it in the hand:

Upperparts russet-brown streaked black; head showed characteristic pattern with prominent eyestripe but cheeks not as rufous as in most illustrations; wings brown, edged paler; inner secondaries broadly edged russet; upper secondary coverts with broad pale edgings; tail brown, outer feathers white; underparts pale with dark streaks on flanks and upper breast; orbital ring creamy; legs and bill horn-colour, bill more pointed than usually shown (see *e.g.* *Popular Handbook*). Wing 69 mm; tail 55 mm; bill 12 mm, about 2 mm longer than quoted in *Handbook*; tarsus 18 mm; 1st primary minute, 2nd, 3rd and 4th emarginated and equal, 2nd 3 mm shorter, 5th 5 mm and 6th 10 mm shorter.

R. J. TULLOCH.

Recent News

ANDREW T. MACMILLAN

We cannot help thinking that this section is still a little thin. Only one local recorder in three sent in notes this quarter, the others presumably feeling they had nothing suitable to report. Certainly we do not intend to go beyond about two pages, and we need only a few items each time, but it

may well require reports from several sources to show what is interesting. To provide even two pages for those who enjoy this section we have had to include some records we would have preferred to leave for publication solely in the Scottish Bird Report. We are anxious to avoid routine notes on arrival dates, semi-scarce migrants and the like, so as to keep the effort of reporting and editing to a minimum, and we would also rather retain casual rarities of no special interest for fuller presentation as Short Notes. This leaves a rather restricted field, but what we seek are news items about birds—irruptions, exceptional falls, unusual concentrations, success or failure of famous individuals or studied populations, the impact of man (nature reserves, pesticides, pollution, alteration of habitat), dramatic range or population changes, unusual excursions. This is a good place for the sort of record that will not fit neatly into the species list of the Scottish Bird Report. Suggestions are welcome, but not for anything on the lines of the former mass of Current Notes.

Ospreys and Snowy Owls. A record total of 37,500 people visited the RSPB's Ospreys at Loch Garten this summer. Two young were reared there and three at the new eyrie first used in 1967, but the eggs failed to hatch at the second Speyside eyrie yet again. There is also evidence that pairs are establishing themselves and may be breeding elsewhere in Scotland.

The Snowy Owls again nested on Fetlar, almost in the same spot as last year, and three young were reared. Well over 500 people found their way to even this remote spot to see the owls under the watchful eye of the RSPB. Towards the end of the summer the male bird was found injured, but fortunately it responded to careful treatment from the wardens and was able to rejoin its family.

Sparrowhawks, At times we have wondered whether reports of this species point to recovery from low numbers or merely to the greater interest in it. No fewer than 46 young were ringed by one Dumfriesshire worker this summer, but it is not thought that this indicates any sharp change in status in a county where the bird has never been scarce.

Terns. The success of a ternery is often a matter of all or nothing. At Tentsmuir disaster struck the main colony in early July in the form of gales, high tides and blown sand, so that nearly 500 pairs had not a single chick on the 13th; some laid again but eventually deserted, evidently because it was too late in the year. The Inchmickery colony in the Forth also had a poor season, for similar reasons, but in interesting contrast the Sands of Forvie ternery was possibly the most successful of all the east coast colonies in 1968. The

Sandwich Terns were in early (from 3rd April) and the first eggs were exceptionally early (on 30th April). Over 1200 pairs reared about 1.3 young each and then dispersed much more rapidly than usual, all but a few being gone by the end of July.

Ducks and geese. Large numbers of **Mallard** and **Teal** were a feature of early September in Dumfriesshire, indicating a good breeding season. It also seems to have been the best breeding season for several years for **Goosanders** in the Glenskens district of Kirkcudbrightshire, 61 on Loch Ken on 15th September being the highest post-breeding assembly since 1961.

The moult migration of **Canada Geese** to the Beaully Firth is well known, but mention may be made of 10-12 flightless birds at the other end of the country, on 19th June on the most southerly of Murray's Isles in the Fleet estuary.

At Loch Leven the first **Pink-footed Geese** of the autumn were 4 on 15th September, and there were 39 on 21st and over 200 on 28th; the main arrival was on 29th, when some 5000 came in, and about 9000 were present on 1st October. There were 160 at Annan as early as 16th September, and Fair Isle had record counts of over 75 on 21st and over 120 on 29th, compared with the previous best of 33. The first 75 **Barnacle Geese** were at Caerlaverock on 18th September, and numbers rose to 240 on 21st and 1800 on 23rd.

Thrushes. There was a most exceptional early arrival of **Fieldfares** in Shetland and at Fair Isle, where the first was on 20th July and numbers rose to 41 by the end of the month and to 300 by the middle of August, most being in moult from the juvenile plumage. Compared with these, reports from the Isle of May on 24th August and Fife Ness on 29th are rather overshadowed. Fair Isle also had unprecedented falls of 2000 **Song Thrushes** and 165 **Ring Ouzels** on 26th September.

Waders. Daily watches on a new Solway sandbank at Glencaple revealed a large movement of waders on 23rd-24th August—**Lapwing** increased to 2000 (and 11,000 between Carsethorn and Annan), 40-50 **Ringed Plover**, 4 **Grey Plover** in almost complete summer plumage, the first 300 **Golden Plover** on the shore, **Curlew** increased to 700, **Black-tailed Godwit** up from 25 on 17th to 50 on 24th (and 142 on 26th, with also 120 **Bar-tailed Godwit**), the first 300-400 presumed **Iceland Redshank** arrived overnight looking very pale in body moult, 2 **Spotted Redshank** (and 8 at Stanhope), 10 **Greenshank** (and 20 in a row at Caerlaverock), the first 200 **Knot** (50 still red) on 24th, **Ruff** up from 2 on 24th to 10 on 26th, and also 2 **Wood Sandpipers** across the Nith on 25th.

Miscellaneous migrants. More **Sooty Shearwaters** than usual were reported between Sumburgh and Fair Isle—over 20 on 23rd August, 10 on 13th September and over 25 on 29th. Good numbers were noted also in east Fife in mid September, with a maximum count of 15 per hour at Fife Ness on 14th.

A substantial movement of **Swifts** was recorded at Loch Leven, Kinross, on 13th-16th July, with minimum daily totals of 700, 1000, 600 and 400 respectively. Many young birds would still be unfledged at these dates. A strong invasion of northern **Great Spotted Woodpeckers** was recorded at Fair Isle, with 10 on 7th September, 9 on 8th, 1 on 9th, 5 on 10th, and a peak of 11 on 13th, with smaller numbers to the end of the month. We have had no other reports of this movement, but one was on the Isle of May on 27th August.

The first note of **Waxwings** is of a flock of 20 on a rowan tree near Braemore Lodge, Wester Ross, on 27th September. Twenty **Crossbills** were at Loch Mannoeh, Kirkcudbrightshire, on 17th July, but it is not clear whether they are part of a new invasion or a residue from an earlier one.

Reviews

The Wreck of the Torrey Canyon. By Crispin Gill, Frank Booker and Tony Soper. Newton Abbot, David & Charles, 1967. Pp. 128; 16 plates (31 photographs) and 6 maps. 21½ x 13½ cm. 21/-.

Conservation and the Torrey Canyon. By I. D. Mercer and others. *The Journal of the Devon Trust for Nature Conservation*, Supplement, July 1967. Pp. 72. 21½ x 14 cm. Paperback, 5/-.

A world seeking to make economies will tend to bring together ever larger amounts of an increasing range of substances, though they may be potentially dangerous, for purposes of processing and storage and will carry them in greater bulk too. Disasters are most likely to occur when these large quantities are being moved. The *Torrey Canyon* made history just as much as an ammunition ship in harbour, during the last World War, which exploded and wiped out half a town. We have learnt how to cope with explosives (in some instances by limiting the quantities that are brought together); can we not also expect to deal safely with all these other potentially harmful substances if we give our minds to solving the problem which each new menace presents?

The first step in preparing to meet a future danger is to know what happened on a past occasion. We should be very grateful to joint authors Crispin Gill, Frank Booker and Tony Soper who, in *The Wreck of the Torrey Canyon*, have produced a blow-by-blow account of the wreck and immediate aftermath which is both clear and exciting and therefore extremely readable. Chapters have been divided among the individual authors—The Wreck, The Break-up (CG); The Black Tide, The Battle on the Beaches, The Oil Comes to Brittany (FB); Effects on Wildlife, Seabird Rescue, Poison in the Sea (TS); Legal Complications (CG); The Treatment of Oiled Birds (TS)—without losing continuity, or conflict in style. The account brings out the unpreparedness of or-

ganisations at all levels within the country to deal with a menace of this type and scale—experience was limited to the clearing up with detergents of minor oil spills at the Milford Haven oilport—while the urge for quick action forced the taking of decisions on scanty information.

The use of detergents followed inevitably from their use at Milford Haven, though even there damage to sea life had been reported. The reported feeling, widespread among naturalists at the time, that the use of detergents "should be avoided where possible on nature reserves and areas of high biological value" would be stated much more strongly now. Tony Soper describes the catastrophic effect of detergents on the life of the shore and of the top metre of the open sea, wherever they were applied, on the English side of the Channel; while Frank Booker reports the situation on the Brittany coast, where the French did not use detergents, in deference to the shellfish industry. Instead, volcanic ash and sawdust were scattered on the sea-borne oil, and the oil-soaked material and free oil were removed mechanically when they reached the beaches. The opposing methods will afford opportunity for comparison of their after-effects.

Tony Soper deals with the rescue, treatment and rehabilitation of oiled seabirds with sympathy, great knowledge and more than a touch of realism. There is a world of difference between the treatment of a regular flow of a few birds at a time by the Mousehole Bird Hospital of the RSPCA and the attempted care of many thousands of birds over a short period when many inexperienced helpers have to be brought in and far less suitable, extra, makeshift accommodation and equipment has to be used. Anyone who has a wish to care for oiled birds personally should read the appendix, in which Tony Soper does not make light of the difficulties. Everyone concerned worked magnificently but the results were disappointing. 8000 birds were collected for treatment (2000 of these were recorded as "dead") of which 479, or 6% of the original 8000, were cleaned, rehabilitated and returned to the wild, there to suffer further heavy losses, as we now know, because some treated birds failed to cope. Percentage success could obviously be raised—and much money and effort saved—by eliminating the more grossly affected birds, as Tony Soper suggested. The book does deal with the question of whether the effort to cleanse and rehabilitate should be made at all. A possible alternative is to limit the numbers treated to those that can be treated at permanent cleansing stations. The Seabird Appeal, a fund set up shortly after the disaster to pay the cost of seabird rescue, also aimed at the support of research into the effects of pollution on seabird and marine life. Part of these funds has been allocated recently for a seabird survey. Clearly there is a choice between the expenditure of relatively large funds on treating individual birds and on seeking information that will benefit birds and wildlife generally. Many conservationists would favour the latter purpose but the choice will continue to be made by the persons who have the money to give.

Shore life is not expected to recover fully for 8-10 years and this period should be one of intensive and yet far-ranging study. The three joint authors have recorded the incident so that we have a datum for future reference. They have also included in their book the names of the many organisations engaged in dealing with incidents at the time, to which we should look for reports of the work they will be doing on the long process of restoration of both environment and wildlife. The Nature Conservancy and the Marine Biological Association, particularly through its station at Plymouth, can be expected to play leading parts. The Government Scientific Advisory Committee under Sir Solly Zuckerman has already produced a report in which lines for future research are suggested, and the various bird organisations have also reported.

The book is excellently produced. Photographs, selected from the large number available to the press at the time, are of a high standard and cover a wide range of subjects. It is a high quality article remarkable for the conciseness of its presentation; it will be wanted by anyone who intends to keep up with the continuing story of the *Torrey Canyon*.

The naturalists' trusts of Cornwall and Devon (particularly of Cornwall, which was the more seriously affected) and local natural history societies were naturally involved in the *Torrey Canyon* incident from the start and they will remain involved throughout the recovery period as their members will probably provide many of the on-the-spot observers needed. The wide range of people and interests encompassed by the trusts is indicated by the variety of articles in the special supplement *Conservation and the Torrey Canyon* to the *Journal of the Devon Trust* for July 1967. Eleven separate articles, between which there is some overlap, deal with oil and detergent pollution, their effect on marine life, and some special aspects of the *Torrey Canyon* incident. Officers of the Nature Conservancy and the Plymouth Marine Biological Laboratory, university and educational staff and trust members, are among the authors. Two Nature Conservancy officers report on Brittany. Two representatives of a Sea Fisheries Joint Committee make observations of damage to marine life caused by the *Torrey Canyon* oil and particularly the detergents used to disperse it. Dr Nelson-Smith of University College, Swansea, in "Oil, Emulsifiers and Marine Life" reports experience of the use of detergents at Milford Haven. I. D. Mercer of the Slapton Ley Field Centre supplies an introduction and asks some sharp questions. The longest article, by Clyde Maxwell and C. M. Ann Baker, discusses the past, present, politics and prospects of oil and detergent pollution in a far-ranging survey which contains a great deal of information, and also a lot of technical terms which will unfortunately discourage many potential readers. In the field of politics the present leadership of science is criticised. The Devon Trust for Nature Conservation is to be congratulated on a supplement which adds considerably to knowledge of the *Torrey Canyon* incident and of pollution in the marine environment. The articles will interest all those who want to know more of the *Torrey Canyon* story and are good background reading to *The Wreck of the Torrey Canyon*.

B. GILCHRIST.

Peril in Perspective. An Account of the Medway Estuary Oil Pollution of September 1966. By Jeffery G. Harrison and W. F. A. Buck. Special Supplement to the Kent Bird Report No. 16 (1967). The Kent Ornithological Society [1968]. Pp. [4] + 24. Map and 4 plates (7 photographs). Paperback, 5/-.

When this incident occurred, the breeding birds had mostly left the area and the wintering ones had not arrived. Even so, 2778 birds were killed, mainly gulls and waders. Commendable follow-up studies showed that there were few apparent effects on the breeding populations and that the wintering populations were back to normal by 1967-68. What effects there were may have been due to widespread destruction of other elements of the ecosystem. This resulted from the saltings being cleaned with detergents, despite these being applied with care. No marine ecologist was present to study this destruction, but it appeared that recovery from it was largely complete within six months. The authors conclude: "Almost certainly it would have been wiser to have left the oil to break down naturally...but this would only have been at the cost of more bird casualties."

It should be noted that this disaster was unusual in that most of the

birds were affected by walking on stranded oil; usually birds are affected by swimming into floating oil. Thus it would usually be better to leave the oil stranded rather than to wash it into the water, where it may come out of emulsion and contaminate more birds.

All birdwatchers should read this report; those living by the coast must read it. They will then perhaps be fired to carry out similar studies in their own areas, should the occasion arise. The more knowledge we have of the effects of oil-pollution, the better. Of course, this knowledge may not be used. Many experiences, including the one reported here, were available before the *Torrey Canyon* incident to show that indiscriminate use of detergents is the height of folly. Nevertheless, in the *Torrey Canyon* incident they were used, if not indiscriminately, then with the minimum of discrimination. Since then we have learned that detergents are not only dangerous but they are a somewhat inefficient treatment for stranded oil. In many situations other methods are at least as good and are cheaper and less dangerous. Nevertheless, a recent report circulated by the government to Local Authorities gives the impression that detergents provide the only practicable treatment. Such a delay in knowledge being put to practical use is rather too much in such an important matter.

J. J. D. GREENWOOD.

Birds of Surinam. By François Haverschmidt. Illustrated by Paul Barruel. Edinburgh and London, Oliver & Boyd, 1968. Pp. xxxii, 445; 40 colour plates (410 bird figures), 30 black-and-white plates (47 photographs), 155 line drawings of birds, fold-out map. 27 x 19 cm. £12, 12/-.

For the past two decades the firm of Oliver & Boyd has earned a reputation for the publication of superbly produced bird books. This sumptuous new volume, which is attractively laid out and profusely illustrated, maintains the high-standard format, style and quality of previous volumes. Quite apart from its being an indispensable textbook to resident and visiting ornithologists in Central and tropical South America, it is, notwithstanding the high price, a work the collector of fine bird books will cherish.

A volume on the birds of a country in the Neotropical region is particularly welcome as books dealing with the rich, abundant bird life of that region are few. An introductory chapter gives short notes on topography, climate, ornithological research, breeding birds, migration and conservation. This is supplemented by an excellent series of photographs depicting typical habitats of the Surinam countryside and a selection of the nests of several indigenous species. It is evident from the main text, which lists over 600 species, that little is known regarding the distribution and habits of many of them. In fact the author states that at least another 100 species can be expected in Surinam, and one of the aims of his book is to arouse interest in the marvellous bird life of the country among the local population in the hope that some of them will develop into acute field observers. A noteworthy feature is that the author, who is Chief Justice of Surinam, has collected all his vast information during his holidays and in his spare time from that elevated office.

Not least among the delights of the book are Paul Barruel's beautifully executed coloured figures and line drawings which will undoubtedly enhance the artist's already high reputation as one of the foremost text-book illustrators of our time.

D. MACDONALD.

The Scottish Ornithologists' Club

Balance Sheet as at 30th June 1968

	As at 30/6/68	As at 30/6/67	
Accumulated surplus as at 30th June 1967	£2758	9 2	£2435
Deduct: Excess of Expenditure over Income for year	361	17 6	Cr.323
	<u>£2396</u>	<u>11 8</u>	<u>£2758</u>
Add: Share of Scottish Ornithological Cruise Ltd surplus on liquidation	1809	8 3	—
Premium on repayment of £500 5% Defence Bonds	15	0 0	—
Accumulated Surplus as at 30th June 1968	<u>£4220</u>	<u>19 11</u>	<u>£2758</u>
(Note. £1000 of this surplus is earmarked for the House Fabric Fund)			
Made up of:			
Cash in hand and bank current accounts	£166	12 9	£109
Savings Bank account	42	12 0	128
Bookshop stock at valuation	602	0 0	597
Tie and Badge stocks at valuation	153	7 6	225
Debts due to Club	260	12 2	300
Investments at cost, as below	4000	6 2	5608
	<u>£5225</u>	<u>10 7</u>	<u>£6967</u>
Less:			
Life Membership Fund	£150	0 0	—
Subscriptions paid in advance	41	5 0	80
Donations not yet expended	—	—	28
Debts due by Club	357	19 3	378
Sum due to Endowment Fund	158	2 11	13
Sum due to Cruise Company	—	—	3710
Sums earmarked for			
Library Binding	238	3 6	—
Painting	59	0 0	—
	<u>1004</u>	<u>10 8</u>	<u>4209</u>
	<u>£4220</u>	<u>19 11</u>	<u>£2758</u>

Investments as at 30th June 1968 at cost

5% Defence Bonds	—	—	£500
Loan to Edinburgh Corporation at 6¼%	—	—	500
Loan to Edinburgh Corporation at 5½% at 7 days call	£500	0 0	—
Loan to County Burgh of Wigan at 7¼% repayable 1968	600	0 0	600
Loan to Matlock Urban District Council at 7 days call	—	—	3500
Safeguard Industrial Investments Ltd—700 Ord. shares of 5/- each	507	19 11	508
£950—6½% Treasury Loan 1976	945	9 0	—
£1300 British Electricity 3% Guar. Stock 1974/77	952	9 0	—
£550—5¼% Conversion Stock 1974	494	8 3	—
	<u>£4000</u>	<u>6 2</u>	<u>£5608</u>

Revenue Account for the year ended 30th June 1968

INCOME	Year to Year to		
	30/6/68 30/6/67		
Subscriptions received for year	£2167	14 0	£1966
Income Tax recovered on covenanted subscriptions	301	13 6	248
Interest and Dividends received (gross) ...	229	7 3	283
Surplus on Bookshop (Sales £3499)	900	6 5	1151
Sale of "Scottish Birds" to non-members ...	89	10 8	124
Sundry Sales less sundry purchases	21	4 11	16
Contribution from Scottish Ornithological Cruise Ltd towards facilities granted by the Club ...	—		27
Contribution from the World Wildlife Fund towards facilities granted by the Club	6	0 0	—
Donations received	53	8 0	86
	<u>£3769</u>	<u>4 9</u>	<u>£3901</u>
EXPENDITURE			
Branch Expenses including lectures	£340	1 4	£393
Travel Expenses of Council Members and of Delegates to Conferences	50	18 11	49
Secretarial Services	2089	14 4	1536
Office Expenses	445	10 0	397
Scottish Centre for Ornithology and Bird Protection : Club's share of running expenses including £100 annual contribution to the House Fabric Fund	395	8 7	454
Cost of books purchased for Library	113	5 10	63
Cost of publishing "Scottish Birds" (less advertising revenue £239)	648	14 5	606
Net cost of Annual Conference	18	3 4	64
Subscriptions paid	29	5 6	16
	<u>£4131</u>	<u>2 3</u>	<u>£3578</u>
Excess of Expenditure over Income carried to Balance Sheet	<u>361</u>	<u>17 6</u>	<u>(323)</u>
	<u>£3769</u>	<u>4 9</u>	<u>£3901</u>

House Fabric Fund—Summary of Accounts for year to 30th June 1968

RECEIPTS	Year to Year to		
	30/6/68 30/6/67		
Balance as at 30th June 1967	£26	1 2	£202
Year's rent from Royal Society for Protection of Birds	100	0 0	100
Year's rent from Mr and Mrs George Waterston ...	100	0 0	100
Annual Contribution from Scottish Ornithologists' Club Revenue Account	100	0 0	100
Special Contribution from ... do.	—		125
Miscellaneous Interests	1	3 11	5
	<u>£327</u>	<u>5 1</u>	<u>£632</u>
EXPENDITURE			
Repairs and Maintenance	£32	15 7	£379
Property Burdens	166	0 2	212
Insurance	18	6 7	15
	<u>217</u>	<u>2 4</u>	<u>606</u>
On Deposit with Dunedin Building Society ...	110	2 9	26
	<u>£327</u>	<u>5 1</u>	<u>£632</u>

ENDOWMENT FUND

(the free income of which is available for the advancement of ornithology)

Revenue Account for the year ended 30th June 1968

		Year to		
		30/6/68	30/6/67	
INCOME				
Interest and Dividends received (gross)	...	£178 12 9		£115
EXPENDITURE				
Grants (as detailed in Reports of Council)	...	30 0 0		100
Unexpended Income for the year	...	£148 12 9		£15

ENDOWMENT FUND

Balance Sheet as at 30th June 1968

Endowment Fund as at 30th June 1967	...	...	£2079 19 6	£2075
Additions to Fund during year—share of Scottish Ornithological Cruise Ltd on liquidation	...	...	1000 0 0	5
Endowment Fund as at 30th June 1968	...	...	£3079 19 6	£2080
Accumulated Unexpended Income as at 30th June 1967	...	...	£128 11 7	114
Add Unexpended Income of year	...	...	148 12 9	15
Accumulated Unexpended Income as at 30th June 1968	...	...	277 4 4	129
			£3357 3 10	£2209
Made up of :				
Investments at cost, as below	...	...	£2999 16 9	£2000
Royal Bank of Scotland—Deposit Account	...	...	199 4 2	196
Due by Club's main Funds	...	...	158 2 11	13
			£3357 3 10	£2209

Investments as at 30th June 1968 at cost

£1151—3½% War Stock	...	...	...	£1000 0 0	£1000
976 Units of the Equities Investment Trust for Charities Ltd	...	...	...	1000 0 0	1000
£1140—5% Exchequer Stock 1976/78	...	...	...	999 16 9	—
				£2999 16 9	£2000

EDINBURGH, 27th September, 1968.—I have audited the foregoing Revenue Accounts for the year to 30th June, 1968, and the Balance Sheet as at that date. I have accepted as correct the Subscriptions and other receipts shown as received in the Books and the value placed on the Bookshop Stock. Subject to this I certify that in my opinion the foregoing accounts are correctly stated and sufficiently vouched.

(Signed) ARTHUR WALKER,
Chartered Accountant.

REPORT OF COUNCIL

Your Council submits the following Report for the year 1967/68 :

Membership At the end of the session Club membership had reached a total of 1949 with 351 new members enrolled during the year, or 26 more than in the previous session. Resignations and lapsed subscriptions (189) were higher than before, partly due to the number of overseas members who joined during the cruise and did not continue to subscribe. The total increase for the year was 162, reflecting the normal steady growth of the Club. Three members transferred to the new Life Membership subscription. A table of membership figures for the past six years is given below :

	31/8/63	30/6/64	30/6/65	30/6/66	30/6/67	30/6/68
Ordinary	1062	1194	1263	1373	1524	1677
Junior	195	198	222	252	259	265
Life	—	—	—	—	—	3
Honorary	4	3	3	3	4	4
	<u>1261</u>	<u>1395</u>	<u>1488</u>	<u>1628</u>	<u>1787</u>	<u>1949</u>
Increase	158	134	93	140	159	162

The number of Deeds of Covenant signed by members for their subscriptions rose from 262 to 313, representing 355 subscriptions and contributing £302 to the income of the Club. This session completed the first seven years of covenanted subscriptions, and the Council wishes to thank the many members who renewed them for a further period, and to stress the value to the Club of this method of subscribing.

Honorary President At the Annual General Meeting the Council had great pleasure in announcing the election of Sir Arthur Duncan as an Honorary President of the Club.

Deaths It is with great regret that the Council records the death of several of our older members : Mr G. G. Blackwood, a founder member; Mr David Hamilton, a founder, and later an Honorary member; the Rev. J. M. McWilliam, one of our Honorary Presidents; Colonel Richard Meinertzhagen, Mr Charles W. Sanderson, and the Rev. E. T. Vernon, a founder member and for many years Chairman of the Glasgow Branch.

Business of Council Five meetings of Council were held during the session. A special Management Committee was appointed under the Chairmanship of the Hon. Treasurer with responsibility for examining and making recommendations as required on matters of Club administration. This Committee was asked to consider an application for a grant towards an expedition organised by student members of the Club to carry out a census of seabirds on St Kilda, and on their recommendation the Council gave a special donation of £30 from the Endowment Fund.

A request was received from the Malta Ornithological Society for support for an appeal to their Government to retain the Gadeira Marsh as a nature reserve. The Council considered a report on this area, and approved a letter written by the Chairman to the Prime Minister of Malta commending this project to him.

The Council also gave their support to two other important projects : the seabird census organised by the Seabird Group, and the Atlas of British Breeding Birds which was launched by the British Trust for Ornithology in the spring, based on an enquiry over a five-year period. Mr C. G. Headlam has been appointed coordinator for Scotland for the Atlas scheme. The Council commends these two projects to all members of the Club and asks for their fullest cooperation.

Sir Landsborough Thomson and Mr George Waterston continued to represent the Club at meetings of the British Section of the International

Council for Bird Preservation, and Miss Valerie Thom was nominated as our representative to the Duck Working Group of the International Wildfowl Research Bureau.

Annual Conference The Twentieth Annual Conference and Annual General Meeting of the Club, held in Dunblane, was attended by over 250 members and their guests. Papers on ecological studies of seabirds and a preliminary account of the effects and lessons of the Torrey Canyon disaster were given by Dr G. M. Dunnet (Culterty Field Station) and Dr Duncan Poore (Director General of the Nature Conservancy) respectively, and films were shown. A joint meeting was held with the Royal Society for the Protection of Birds when the Director, Mr Peter Conder, gave a lecture on current developments in bird protection.

Branches A full programme of lectures was given in eight Branches and two Groups. As a result of the growth in attendance stimulated by the enthusiasm of the office-bearers, the new Stirling Group has now been given Branch status. Local excursions were organised by the Branches during the summer and the annual weekend excursion to the Solway goose grounds was well attended. The latter was greatly helped by the officers and members of the Dumfries Branch.

"Scottish Birds" Four numbers of the journal were published during the session and Volume 4 was completed with an Index. The Council adopted a proposal by the Editor for an annual report to replace the current notes published in each number, and appointed local recorders throughout Scotland to collect records. The Council wishes to express its thanks to Mr Peter Slater, now retiring from the Editorial staff, for his work in collating the current notes.

A new cover for the journal designed by Mr John Busby was approved and introduced in the new volume.

Club Library The Library Committee met several times during the year to continue their discussions on requirements and the binding programme. Over 60 volumes of important journals were collated and sent for binding, utilising about a third of the special allocation of funds for this purpose.

Council again thanks those who have so generously presented books, journals and reprints which have been a valuable addition to our collection.

Scottish Bird Records Committee The Committee met once during the session under the Chairmanship of Mr D. G. Andrew. Its Annual Review continues to be published in *Scottish Birds*.

Bookshop Sales of books were maintained at a high level. Displays were taken to the annual conferences of the British Trust for Ornithology, and the RSPB/Irish Ornithological Club in Eire, where considerable sales were made. Opportunity was also made available for book displays at local meetings of the Scottish Wildlife Trust, and the Council thanks these bodies warmly for the assistance they have given to our publicity and sales.

Scottish Centre Facilities were again made available for informal discussion groups and for meetings of the Young Ornithologists' Club, the Fair Isle Bird Observatory Trust, the Isle of May Bird Observatory and Field Station Committee, and the Aberlady Bay Nature Reserve Biological Committee. Temporary office accommodation was also provided for Mr Peter Tait, Scottish Organiser of the World Wildlife Fund. Many enquiries were dealt with from British and overseas visitors.

In the spring, Miss Fiona McLaren, Assistant Secretary, left the staff in order to take up a position abroad. Her place was filled temporarily for two months by Miss Jenny Bradley.

Acknowledgments In conclusion, the Council wishes to record its sin-

ere thanks to all those who have helped the Club so freely throughout the session, by covenants, donations, lectures, Branch organisation, editorial assistance, service on special committees and in many other unseen and useful ways.

For the Council, W. J. EGGELING, President.

THIRTY-SECOND ANNUAL GENERAL MEETING OF THE CLUB

The 32nd Annual General Meeting of the Club was held in the Hotel Dunblane, Perthshire, on Saturday 26th October 1968 at 6 p.m. Dr W. J. Eggeling, President of the Club, presided over an attendance of about 150 members.

Apologies Apologies for absence were received from Dr David Bodington, Dr J. Morton Boyd and Dr I. D. Pennie.

Minutes The Minutes of the 31st Annual General Meeting, held in Dunblane on 28th October 1967, were approved and signed.

Report of Council The Report of Council for the last session, presented by the Chairman, was adopted.

Accounts Presenting the Accounts for the year, the Hon. Treasurer said that these showed a deficit for the first time. With the exception of one abnormal item, this had been forecast and he estimated that with present staff commitments, a deficit of £150 could be expected in the coming year. The Accounts were approved.

Commenting on the Accounts, the Chairman emphasised that the Club was now approaching a difficult period in its growth. The development of the RSPB, which had necessitated their removal in the autumn from 21 Regent Terrace to larger premises, had resulted in a loss of rental only partially recovered by leasing one of the vacated offices. The staffing requirements of the Club were being considered again and would be advertised in the December journals. An alteration in the staff structure would correspondingly increase the deficit for the coming year and might result in a proposal to increase the Club subscription.

In response to a question from the Chairman, members present showed that they accepted that there might be good reason for an increase in subscription in a future year and that they looked upon this as not unreasonable.

Appointment of Auditor Mr Arthur Walker, C.A. was re-elected Auditor for the ensuing session.

Election of new Members of Council In the absence of any other nominations, R. S. Baillie and C. G. Headlam were elected Members of Council in place of J. H. B. Munro and G. L. A. Patrick who were due to retire by rotation. The Chairman thanked the retiring Members for their service to the Council.

B.T.O. Atlas of British Breeding Birds At the invitation of the Chairman, C. G. Headlam, Scottish coordinator for the Atlas of British Breeding Birds project, spoke briefly about the areas already covered and asked for the support of members in this important survey. He paid tribute to the help already given by Local Recorders and Branch Secretaries.

Votes of Thanks The Chairman moved a warm vote of thanks to all those who had given their help at the Conference and to the Club staff. The meeting closed with a hearty vote of thanks to the Chairman proposed by A. T. Macmillan.

**COUNCIL AND OFFICE BEARERS OF THE CLUB
FOR SESSION 32**

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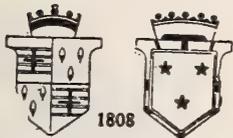
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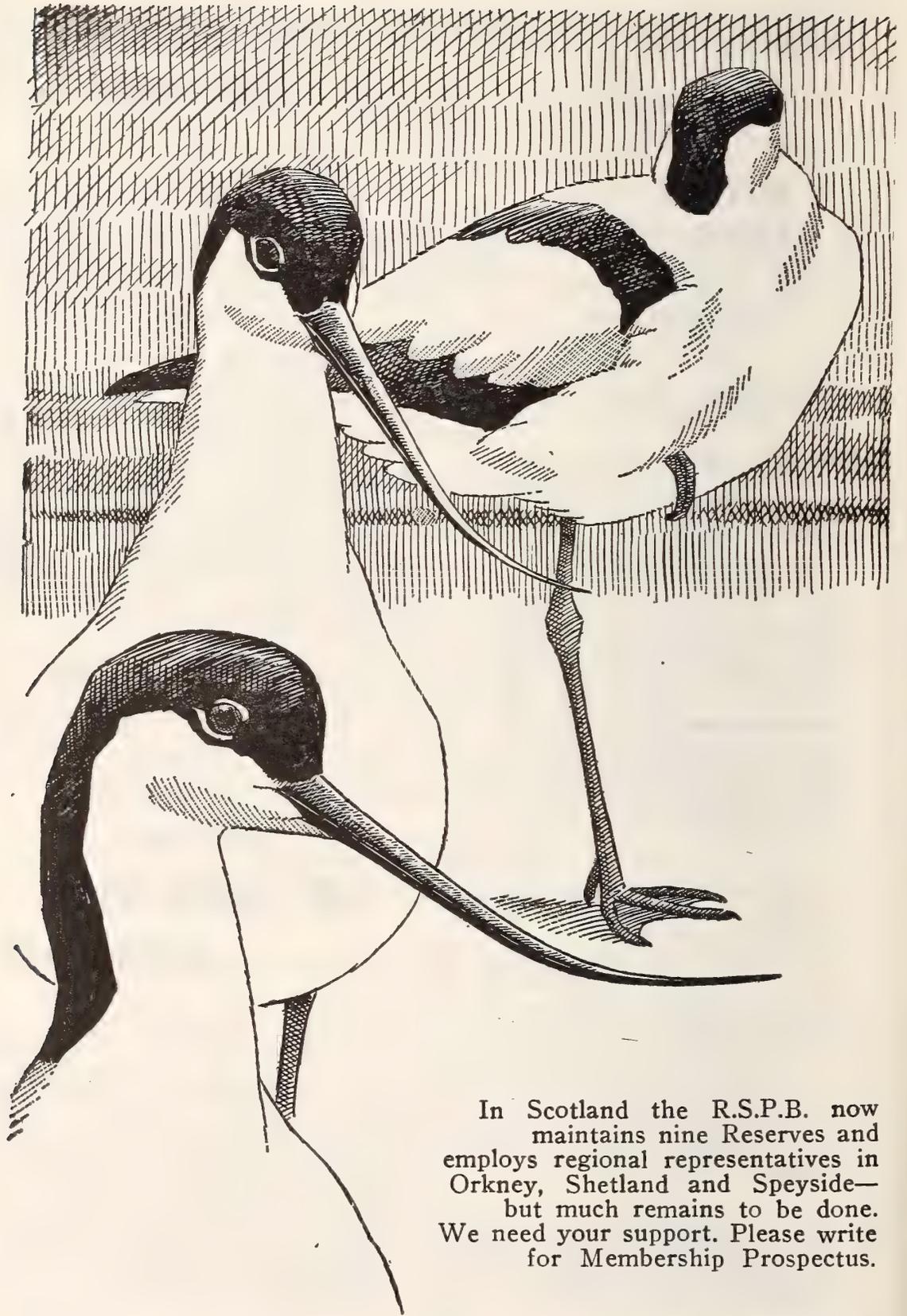


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2. If not sent earlier, all general notes for January to October each year should be sent to the local recorders early in November, and any for November and December should be sent at the beginning of January. In addition, local recorders will be glad to have brief reports on matters of special current interest at the end of March, June, September and December for the journal. All other material should of course be sent as soon as it is ready.

3. All contributions should be on one side of the paper only. Papers, especially, should be typed if possible, with double spacing. Proofs will normally be sent to authors of papers, but not of shorter items. Such proofs should be returned without delay. If alterations are made at this stage it may be necessary to ask the author to bear the cost.

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

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

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

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

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

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

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

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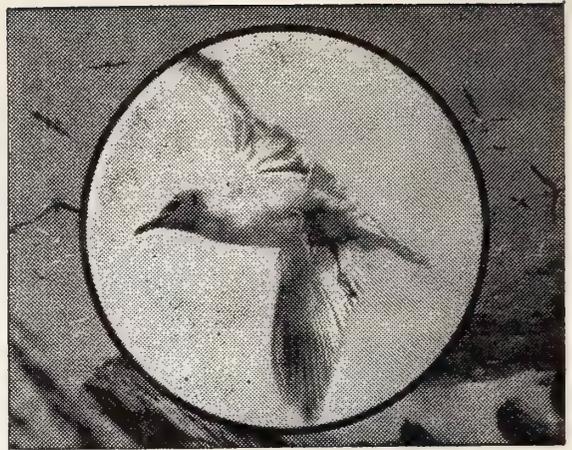
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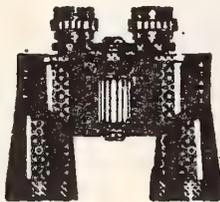
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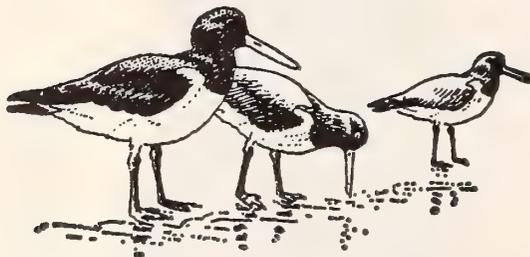
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Vol. 5 No. 5

Spring 1969

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M. J. EVERETT. Business Editor, T. C. SMOUT.

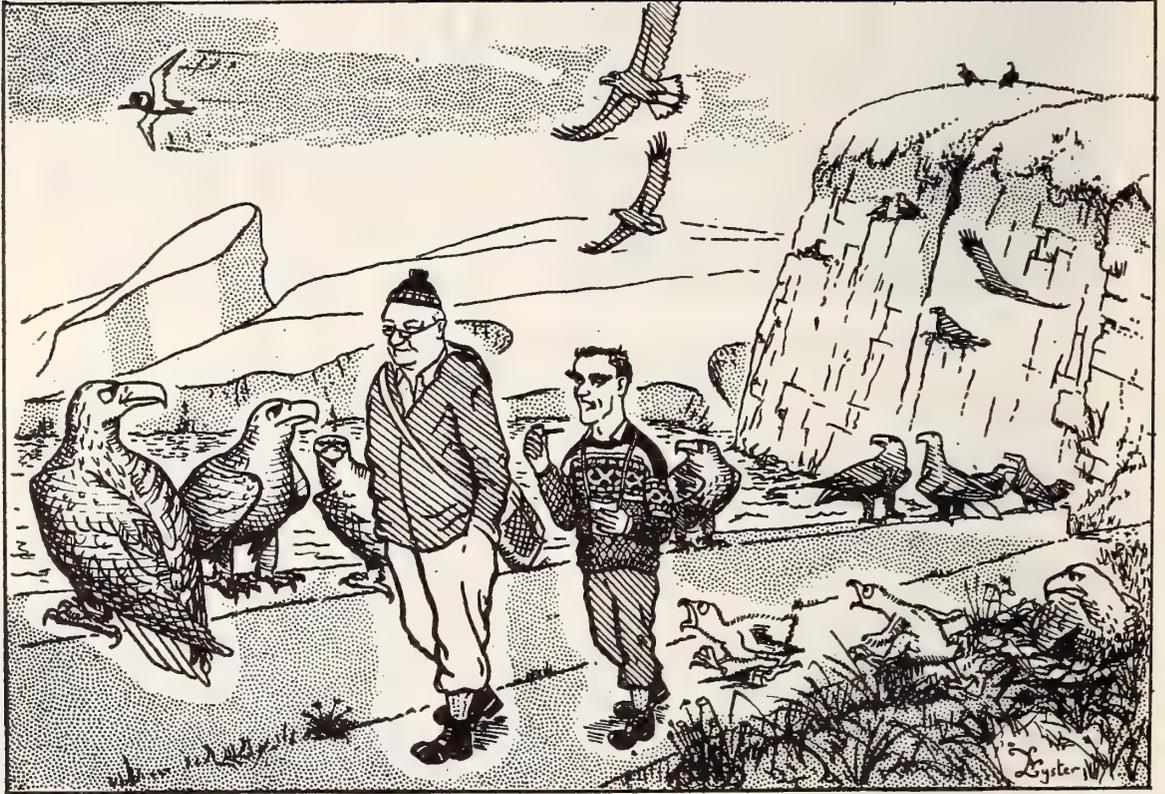
Editorial

New Fair Isle Bird Observatory. Plans of the new observatory buildings for Fair Isle have now been approved and are being put out to tender, with a view to carrying out the work this summer. The original £36,000 has already been promised, but costs have risen in the two years since that estimate was made, and further support is still urgently needed. The new buildings will provide a guarantee of the observatory's future and thus lend the most worthwhile and valuable support to the whole island community, which also benefits from the recent introduction of a charter air service and the consequent possibility of getting sick people to hospital in a matter of hours in any but the most severe storms.

Mrs Ruth Buller and the Border Committee of the World Wildlife Fund have arranged a Garden Fête for Saturday 5th July at the Holmes, St Boswells, Roxburghshire. Peter Scott will open it at 2.30 p.m. Attractions include a pony gymkhana, continuous filmshow, exhibition of bird photographs, and the usual stalls and sideshows, the star prize being a fortnight's free holiday for two on Fair Isle. It has been agreed by the WWF that the entire proceeds will be devoted to the Fair Isle Bird Observatory Building Fund.

The Holmes overlooks a beautiful stretch of the Tweed, and it is hoped that the fête will be supported by as many SOC members as possible. Donations of prizes for the tombola may be sent to 21 Regent Terrace, Edinburgh 7, where full details of the Fair Isle appeal may also be had.

Operation Seafarer. 1969 is census year in this detailed survey of British seabirds. Offers of help in any area will be welcomed, but this is an urgent appeal from the Organiser for help to fill the remaining gaps in Scotland—the north Mainland of Shetland, Hoy, Benbecula and South Uist, Raasay and Rona, the west mainland of Inverness-shire and Argyll, Tiree, Coll, Colonsay, Jura, Gigha and Arran. Observers are needed for these important areas **now**, for this summer. Please write to David Saunders, Tom the Keeper's, Marloes, Haverfordwest, Pembrokeshire.



"Perhaps we could reintroduce the Fulmar from St Kilda."

Sula bassana. Congratulations to David Merrie, SOC Council Member and Secretary of the new Stirling Branch, on winning the AA's *Drive* Photo-Safari competition for amateur photographers from an entry of 10,000. His prize is an East African safari for two as guests of the Kenyan Government. The prize-winning picture—reproduced in colour in the New Year issue of *Drive*—is a most satisfying group of Gannets on the Bass Rock.

- Current literature.** Recent papers of Scottish interest include:
- Etude écologique des deux espèces de Fulmars, le Fulmar atlantique...et le Fulmar antarctique...J-L. Mouglin, 1967. *Oiseau* 37: 57-103. Mainly Aberdeenshire/Adelie Land comparison.
- Loch Leven, 1967. C. R. G. Campbell, 1968. *Wildfowl* (previously *Wildfowl Trust Annual Report*) 19: 159-160. Duck censuses etc.
- A trial to investigate the reactions of sheep to goose droppings on grass. J. B. A. Rochard & J. Kear, 1968. *Wildfowl* 19: 117-119. Interesting Scottish study.
- Barnacle Geese in the west of Scotland, 1957-1967. H. Boyd, 1968. *Wildfowl* 19: 96-107. Hebridean and other censuses.
- Rough-legged Buzzards in Britain in the winter of 1966/67. R. E. Scott, 1968. *Brit. Birds* 61: 449-455.

Observations on the behaviour of the Great Skua or Bonxie *Catharacta skua skua* during the early fledging period in Shetland. R. D. Oades, 1968. *Seabird Bull.* 6: 22-34.

The distribution of the Raven in Britain and Ireland. D. T. Holyoak & D. A. Ratcliffe, 1968. *Bird Study* 15: 191-197. Breeding mapped by 10-km squares.

Bluethroat nesting in Scotland. J. J. D. Greenwood, 1968. *Brit. Birds* 61: 524-525.

Ornithological Atlas 1968-72

During the winter it has been possible to organise regional responsibility for the greater part of Scotland. Much thanks is due to those who have undertaken to organise coverage in their areas, and to Local Recorders for their part in this.

A list of areas and their organisers is given below. For practical reasons, this differs in some respects from the Scottish Bird Report list of Local Recorders, and it has not been possible either to adhere precisely to county boundaries or to delineate exactly the areas arranged. But neither residents nor summer visitors should find it difficult to decide which Area Organiser to contact.

Records from remote areas will be especially useful; but please do not assume that somebody else has already covered even quite well-known places of ornithological interest.

Ornithological Atlas Area Organisers

Shetland (except Fair Isle) R. J. Tulloch, Reafirth, Mid Yell, Shetland.

Fair Isle R. H. Dennis, Bird Observatory, Fair Isle, Shetland.

Orkney E. Balfour, Isbister House, Rendall, Orkney.

Outer Hebrides (except St Kilda) W. A. J. Cunningham, 10 Barony Square, Stornoway, Isle of Lewis.

Caithness D. M. Stark, 2 Harland Road, Castletown, Thurso, Caithness.

Sutherland, Ross-shire (except Black Isle), St Kilda, Skye, Inner Hebrides, Argyll, Bute C. G. Headlam, Foulis Mains, Evanton, Ross-shire.

Inverness-shire (within 18 miles of Inverness), Ross-shire (Black Isle only) Dr Maeve Rusk, Arniston, 51 Old Edinburgh Road, Inverness.

Inverness-shire (mainland more than 18 miles from Inverness) Hon. D. N. Weir, English Charlie's, Rothiemurchus, Aviemore, Inverness-shire.

E. Nairnshire, Morayshire Dr R. Richter, Gordonstoun School, Elgin, Moray.

Banffshire J. Edelsten, 14 South High Street, Portsoy, Banffshire.

Aberdeenshire, N. Kincardineshire N. Picozzi, Unit of Grouse and Moorland Ecology, Blackhall, Banchory, Kincardineshire. W. Murray, Culterty Field Station, Newburgh, Aberdeenshire.

S. Kincardineshire, Angus Organiser, C. M. Morrison, Dundee College of Education, Park Place, Dundee. Recorder, G. M. Crichton, 23 Church Street, Brechin, Angus.

- Perthshire** Miss V. M. Thom, 19 Braeside Gardens, Perth.
Kinross-shire J. H. Swan, Vane Farm Reserve, Kinross.
Isle of May Miss N. J. Gordon, Nature Conservancy, 12 Hope Terrace, Edinburgh 9.
Fife (east of A90) D. W. Oliver, 4 Lawview Cottages, Abercrombie, St Monance, Fife.
Stirling area (W. Fife, E. Stirlingshire, Clackmannanshire) Organiser, H. Robb, 27 Victoria Place, Stirling. Recorder, T. D. H. Merrie, West Faerwood, Stirling Road, Dollar, Clackmannanshire.
West Lothian Dr T. C. Smout, 19 South Gillsland Road, Edinburgh 9.
Midlothian, Forth Islands (except May) R. W. J. Smith, 33 Hunter Terrace, Loanhead, Midlothian.
East Lothian K. S. Macgregor, 16 Merchiston Avenue, Edinburgh 10.
Berwickshire, Roxburghshire, Selkirkshire (for 1969) D. Grant, Hawkslee, St Boswells, Roxburghshire.
Peeblesshire (records only) A. J. Smith, Glenview, Selkirk.
Glasgow area (Dunbartonshire, Renfrewshire, W. Stirlingshire, N. Lanarkshire) J. Mitchell, Dubhaniel, Gartocharn, Dunbartonshire (with W. Wild).
Argyll, Inner Hebrides, Bute See Sutherland (C. G. Headlam).
Ayrshire Dr M. E. Castle, 9 Finlas Avenue, Ayr.
Dumfriesshire J. G. Young, Benvannoch, Wellington Street, Glencaple, Dumfriesshire (with J. Maxwell).
Kirkcudbrightshire, Wigtownshire A. D. Watson, Barone, Dalry, Castle Douglas, Kirkcudbrightshire (with R. C. Dickson).
Scottish Coordinator C. G. Headlam, Foulis Mains, Evanton, Ross-shire.

Snowy Owls breeding in Shetland

R. J. TULLOCH

Shetland Representative, Royal Society for the Protection of Birds
 (Plates 17-18)

Introduction and history

In 1967 a pair of Snowy Owls nested on the island of Fetlar, the first substantiated breeding of the species in the wild in the British Isles. During winter 1967/68 the five young owls scattered to other islands in Shetland. The old female disappeared, but the adult male stayed around Fetlar and in early spring was seen chasing a presumably local young male off the territory. An adult female, taken to be the same bird as in 1967, returned in late April 1968, and the pair bred successfully about 60 feet from last year's nest site, rearing three young.

On 11th December 1968 there were eight Snowy Owls in the Stakkaberg/Vord Hill area of Fetlar. Careful study suggested that they were the breeding pair and three 1968 young

birds together with a male and a female from the 1967 brood and an extra adult male (with two little dark 'ear' marks) that had been seen before. Another adult male was at the other end of Fetlar about this time and was evidently a ninth bird (since two adult males, neither of them the breeding bird, had been seen on 8th December).

An account of the 1967 breeding was published in *British Birds* (61: 119-132) and this paper follows a similar pattern, showing some differences between the two years and adding some new information. As before, it is based mainly on information extracted from the detailed logs kept by the wardens.

The Snowy Owl's normal breeding range is circumpolar, in the tundra zone beyond the tree limit, and within this range it is largely dependent upon the cyclic abundance of its principal food, the lemming. It has been noted that in poor lemming years Snowy Owls tend to wander widely in search of food, and it may be relevant to the Shetland breeding that there were irruptions of Snowy Owls in Scandinavia during the winters of 1960-63, immediately before the series of sightings in Shetland. In the four years 1963-66, in addition to those for Shetland, over 20 records were accepted by the *British Birds* Rarities Committee from 14 counties in Scotland and England, compared with only four in the previous five years. On the other hand, it may be noted that surprisingly large numbers of Snowy Owls have been imported into Britain in recent years, and some records, particularly the more southerly ones, may refer to escapes.

As could be expected from the geographical situation, many of the old records of Snowy Owls in Britain are from Shetland; indeed the first British record of the species is of a bird shot on the island of Unst in 1808 (MacGillivray 1840 *British Birds* 3: 412) or 1811. Saxby (*Birds of Shetland* 1874) says that Snowy Owls were particularly numerous in the mid 19th century, many being shot for collectors, and mentions hearsay instances of Snowy Owls seen on Unst with well fledged young. Venables & Venables (*Birds and Mammals of Shetland* 1955) noted that Snowy Owls had become exceedingly rare in Shetland by 1904, and they could only trace about six records in Shetland during the next half century.

In 1963 adult males were seen on Fetlar and on Ronas Hill on the Mainland of Shetland. In 1964 single birds, again adult males, were seen on many occasions between February and November; while in 1965 Snowy Owls were recorded in every month. Most of these records were of adult males, at least three individual birds, and mostly from the islands of Fetlar, Yell and Whalsay. During winter 1965/66 an adult female

was reported from Fetlar. During the following year she was seen on a number of occasions; while one, sometimes two, white male birds could often be found on Vord Hill or on Stakkaberg, the site of the following year's nest. In 1967 a pair of Snowy Owls nested on Fetlar; seven eggs were laid, six hatched, and five young were successfully reared.

Habitat and nest site

Fetlar is a little over 10,000 acres in extent, populated by a crofting community of around 90 people. The crofts are all along the south side of the island; the north side is now wholly uninhabited, although there are remains of former crofting townships at several places.

The owls nest territory was on the 400-foot rocky hill of Stakkaberg, about a mile from the sea to the north, and a mile from the nearest occupied croft to the south. The surrounding land is 'scattald', or common grazing land, and is mainly rough grass and heath with scattered outcrops of serpentine and boulder-strewn slopes. Shetland sheep and ponies roam freely over the area, and it is only infrequently visited by the crofters to drive sheep or to round-up ponies. It has been remarked that the area, with its terrain of rock and prostrate vegetation, is reminiscent of parts of the arctic tundra.

The nest site in 1967 was in a natural hollow at the top of the hill, the surrounding outcrops giving some small protection from the strong winds which are one of the characteristics of the Shetland climate. At the same time it was so placed that the sitting bird had a good view in nearly every direction. The male bird used the surrounding outcrops as lookout posts, so that invariably his warning call allowed the female to slip off before an intruder came into view of the nest.

In 1967 the nest was on the shoulder of a large rock slab, and was merely a scrape in a patch of grass filling a hollow in the rock. In 1968 the nest was placed some 60 feet away, and on a slightly lower elevation. It was not near the rocks, and as a result it was noticeably less effective in camouflaging the sitting bird.

Pre-nesting observations

Of the 1967 brood quite a lot was seen and heard during the winter. The first evidence of any young birds leaving the island was on 11th October when I saw a young female on Out Skerries; subsequently there were reports from Yell, Unst and the Mainland of Shetland, which judging by the descriptions of plumage and behaviour were almost certainly of young birds.

In Fetlar the young owls frequently came down to the

crofts in the dusk, and were sometimes seen chasing Starlings and other small birds around the stackyards. A bird which stayed near Mid Yell for a time when there was snow on the ground was surprised a number of times within a few yards of croft houses, usually sitting on a wall or haystack; it was seen in the moonlight, and occasionally even in daylight. One crofter complained that a Snowy Owl so scared his hens that they would not emerge from the shelter of a cabbage patch for most of the day.

Through watching the development of the young birds during the months after fledging we were able to decide that the 1967 brood consisted of three females and two males.

On 9th February 1968 I found four young birds—two males and two females—back near the old nest site, plus an adult male which was not the breeding bird.

On 22nd February I again visited the Stakkaberg area, and found three birds—an adult male which showed the characteristics of the 1967 bird and a first-year male and female. It was interesting to see that when I put up the young female she flew past the old male without getting any response, but that when the young male bird took flight the old male immediately gave chase and struck it with such force that he knocked it to the ground. They sat a few yards apart with the old bird 'glaring' with lowered head for a time, before the young one took off and was chased out of sight round the hill by the adult, which then flew back to the territory with more than a hint of display in its flight.

There were reports of presumed young females from Unst on 22nd April and Scalloway on 23rd. On 25th April the wardens for the coming season arrived, and on a visit to Stakkaberg we found only a young male and a young female; but on 29th a Fetlar crofter looking for ponies reported that she had seen "the old pair" on Stakkaberg. We had decided that it would be unwise to haunt the owl territory watching for the return of the old female, and the wardens were instructed to restrict observations to a point on the opposite side of the valley about half a mile away. I would take a maximum of two people quickly through the territory about once a week, my presence justified by the hope that I would be able to identify individual birds. On 9th May we found only the adult pair on the territory and saw the birds mating, and again on 15th saw mating but no suggestion that they had started laying.

In 1967 the estimated date of laying of the first egg was 3rd June. This is later than most arctic dates and in 1968 we expected laying to start earlier, but even so we were surprised to find on our next check on 21st May that the owl already

had four eggs. The observation hut was erected that evening with minimal disturbance, and a constant watch was maintained from then until after the young birds had flown.

Eggs and young

A clutch of six eggs was laid, compared with seven in 1967, and we were able to work out from hatching dates that the average incubation time was about 33 days, as in 1967. The hen bird was left undisturbed until the estimated hatching date of the first egg, when we found that she had already hatched two young and the third egg was chipping.

From an analysis of all our information it can now be seen that the first egg was probably laid on 12th May, three weeks earlier than in 1967 and in line with the average laying times given by Watson (*Ibis* 1957: 437-439), who found that most first eggs are laid between 10th and 22nd May over almost 30° of latitude in Canada, Alaska, Siberia and Scandinavia alike.

What had thrown our calculations out became apparent as hatching progressed, when we realised that there was a gap of four or five days between the third and fourth chicks. It now seems that the laying dates were: first egg 12th, second egg 13th or 14th, third egg 15th May, then a gap of four or five days, with the last three eggs laid on 20th, 22nd and 24th May. Incubation commencing with the first egg, as is usual with owls, meant that the first owlet was 12 days old when the last one hatched.

Gaps such as this in egg laying of Snowy Owls are known to occur, but it is of interest to consider the weather pattern over the laying period. A very cold northerly spell in early May had given way on 10th to mild rainy weather, which reverted on 14th to bitter dry northerly conditions, and these persisted until 21st. The bitter north winds, to which the nest was exposed, coincided almost exactly with the gap in egg laying.

I visited the nest on 24th June, when the eldest chick was ten days old, and found that the three oldest were obviously thriving well; but in the nest with them was one very small chick and one egg, and the other chick (the fourth) was lying about two feet from the nest. It was stiff, cold and wet, but still alive, and we decided that we would take it and attempt to revive it. After two days of intensive care it was feeding well and seemingly fully recovered, and we returned it to the nest.

However, when the wardens went to the nest on the 26th to return this chick, they found that the fifth one was very weak, and the sixth, which had been chipping two days before, had disappeared. The weak chick was removed, but it

died during the night; it was found to be bruised and scratched, presumably by the oldest three. It would appear that competition from the big ones was just too much, and that the small one had not been fed properly. Certainly there did not seem to be any lack of available food about the nest.

During the following three days it was possible to see that the fourth chick was being fed, and it seemed to be thriving well, but on 30th June, a day of driving rain, the head of this smallest chick could not be seen begging with the rest. A check was made, and it was found to be very weak, with gummed-up eyes and encrusted vent. It was left in the nest while I was contacted by telephone and we decided to remove it, but on their return the wardens found it lying outside the nest dead.

The oldest three were strong and vigorous and suffered no setbacks, and by the time they were 18 days old they were starting to wander away from the nest and squat among the nearby rocks, where their grey down made them very difficult to see. After the 25th day they had left the nest for good, and were only occasionally brooded by the female in wet weather. They wandered farther from the nest day by day in a generally easterly direction, as they did last year, and while this was in the opposite direction to the observation post it was also to an area which probably offered the best concealment.

In 1967 the first observed attempt at flight was at 35 days (assuming it was the oldest chick) and the first sustained flight at 43 days. In 1968 the dates were very similar, at 37 and 44 days respectively; as in 1967, all the young were strong on the wing at 50 days.

When first hatched the chicks were covered in whitish down and could do little more than cheep faintly and open their beaks for food. After about four days they could hold their swaying heads up for a short while, but only about the ninth day were their eyes fully open. Shortly after this they acquired their second down, which was dark grey-brown in colour, and they could preen and stagger about the nest. By about 30 days the whitish primaries and tail feathers were visibly sprouting. The irides were pale grey at first, gradually developing a yellow tint, and by 23 days were the same golden yellow as those of the adults.

Because the young were never seen together at close quarters after they left the nest, and because they still had quite a lot of down when they flew, we could not be certain of their sex until they were about ten weeks old and had lost their downy 'ruffs'. It was then evident that there were, as we had suspected, two females and one male.

The two young females were obviously bigger, when they were all seen together, and their first-winter plumage was quite striking. The whole of the upperparts, crown and nape, flanks and lower breast is white, closely barred blackish-brown, and the face and neck, extending in a deep V down the front, is pure white. The young males, apart from being smaller, are always neater, more compact-looking, with rounder heads, and much less contrasty in plumage. While the distribution of barring is about the same as on the females, it is browner and less distinct. From a distance this has the effect of giving the young males a fawn appearance, while young females look grey.

Food, feeding and hunting

As in 1967, rabbits made up the main bulk of the owls' diet. From the time regular watches were started to the hatching of the first chick, a period of 23 days, 25 rabbits were brought to the sitting female, and no other prey species were seen. From hatching until about 19th July, a period of 34 days (after which figures were unreliable because the young were often out of sight, and the distance made accurate identification impossible), at least 102 items of prey were brought to the nest or to the young after they had left it, consisting of 59 rabbits (making 84 in all), 23 Oystercatcher fledglings, 3 Curlew/Whimbrel fledglings, a Lapwing fledgling, an Arctic Skua fledgling, 4 unidentified birds and 11 other unidentified items. These figures are probably incomplete, because, during incubation and the fledging period, hill fog and mist often made observation impossible, and prey may have been brought to the nest or young at these times.

Most of the hunting was done in the evening or early morning. Of the first 100 prey items brought to the young, 91% were brought between 6 pm and 6 am, and 60% of these were between 9 pm and 3 am. Hunting was almost entirely by the male; only on three occasions when the young were well grown was the female seen to take prey (a rabbit, an Oystercatcher fledgling and one unidentified). The actual capture of prey was seldom seen, partly because it was usually at some distance from the observation post and partly because it was so often during the darkest part of the night. It was a fairly straightforward performance. The male owl usually sat on an elevation (sometimes on a fence post, sometimes on flat open ground) and watched for something to move. When it did he would take off and fly, usually fairly low, and land with his talons on the prey, which had usually assumed a frozen attitude. If the prey was a rabbit, the owl would just stand on it, perhaps occasionally biting at it, until it had stopped kicking, when it would be carried—one foot

gripping the head or neck and the other the back—to be presented to the female on the nest. If the prey was small, such as a bird or small rabbit, it would be carried in one foot, and sometimes for short distances in the beak.

Behaviour at nest

During incubation the female left the nest about four to six times in the 24 hours, usually for less than four minutes at a time. She would usually go off to feed in the evening and early morning, and often about midday to preen, stretch, void, and put up pellets; mating often took place during these excursions.

When the male brought food to the female he would usually land a few feet from the nest and transfer the food to his bill, walking the last bit to offer the prey to his mate, who would either take it straight away or refuse altogether. One entry in the logbook tells how the male came in with a small black rabbit, which the female refused, turning her head resolutely away when he rubbed her face with it (this was usual); so he flew off again and proceeded to eat the rabbit himself, whereupon the female poked underneath herself and produced a larger grey rabbit, which she ate. Food refused by the female was invariably taken away and either eaten by the male or left at one of a number of 'food depots' some distance from the nest. This could be an adaptation with the function of minimising the attraction of the nest site to predators.

During incubation, if the prey brought in was small, such as a young rabbit or bird, the female would often swallow it whole without leaving the nest, but if it was a large rabbit she would usually fly off about 50 yards to tear it up and eat all or part of it. The female, on the nest, was twice seen to attempt to eat a rabbit which proved to be too big for her. She gulped and strained but could not get the hind legs to disappear, and after a while brought a foot forward, grasped the legs of the rabbit, and literally pulled it out again.

The young were fed at first on tiny pieces of prey, but after a while would greedily gulp as large a portion as they could force down, and one, probably the eldest, which was 17 days old, was seen to swallow a Curlew/Whimbrel fledgling whole. By the time they were three weeks old the young were capable of pulling pieces off an open rabbit carcass but were still not able to get through the skin.

Only the female fed the young, although when the chicks were older they would often rush the male and take prey from him on his arrival. On one occasion when the young were still in the nest the male arrived while the female was absent and attempted to feed the young. The log records that

the female "came rushing back and snatched the rabbit from him," proceeding to feed the young herself. When the young were scattered and nearly ready to fly, it was still the usual procedure for the male to be met by the female, who took the prey to one or other of the young.

On one occasion the wardens were looking after two waif gull chicks in the observation post and had fed them on part of a rabbit and thrown out the rest. The male Snowy Owl, probably attracted by Hooded Crows which were investigating the scraps, came across and took away the rabbit remains and presented them to the female on the nest.

After the young had been flying about a week, the adult male damaged a wing and was kept in the bothy for three weeks, as described below. During this time the female did all the hunting for food.

In 1967 the owls were not seen either to drink or to bathe, but in 1968 the observation post was situated within sight of a small pool of water, and both male and female owls were seen to drink and to bathe vigorously on a number of occasions.

Relations with other birds and animals

A number of other bird species breed in the Stakkaberg area, including Golden Plover, Whimbrel, Oystercatcher, Ringed Plover, Wheatear, Meadow Pipit, Starling and Skylark, with Eider, Curlew, Snipe, Dunlin, Lapwing and Redshank on the lower ground towards the sea, and Great and Arctic Skuas, and Great and Lesser Black-backed Gulls on the side of Vord Hill half a mile or so from the Snowy Owls' nest.

Except for the fledglings taken for food, all these species were normally ignored by the owls, although Great Blackbacks were sometimes challenged and driven off when they became too interested in the nest area, and an almost constant but unsuccessful war was waged against a group of Hooded Crows which continually taunted and annoyed the owls, thieving food from the food depots and the young owls and generally making a nuisance of themselves. The owls were obviously no match for the cunning of the Crows, and were consistently outwitted by Hoodies acting in concert.

Most of the birds breeding in the district, plus passing birds such as Fulmar, Common/Arctic Terns, Raven and Merlin, mobbed the owls at one time or another, probably the most persistent being Great Blackbacks, Hooded Crows, Arctic Skuas and Oystercatchers. Mostly the attackers were ignored, but persistent and close dives by Arctic Skuas, terns and gulls sometimes made the male owl move to a more sheltered position in the lee of a rock. The sitting female was much less

frequently mobbed, but persistent attacks on her would sometimes spur the male into driving off the intruder.

Of much greater concern to both owls were sheep or ponies grazing near to the nest or young. Any approach within 20 yards or so was greeted with barking by the male, and by 'mantling' (lifting body feathers to increase apparent size) by the female on the nest. An approach closer than 10-12 yards would cause the female to leave the nest and the male to attack the intruders. Ponies were not normally struck, and in any case were usually driven off by the wardens before they got too close, but sheep were often struck and their wool torn out by both birds, though usually by the male; this invariably made the animals run off, when the birds would cease their attacks and the female would return to the nest.

Rabbits showed no appreciation of the danger of the owls whatever, and would often graze, unmolested, quite near the nest. Quite a number of black mutant rabbits lived in the area and these were often taken by the owls, possibly because their colour offered less chance of concealment.

There are few other mammals on Fetlar except hedgehogs and field and house mice, so there is little danger from ground predators such as stoats and foxes, which can be a menace in their normal breeding grounds. Otters are seen occasionally, but they rarely leave the coast except to follow a stream, and they are very unlikely to visit the top of the hill.

Voice, display and reactions to man

Compared with 1967 the reactions of the owls to our presence in the nesting territory differed a little. They were a bit more tolerant of the inevitable occasional movement or noise from the observation post, and indeed on one occasion the female stayed on the nest while some essential repairs were done on the roof of the hut, including nailing down felt. The reactions of the male differed in that whereas in 1967 he invariably approached, barked, and dive-bombed intruders, in 1968 he was more 'careless' and sometimes did not even notice an approach to the nest until he heard the female 'squealing' from the rock she had flown to. On the other hand, when he did decide to attack he was bolder and prepared to press home even to the point of striking.

This apparent increase in confidence also showed in the male's hooting. This seemingly is mainly a territorial claim, and Watson (*loc. cit.*) records male birds in adjoining territories in Baffin Island hooting, apparently at each other, for long periods.

In 1968 the male hooted often, sometimes at sheep or ponies wandering within his territory, sometimes apparently at other

birds, but also at humans, where in 1967 the reaction would have been aggressive, or worried, barking.

When the young owls were still in the nest both parents would become very agitated if anyone approached the nest site. The female would go into a distraction display reminiscent of Arctic Skua, thrashing the ground with her wings and making squealing noises, while the male would bark, a hoarse *ergh, ergh, ergh, ergh* repeated at intervals either while flying round overhead or sitting on a nearby rock 'glowering'. In less intense moments the female also would sit on a rock and bark in a higher pitched but similar way.

The female continued to react to humans strongly even well after the young had flown, but the male lost interest before the young were on the wing, and sometimes would not react at all. The young birds' voices developed from a weak cheeping in the nest to an intense long-drawn squeal *squeeeeeeeoooooo*, audible at least a mile away in calm conditions, and probably used as a food-begging call.

On 28th August, when the young had been flying for about a month, I found the old female with the three youngsters on the edge of the territory. I was able to approach to about 50 yards, when the old female started barking, and this was taken up by first one of the young females and then the other, a squealing sort of *eergh, eergh, eergh, eergh*, obviously directed at me, and with the same tone as the parent. The young male watched but did not call, and the old male was not in evidence, having been released only a day or two before.

On 9th August, about a week after the young were all on the wing, a Snowy Owl had been found sitting in a field on the east side of Fetlar, about four miles from the nest area, apparently unable to fly. When the wardens went to pick it up they found that it was an adult male which seemed to have a weak left wing; it was thin and showed little reaction to being handled. We suspected it was the male from Stakka-berg, and this proved to be the case.

One of the rooms in the wardens' bothy was cleared and perches provided (rocks on the floor and a pole across one corner), and the bird, after an examination which showed no physical damage, was given the run of the room. After being force-fed for two days on bits of rabbit, the owl thereafter fed himself on rabbits put into the room. After about two weeks he seemed to have recovered both strength and spirit, was flying up onto the perch readily, and was less amenable to handling. At this time however he developed an eye infection, and it was decided to keep him indoors until it had cleared.

He was a remarkably good patient, suffering the application of the prescribed eyedrops twice daily without any struggle, and in fact he was surprisingly docile throughout his convalescence. He made no attempts to attack, and would allow himself to be stroked while he sat on his perch. Saxby related how he had tried to rehabilitate injured Snowy Owls in Unst, and said that he could never understand why they had been called "the amiable owl" as he found them fierce and untameable. When released, the owl flew strongly back to the nest territory, but, though he stayed in the vicinity, he was never seen to take any further interest in the family, the female alone continuing to feed and guard the young.

Protection arrangements

In April 1968 the Secretary of State for Scotland granted a Sanctuary Order covering something over 1600 acres surrounding the Snowy Owls' nest. This area is managed by the Royal Society for the Protection of Birds, which had decided to organise a full-scale watch on the nest, as it did in 1967, should the birds return to breed in 1968.

The same disused croft house was made available, and certain repairs were done and amenities provided for the comfort of the watchers. Five people were employed for the season, four watchers and a cook-caterer, it being felt this was the minimum number which could cope with a round-the-clock watch, particularly as the duties included attending to the considerable number of visitors expected, when two people were needed on the hill—one to watch the owls and another to watch the people.

It was also found desirable to have a second hut alongside the first, with a large pair of tripod-mounted binoculars installed for the use of visitors. The wardens marked a suggested path up to the observation post, with white paint here and there on stones, and with more definite controls near the hut, so that people would stay on a path which could not be seen either by the sitting female owl or from any of the male owl's lookout posts. The system worked well, and by the time the young owls had flown they had been seen by over 600 people.

Our view of the sitting bird from the observation post was very good, slightly downwards and across a hollow to the nest about 150 yards away; through the tripod binoculars it was possible to see bluebottles walking around the nest. A great advantage from the protection angle is that in this latitude there is no real darkness during the critical incubation period; the birds' every movement could be watched right round the clock, except in misty conditions.

Local reaction

We were very fortunate in being able to enjoy full help and cooperation from everyone on the island. Lady Nicolson, proprietrix of the reserve, was most cooperative and sympathetic, even offering to buy any food necessary for the injured owl. The crofters transported our sectional huts up to the reserve on tractors, looked-on with amused tolerance as eager young wardens chased migrant birds through their crofts, and offered very acceptable relief from the rather spartan conditions in the bothy by inviting them to spend an evening with them, which could even include the luxury of a hot bath.

It must not be thought that Fetlar people looked upon this invasion of birdwatchers in the sceptical way people in remote communities have been known to see any activity which may be considered less than practical. Fetlar has long been aware and proud of its wealth of bird, animal, and plant life, and not a few of the islanders are extremely good practical naturalists.

Acknowledgments

Without the painstaking log-keeping of the wardens, much of the information in this paper would not have been available, and I am indebted to the four full-time wardens, Timothy Greenwood, Torquil Johnson-Ferguson, Iain Robertson and Martin Rohd-Thomson; also to Murdo Macdonald, who came later in the season; and to the very important person who kept the 'inner men' happy, Miss Sue Stewart. A number of visitors also took spells in the observation hut and added much useful information.

The Snowy Owls themselves owe much to the RSPB for financing and organising their welfare, and to the proprietors and people of Fetlar for the sympathy and help without which the whole operation would have been impossible.

Summary

Following a surge of records of Snowy Owls in Britain in 1963-66 a pair bred on Fetlar in 1967 and 1968—the first undoubted records of breeding in Britain. In 1967 five out of six chicks fledged from seven eggs, and most remained in Shetland during the winter. In 1968 five and probably all six eggs hatched, but the three smallest chicks died, perhaps partly on account of a gap of 4-5 days between the third and fourth.

History, habitat, behaviour, breeding biology, food, hunting, plumage, and relations with man and other species are discussed, with special emphasis on 1968.

The first egg, about 12th May, was three weeks earlier than in 1967. Incubation, starting with the first egg, took 33 days. Chicks began to wander from the nest at 18 days and had abandoned it a week later. Sustained flight was recorded at 44 days and all were strong on the wing at 50 days.

Rabbits, particularly, and wader fledglings were the main food, the

male doing most of the hunting but the female taking over when he was injured and the young were already on the wing.

(Numerous reports of Snowy Owls in Scotland from 1963 onwards are detailed and summarised in the annual reports and supplements of the *British Birds* Rarities Committee, thus: 1963 (57: 271), 1964 (58: 363; 59: 301), 1965 (59: 291; 60: 334), 1966 (60: 322; 61: 362), 1967 (61: 347). Some 1968 records have probably still to be submitted and no summary is attempted here. It is known also that not every occurrence in the previous five years has been recorded. Only some of the 1964 records and hardly any of the later ones have been published in detail in *Scottish Birds*. Some account may however be published later of the intermittent Aberdeen/Banff/Inverness summer records from the Cairngorms (1963-66) and of the wintering birds at a locality in the Moray Basin (1964/65, 1965/66 and autumn 1966). Apart from Shetland, Orkney and the counties mentioned, there have been isolated winter or spring records of Snowy Owls since 1963 from Midlothian, Angus, Caithness and St Kilda.—Ed.)

Isle of May Bird Observatory and Field Station Report for 1968

Prepared for the Observatory Committee by
NANCY J. GORDON, *Honorary Secretary*

During 1968 the Observatory was manned for a total of 199 days between 31st March and 4th November. The number of observer-nights was 681. Coverage of spring migration was almost complete, and the Observatory was also manned throughout the summer, but unfortunately some good days were missed during five short gaps in the autumn.

Spring migration was fairly light, with only one good spell, in early May. As elsewhere in Britain, autumn movements started very early, and the season was full of variety, though without any spectacular large falls. New species recorded were two *Richard's Pipits *Anthus novaeseelandiae*, one, which was trapped, on 17th-18th September, the other on 19th-21st September, and a *Citrine Wagtail *Motacilla citreola* on 20th September. Other additions to the ringing list were the island's second Radde's Warbler and a Grey Wagtail. Other interesting records included Firecrest, Nightingale and Yellow-breasted Bunting.

*Subject to confirmation by the Rarities Committee

Spring

There were observers on the island every day from 31st March onwards except 9th April.

April. The season started with cold weather, northerly winds and snow showers, but despite this the first observers were able to record some migration and logged 3 Wheatears passing at 1700 hrs on 31st March (daily numbers remained low until the middle of April). Ten Fieldfares arrived on 1st April, with a Woodcock and 2 Goldfinches, preceding a fair influx of finches on 2nd April, with 3 more Goldfinches, 50 Linnets and 50 Greenfinches, as well as a Water Rail. No fewer than 20 Goldfinches were moving NW on 3rd April, and thereafter up to 5 on each of 12 days until 2nd May. This is a record movement of this species on the May; prior to 1967 (with several occurrences) there had been less than one bird per year. Also on 3rd April a Merlin was seen at mid-day; and a crane (possibly Spotted) was heard and seen briefly near midnight, both this day and on 4th April, when a Shore Lark and a *Phylloscopus* warbler were seen. After a quiet week a spell of easterly weather started on the 10th, and lasted until 22nd April. During these 12 days observers saw some movement of Blackbirds (up to 50 daily), Song Thrushes (30 on 19th), Wrens (20 on 16th), Fieldfares (up to 25 daily), Wheatears (up to 60 daily), Goldcrests (15 on 21st), Linnets (up to 20 daily) and Meadow Pipits (up to 50 daily). On 16th April the first Whitethroat and 4 Chiffchaffs arrived, and also the first Ring Ouzel of the spring. These were followed next day by the first Swallow and Sand Martin and a very early Yellow Wagtail, and on 18th April by the only two Mistle Thrushes of the spring, with the first (and very early) Pied Flycatcher, first Willow Warbler, Redstarts and a Green Sandpiper. For the next four days migrants arrived overnight and during the day; the first Grasshopper Warbler on 19th, and the first Blackcap on 21st, when Willow Warblers were seen in greater strength (40, increasing to 150 on 22nd); also on 22nd the first Whinchats (5) and the first House Martin, with Swallows and Sand Martins reaching their spring peak (25 each). With mainly west winds there was only a small trickle of warblers and hirundines over the next six days, though records of note were 10 Rooks on 23rd, a Yellow Wagtail, the first Tree Pipit and the first two Lesser White-throats on 24th. East winds and fog overnight brought a new influx of Whinchats and Whitethroats on 29th April, the first Sedge Warbler, and a Nightingale.

May-June. Thanks to two spells of good murky weather, the Isle of May fared better than most other observatories during May. After a few quiet days, then a turn to east winds and poor visibility, the nights of the 4th and 5th saw

large arrivals of continental migrants, with up to 100 Redstarts, 70 Wheatears, 30 Ring Ouzels, 30 Fieldfares, 25 White-throats, 10 Whinchats, 14 Wrynecks, 3 Bluethroats, a Greenshank, a Corncrake, a Red-backed Shrike, a Grasshopper Warbler and a Shore Lark. Some of these birds stayed on the island for several days, and the pattern of movement gradually reverted to the more normal trickle of warblers, flycatchers, Redstarts and Whinchats, and a decrease in thrushes by the middle of the month. There was a small passage of Common/Arctic and Sandwich Terns between 16th and 20th May. Numbers of migrants remained low despite the easterly winds, and not until the 22nd was there some variety, with the arrival of 4 Lesser Whitethroats, 2 Chiffchaffs and a Bluethroat. Three more Bluethroats and 3 Cuckoos arrived next day. The last big influx of spring was on 25th May, when 16 Tree Sparrows, 40 Whitethroats, 15 Sedge Warblers, 10 Garden Warblers and 2 *flava* Wagtails arrived during the morning. More Tree Sparrows were seen before the end of the month, also a late Brambling (on 26th), another Cuckoo, 2 Goldfinches, and 25 Spotted Flycatchers (on 28th). A Turtle Dove turned up on 24th May, joined by another on the 30th. The spring migrants were on the move a bit longer than usual this season, and during the first days of June while east winds prevailed a few Whitethroats, a Whinchat, 3 Garden Warblers, 2 Pied and 2 Spotted Flycatchers were recorded, as well as 3 late Fieldfares. Even later stragglers included a Sedge Warbler (on 7th), a Spotted Flycatcher, 3 Greenfinches and a Willow Warbler on 13th, a Cuckoo and another Willow Warbler on 17th, and a final Willow Warbler on 23rd, when a Black Guillemot was also seen. The greatest surprise of the month was a Firecrest, trapped on 11th June, which stayed until the 13th. There were many fewer Chaffinches and Robins amongst the spring migrants this season, and not a single Yellowhammer or Grey Wagtail was seen.

Autumn

Observers were in residence from late July until 19th August; 23rd August-14th September; 16th September-3rd October; 5th-15th October; 19th-27th October; and 29th October-4th November.

Late July and August. As elsewhere in Britain the autumn migrants were off to a good early start due to the long spell of anticyclonic weather and light east winds. First arrivals on the May were a Whinchat and 2 Wheatears on 25th July, a Willow Warbler on 27th, a Spotted Flycatcher and a Whimbrel on 28th. August started with an unusually early arrival of Fieldfares, many of them first-year birds. This movement

(which was witnessed at other observatories) continued steadily throughout the month, numbers increasing to 60 or 70 daily. Meanwhile warblers and flycatchers appeared in small numbers, but no large falls occurred until the end of the month. Species worthy of note were two early Pied Flycatchers on 3rd and an early Redstart on 5th August, a Knot on 10th August, the first Garden and Sedge Warblers on 13th, and 2 Wrynecks on 24th, (only 5 Sedge Warblers were seen this autumn). Although the northern observatories were inundated with migrants several times during the month, it was not until a haar developed at midday on the 26th that the May had a share in this movement, and observers recorded a Yellow-breasted Bunting, and a Red-backed Shrike along with Fieldfares, Willow Warblers and Wheatears. There was more movement over the next few days, with a Great Spotted Woodpecker, 2 Ruff and the first Lesser Whitethroat on the 27th, 2 early Redwings, 2 Goldcrests and no less than 4 Ortolan Buntings on the 28th. During the same few days some passage of Great and Arctic Skuas was noted, and a Pomarine Skua was seen on the 30th (the first record for 11 years). Only one Skylark was seen in August, and migrant waders were scarcer than usual.

September. Alternating spells of unsettled and calm weather sustained both the odd falls and steady trickles of migrants, especially Swallows (up to 300 on the 1st, 13th and 19th), martins and Meadow Pipits (up to 500 daily). Six Barred Warblers and a Red-breasted Flycatcher arrived on 2nd, a Treecreeper and a Wood Warbler on 7th, a *flava* Wagtail on 8th, 18 Siskins on 11th, a Bluethroat and another Red-breasted Flycatcher on 12th, 3 Grey Wagtails on 13th, the first Snow Bunting and 2 Bluethroats on 17th. Wheatear numbers were up to 35 daily early in the month but dropped off later. Up to 100 Fieldfares were seen daily until 23rd, and Song Thrush and Redwing numbers increased towards the end of the month, as did Ring Ouzels (14 on 27th). The highlights of the month were two *Richard's Pipits (17th-21st) and a *Citrine Wagtail (20th) during a week of good migration weather. On 18th and 19th there was some passage of Swallows, martins, pipits and *alba* Wagtails, and a Greenshank was seen on the 20th. A small passage of Red-throated Divers was noted on 20th-22nd. Bad weather overnight and during the day of 23rd September brought two influxes of Fieldfares and Redwings, with 3 Grey Wagtails, 6 Blackcaps, 6 Garden Warblers and 6 Goldcrests. The first noticeable movement of Skylarks was on the 25th. Westerly winds prevailed until the end of the month, with very little movement (though 3 Whimbrel and a Greenshank were seen on the 26th, and 9 Redpolls on 30th). However, sea-watches produced a Sooty

Shearwater, 5 Scaup, an Arctic Skua and a Black Guillemot in winter plumage on 26th, a Great Skua on 29th and a Velvet Scoter and 63 Pink-footed Geese on 30th.

October. The month began with some tern passage, and on the 2nd a Curlew Sandpiper was seen, as well as single Red-throated and Great Northern Divers; also 3 Grey Wagtails arrived overnight, the fourth time this autumn that as many as 3 had been seen in one day. Little happened over the next few days, except that on the 7th the year's only Stonechat was recorded, in company with a Spotted Redshank. Despite mainly west winds there was much visible migration on 8th-10th October (up to 460 Fieldfares, 100 Redwings and 200 Blackbirds daily). One of the few Woodcocks of the autumn arrived on 8th, also a Northern Great Spotted Woodpecker, a Great Grey Shrike and a Peregrine. Small numbers of warblers and finches were passing through, and a Yellow-browed Warbler turned up on the 9th. Numbers of Bramblings reached 190 on the 10th, and the last terns (7 Sandwich) were seen. Strong winds hindered both migrants and observers for the next few days, and the next influx was sometime during the gap in observer cover, probably on 19th October, and included a Sparrowhawk, a Merlin, 2 Black Redstarts and many thrushes. On the 21st another Northern Great Spotted Woodpecker arrived (and stayed into November). On the 22nd the island's second Radde's Warbler was trapped, the last Swallow and a late last Whimbrel passed through, and 12 Redpolls arrived overnight. A last late Garden Warbler was seen on the 23rd, along with 9 *alba* Wagtails, a Goldfinch, 4 Tree Sparrows and the only Mistle Thrush of the autumn. Passage of Blackbirds (up to 200), Fieldfares (up to 400), Redwings (up to 200), Song Thrushes (up to 50) and Bramblings (up to 34) continued throughout the next 3 days, and a Merlin was seen on the 26th. After this there was very little movement, due to severe northeasterly gales from 31st October to 3rd November, but by 4th, when the winds had dropped, coastal movement of Skylarks, Snow Buntings, Blackbirds and pipits was resumed.

Unusual occurrences

Great Northern Diver. One, 2nd October. Seventh record. First for 9 years.

Shoveler. One each, 12th and 20th September. Only fourth year of occurrence.

Whimbrel. One, 22nd October. Latest autumn record.

Greenshank. One 5th-6th May. First spring record.

Curlew Sandpiper. One, 2nd October. Fifth record.

Pomarine Skua. One each, 30th August and 5th September. Sixth year of occurrence.

Wryneck. Fourteen, 6th-7th May. Largest movement recorded.

Shore Lark. One, 4th-8th April. Fourth and earliest spring record.

Fieldfare. Autumn passage started 2nd August, exceptionally early.

Nightingale. One, 29th-30th April. Ninth year of occurrence.

Radde's Warbler. One, 22nd October. Second record.

Firecrest. One, 11th-13th June. Fourth and only spring or summer record.

***Richard's Pipit.** One each, 17th-18th and 19th-21st September. First records.

***Citrine Wagtail.** One, 20th September. First record.

Goldfinch. Largest number recorded (up to 20 on 13 days in April).

Yellow-breasted Bunting. One, 26th August. Sixth record.

Note. The Tawny Pipit record for 3rd November 1967 was not accepted by the Rarities Committee.

Breeding populations

Research was continued on the gull colonies by Jasper Parsons of Durham University, who estimated that the numbers of Herring and Lesser Black-backed Gulls are still increasing (last estimate 11,000 and 900 pairs respectively in 1967). Great Black-backed Gulls bred for the seventh successive year, though only one chick survived from a total of 3 nests. Numbers of Eider Duck appeared to be less than 1967's total of 58 pairs nesting, but hatching success in 1968 was better, probably 30%-40%. Shag, Guillemot, Razorbill and Puffin numbers all apparently increased slightly (the Shag population seemed unaffected by the mussel poisoning which caused heavy mortality further south in May). About 30 pairs of Fulmars bred, rather fewer than in 1967. Mallard (2 pairs) bred for the first time, several chicks hatched, but none survived. One pair each of Swallows and Blackbirds nested, and at least four pairs of Dunnocks. A pair of Linnets attempted to nest (the first for 8 years) but the nest and eggs were found deserted in the top lighthouse garden.

Ringing and recoveries

7061 birds of 64 species were ringed, slightly fewer than in 1967. As in the previous two years of gull research work, well over half the total consists of Herring Gulls (4884), and there was also a record total of Shags (774 ringed). Another record total was Ring Ouzel (12), and higher totals than usual included Meadow Pipit (70), Fieldfare (35), Siskin (26), Wry-neck (10) and Bluethroat (6). Additions to the ringed species were *Richard's Pipit, Radde's Warbler and Grey Wagtail. For the second time only, a Firecrest and a House Martin were on the ringing list. No Kittiwakes, Razorbills or Guillemots were ringed, and very few Robins, Dunnocks, Greenfinches or Chaffinches (2 only).

The total of 260 recoveries included 180 Herring Gulls, 15 Lesser Black-backed Gulls and 42 Shags (13 of which met their fate off the NE coast of England during the summer). The pre-fledging mortality of ringed Herring Gulls (19%) was double that of the previous two years—attributed to a combination of starvation and salmonella disease.

*Subject to confirmation by the Rarities Committee

The foreign recoveries and controls are listed below:

		Ringed	Recovered	
Lesser Black-backed Gull	Pull	21. 7.67	Bouskoura, nr. Casablanca, Morocco	16. 1.68
Lesser Black-backed Gull	Pull	21. 7.67	Rabat, Morocco	10. 1.68
Lesser Black-backed Gull	Pull	21. 7.67	Chipiona/Rota, Cadiz, Spain	15. 1.68
Lesser Black-backed Gull	Pull	21. 7.67	Torremolinos, Malaga, Spain	15. 2.68
Lesser Black-backed Gull	Pull	1. 7.67	Ayamonte, Huelva, Spain	15. 3.68
Lesser Black-backed Gull	Pull	8. 7.66	Biscay, 14 m. N of Fuentarrabia, Spain	28. 2.68
Lesser Black-backed Gull	Pull	21. 7.67	Palos de la Frontera, Huelva, Spain	25. 8.68
Lesser Black-backed Gull	Pull	9. 7.66	La Teste de Buch, Gironde, France	5. 1.68
Herring Gull	Pull	18. 6.66	St Gilles-sur-Vie, Vendee, France	1.10.67
Herring Gull	Pull	29. 6.67	Fouras, Charente- Maritime, France	6. 7.68
Herring Gull	Pull	2. 7.67	Whiddy Is., Bantry Bay, Eire	13. 8.68
Blackbird	Ad	28.10.64	Vildbjerg, Jutland, Denmark	12. 3.68
Blackbird	Ad	20.11.66	De Cocksdorp, Texel, Holland	12. 1.68
Blackbird	FG	7.10.65	Sandnessjøen, Nordland, Norway	12. 9.68
Blackbird	1st Y	1.11.67	Saedding, Esbjerg, Denmark	24.10.68
Garden Warbler	FG	14. 8.65	Nr. Lisbon, Portugal	8. 8.68
Whitethroat	Ad	15. 5.65	Saugon, Gironde, France	— 7.67
Goldcrest	FG	24. 9.66	Katwijk-aan-Zee, Nether- lands	19. 4.68
Dunnock	FG	2.10.65	Herve, Liège, Belgium	11.11.67
Chaffinch	Ad	14.10.66	Stranda, Norway	18. 4.68
Brambling	FG	13.10.62	Nr. Slins, Liège, Belgium	11.11.67

A Long-eared Owl recovery from Doncaster was a first for the island. A Fulmar and a Wheatear ringed on Fair Isle were recovered (dead and alive respectively) on the May.

Other observations

No changes were noticed in the population of grey seals. Rabbits were even more numerous than usual, but towards the end of the season many were in poor condition and a number dying, though not from myxomatosis; some were found to have diseased livers (coccidiosis).

It was noted that the vegetation and soil were continuing to suffer from the pressure of gulls, Puffins and rabbits. By the end of the year there were quite large areas of soil devoid of vegetation and heavily undermined by burrows—a scene resembling parts of the Farne Islands.

Miss C. Jangoux from Belgium who stayed at the Observatory in July kindly presented a copy of E. A. Armstrong's

Bird Display and Behaviour to the library, which also received copies of Annual Reports from 17 other Observatories (21 reprints of the Isle of May's 1967 Report were distributed).

The Committee is grateful to those observers who helped repair traps and carried out other tasks at the Low Light during the season; it also wishes to thank the Principal Keeper and his staff, and the skippers of the *Breadwinner* for all their help and cooperation during the season. The Observatory regretted saying farewell to Mr Crawford when he left the island in the autumn, but was pleased to welcome Mr Magnus Pearson in his place as Principal Keeper.

The food of the Shag in Loch Ewe, Ross-shire

DEREK MILLS

Department of Forestry and Natural Resources, University of Edinburgh

Introduction

A detailed investigation into the ecology of flatfish, particularly juvenile plaice *Pleuronectes platessa*, is being made by the Marine Laboratory, Aberdeen, at Firemore Bay on the west shore of Loch Ewe, a sea loch on the west coast of Ross-shire.

As the Shag *Phalacrocorax aristotelis* is the most abundant species of fish-eating bird in this area it is essential to the study to know whether pleuronectids form part of its diet, particularly as the closely related Cormorant *P. carbo* has been found to be a serious predator of plaice and flounders *P. flesus* during fertilisation studies in Loch Craigin, Argyll (Gross 1947, 1949).

This paper gives the results of the analysis of the stomach contents of 79 Shags from the Loch Ewe area.

Methods

Between October 1964 and September 1966 seventy-nine Shags (46 adults and 33 juveniles) were collected from Loch Ewe. The birds were examined as soon after death as possible; when examination had to be delayed they were deep-frozen. The contents of the oesophagus and stomach were removed, and the whole organisms and easily identified remains picked out. The remaining food fragments were washed, and any otoliths (ear-stones) removed for later identification. All whole fish were weighed and measured. The otoliths were identified from the paper by Scott (1906).

Results

Of the 79 stomachs examined, 17 were empty. Details are

Table 1. Stomach contents of 62 Shags from Loch Ewe

Food organism	Specimens	Stomachs concerned (and % of total)
Mollusca		
Dog whelk <i>Nucella lapillus</i> (L.)	1	1 (1.6)
Rough periwinkle <i>Littorina saxatilis</i> Olivi	1	1 (1.6)
Carpet shell <i>Paphia</i> (= <i>Venerupis</i>) sp.	1	1 (1.6)
Crustacea		
Aesop prawn <i>Pandalus montagui</i> Leach	18	6 (9.7)
Shrimp <i>Crangon vulgaris</i> Fabricius	4	3 (4.8)
Hermit crab <i>Eupagurus bernhardus</i> L.	1	1 (1.6)
Fish		
Sandeel <i>Ammodytes</i> spp.	38	4 (6.5)
Long-spined sea scorpion <i>Cottus bubalis</i> Euphrasen	15	8 (12.9)
Herring <i>Clupea harengus</i> L.	20	15 (24.2)
Cod <i>Gadus morrhua</i> Day	10	4 (6.5)
Saithe <i>G. virens</i> L.	10	5 (8.1)
Poor cod <i>G. minutus</i> L.	5	1 (1.6)
Unidentified gadoid remains	—	10 (16.1)
Dragonet <i>Callionymus lyra</i> L.	8	6 (9.7)
Butter fish <i>Pholis gunnellus</i> L.	7	6 (9.7)
Wrasse <i>Labrus</i> spp.	5	3 (4.8)
Three-bearded rockling <i>Motella tricirrata</i> Day	2	2 (3.2)
Great pipe fish <i>Syngathus acas</i> L.	2	1 (1.6)
Worm pipe fish <i>Nerophis lumbriciformis</i> (Yarrell)	1	1 (1.6)
Black goby <i>Gobius niger</i> L.	1	2 (3.2)
Spotted goby <i>G. ruthensparri</i> Euphrasen	1	1 (1.6)
Fifteen-spined stickleback <i>Gasterosteus spinachia</i> Day	1	1 (1.6)
Unidentified fish remains	—	13 (21.0)

Table 2. Otoliths (ear-stones) found in the Shag stomachs from Loch Ewe

Fish species	Otoliths	Stomachs concerned
Sandeel <i>Ammodytes</i> spp.	500+	2
Cod <i>Gadus morrhua</i> Day	500+	7
Poor cod <i>G. minutus</i> L.	95	12
Saithe <i>G. virens</i> L.	46	7
Haddock <i>G. aeglefinus</i> L.	10	4
Herring <i>Clupea harengus</i> L.	3	2
Three-bearded rockling <i>Motella tricirrata</i> Day	2	2
Sea scorpion <i>Cottus</i> spp.	2	1
Plaice <i>Pleuronectes platessa</i> L.	1	1
Solenette <i>Solea lutea</i> Day	1	1

given of the contents of the remaining 62 in table 1, and of the otoliths found in the stomachs in table 2.

Table 1 indicates that the fish taken most frequently were gadoids (cod etc.) and herring. Others taken were fish characteristic of rocky and sandy inshore waters—scorpion fish, butter fish, wrasse, gobies, sandeels and dragonets. It was felt that there were insufficient data to enable a comparison to be made of the diet of Shags feeding over a rocky sea floor

and a sandy sea floor. While such a comparison has been made by Lumsden & Haddow (1946) for Shags in the Clyde area, there is always the possibility that at least a proportion of the food in the stomach was taken some distance from where the bird was shot, and Mills (1965) has drawn attention to this problem with the Cormorant.

The otoliths found in the stomachs (table 2) give some indication of the food in previous meals and also reveal other fish that have been taken but which have not been recorded from the stomachs in a whole or partially digested condition. However, the picture is somewhat biased by the nature of the otoliths and the fish. Clupeoids and sandeels are known to be digested rapidly (Lumsden & Haddow 1946) but their otoliths may persist in large numbers, as shown by table 2 for sandeels and also, incidentally, for small cod fry. Some otoliths are affected by digestive juices much more readily than others. For example, gadoid (e.g. cod, saithe) otoliths are thick structures and may remain in the stomach in a recognizable form for some time, while others, from scorpion fish and butter fish, will disappear relatively quickly. There is therefore a bias towards the conclusion, from the otolith data, that gadoids are taken more frequently than other fish.

The only evidence of plaice being eaten was from one small otolith. The only other flatfish taken was one solenette *Solea lutea*.

The size of the fish eaten ranged from small dragonets *Callionymus lyra* just over 3 cm in length to mature herring 27 cm long and weighing 180 gm. The longest fish taken, but not the heaviest, was a great pipe fish *Syngnathus acus* 33 cm long.

At a time when a herring fishery was active in the loch in January 1965, a number of birds were taken with two or three herring in their oesophagus and stomach, and because these filled the birds to capacity they were taken to represent a complete 'meal'. Assuming Shags take only one meal a day in winter (according to van Dobben (1952) the Cormorant spends only a short part of the day in fishing, partly because the feathers do not protect it sufficiently against the water) an approximate estimate of their daily winter food consumption is 246 gm, or 13.5% of their average body weight. It is interesting that Lumsden & Haddow (1946) note that in the London Zoological Gardens a Shag is allowed a normal diet of three herrings per day. They go on to suggest that in nature the quantity of food consumed is usually much larger, and mention Newbigin & Elmhirst (1931) recording a Shag containing 51 fish (41 gobies, 7 sticklebacks, 2 wrasse and a saithe). However, as the average weight of 48 of these fish is only in the region of 3 or 4 gm the total weight of the

'meal' was probably 350 to 400 gm. One of the Shags in the present investigation had taken a 'meal' of 360 gm of herring, but this was the heaviest meal recorded.

Because of the interest shown in the presence of organochlorine insecticide residues in fish-eating birds, six Shags were sent for analysis for these residues. The concentrations (parts per million, wet weight) of insecticide residues present in the livers of the birds were as follows:

pp'DDE	0.16 (0.05—0.42)
Dieldrin	0.18 (0.10—0.28)
Gamma BHC	less than 0.01

It is most likely that the dieldrin originated from sheep dip draining into the River Ewe, which flows into the sea at the head of this loch. The levels of contamination are quite low compared with those in other fish-eating birds in Britain (Moore & Walker 1964; Walker & Mills 1965).

Discussion and conclusions

The presence of only one plaice otolith in the Shag stomachs examined suggests that pleuronectids are taken very infrequently. This confirms the findings of Lumsden & Haddow (1946), who recorded no flatfish in the stomachs of 81 Shags in the Clyde sea area, and Steven (1933), who found that flatfish form only an insignificant part of the diet of Shags in Cornish waters.

Lumsden & Haddow (*loc. cit.*) suggest that Shags do not fish on the bottom but in mid-water, although some must fish close to the rocks on the bottom to catch butter fish and cottids. The Cormorant tends to feed more on the bottom, as its diet consists very largely of flatfish (Steven 1933; Mills 1969). However, the Cormorant occurs in Loch Ewe in very small numbers, the ratio of Shags to Cormorants being 25 to 1.

Of the 126 fish taken from the Shag stomachs, only 40 (32%) were food fish. As half of these were herring, and as Shags can have little effect on large shoals of herring, unless present in large numbers themselves, one can conclude that in Loch Ewe this bird is a danger neither to plaice stocks nor to fisheries in general.

Acknowledgments

I should like to express my gratitude to Dr C. E. Lucas, Director of the Marine Laboratory, Aberdeen, for making available the field station facilities at Loch Ewe. I should also like to thank Dr Rex Edwards of the Marine Laboratory and Eddie Smith, skipper of the research launch *Navicula*, for helping me to obtain birds for this study.

Summary

Examination of the stomachs of 79 Shags from Loch Ewe showed that the fish most frequently taken were herring, saithe, cod and sandeels. Flatfish formed only a very small part of the diet. The Shag's daily food consumption in winter was roughly estimated at 250 gm, 13½% of its average body weight. It is concluded that Shags are not a danger to plaice stocks in Loch Ewe.

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The food of the Cormorant at two breeding colonies on the east coast of Scotland

DEREK MILLS

Department of Forestry and Natural Resources
University of Edinburgh

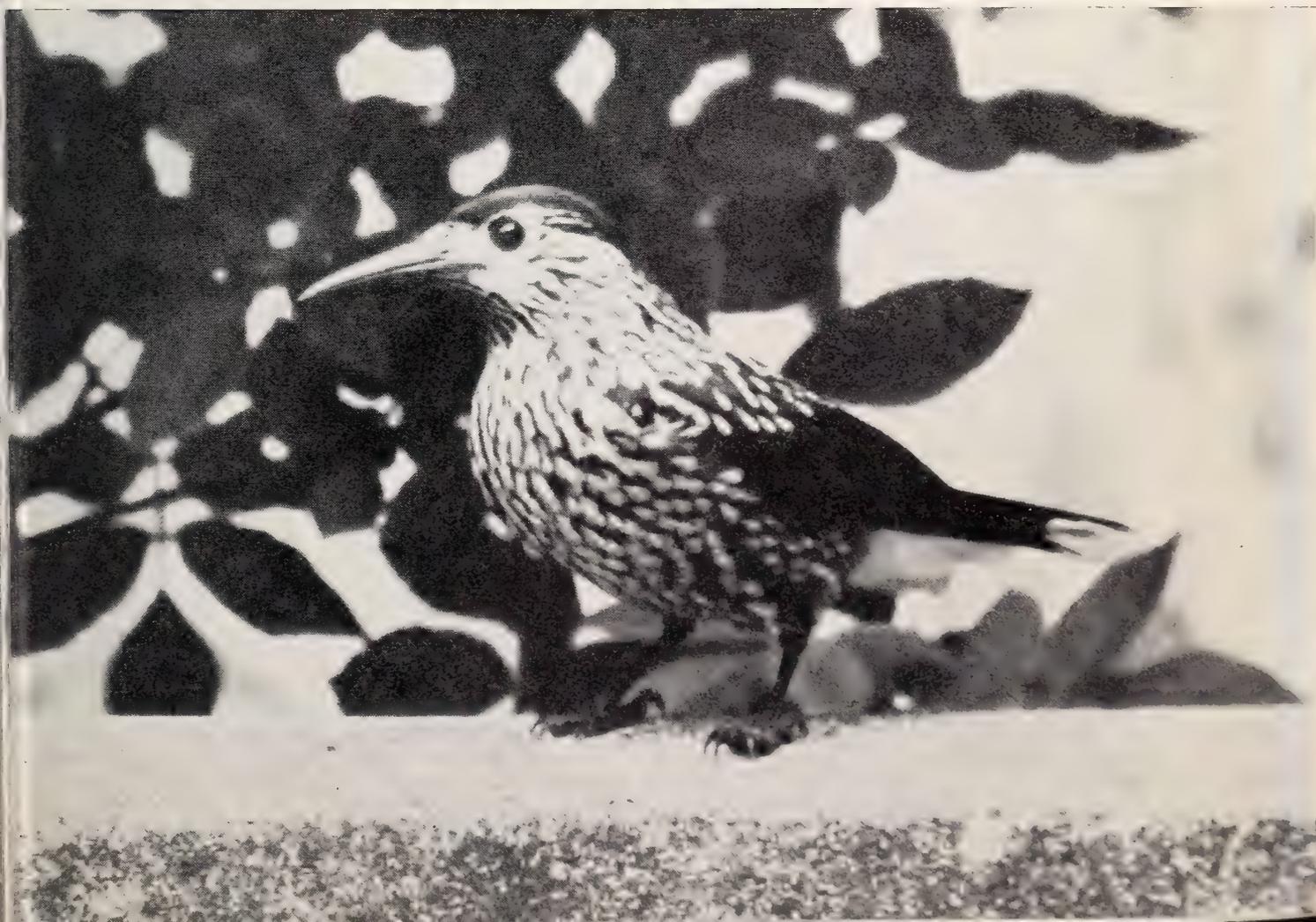
Introduction

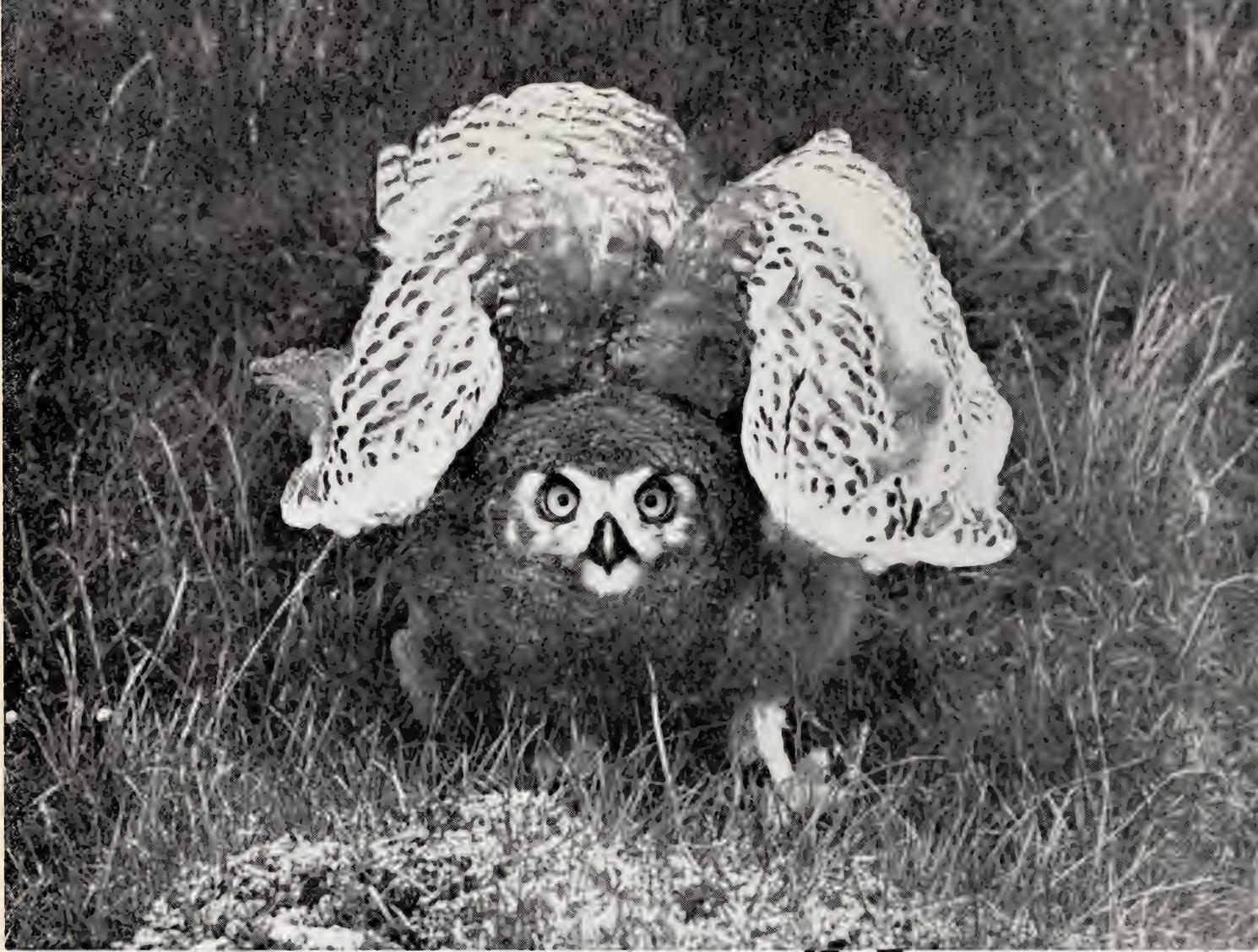
Information on the food of Cormorants *Phalacrocorax carbo* in Scotland has been mainly confined to records from inland and estuarine waters (Mills 1965). The marine food of Cormorants around the shores of southwest England has been well investigated by Steven (1933); but only occasional reference has been made to their diet in Scottish coastal waters (Gross 1947, 1949; Mills 1965). For this reason it was felt that the limited information on the food of Cormorants at two breeding colonies on the east coast of Scotland should be recorded.



PLATE 16. Nutcracker, Shetland, 22nd-23rd August 1968. Note the heavy bill, white under tail-coverts and border to tail, and bold speckling, like an enormous plump Starling (see p. 290).

Photographs by Dennis Coutts







PLATES 17-18. Breeding Snowy Owls, Fetlar, Shetland, 1967 and 1968, showing the adult male, the more heavily marked female with chicks, an aggressive display by a young bird, and a first-winter female on a fence post in December (see p. 244).

Photographs by R. J. Tulloch





PLATE 19. (a) Nutcracker, Shetland, 22nd-23rd August 1968, with a House Sparrow (page 290). (b) Brünnich's Guillemot found dead, Unst, Shetland, 20th March 1968 (see page 285).

Photographs by Dennis Coutts



Methods

The two breeding colonies or rookeries from which the data were collected were situated on the Ord, a sea cliff on the southern boundary of Caithness, and on the Lamb, a small island off North Berwick at the mouth of the Firth of Forth and close to the south shore. The data originated from two sources: ejected meals collected when the birds vomited when disturbed; and pellets composed of the lining of the stomach, in which there are indigestible remains such as otoliths (ear-stones), shells, crab claws and stones.

The ejected meals contained totally undigested fish as well as partly digested ones. Van Dobben (1952) describes the process of vomiting and digestion of food by the Cormorant in the Netherlands in some detail. The samples of ejected food used for this study were not collected systematically and can therefore give only a qualitative assessment of the bird's diet at these sites during June and July.

The pellets are oblong and vary in length from 4 cm to 7 cm. Each one is surrounded by a mucous membrane. Van Dobben (*loc. cit.*) found that the lining of the stomach is pushed off and envelops the undigested remains of the food. After production of the pellet a new lining is formed to receive a new meal and to be pushed off in its turn. Van Dobben draws attention to the fact that pellet formation does not appear to occur in the Shag *P. aristotelis*, and he also points out that while Lumsden & Haddow (1946) found otoliths in the faeces of the Shag he never observed solids in those of the Cormorant. Furthermore, both Lumsden & Haddow (*loc. cit.*) and Mills (1969) found large numbers of otoliths in the stomachs of Shags, but Madsen & Spärck (1950) never found accumulated otoliths in the stomachs of Cormorants in Denmark and the author never found them in the Cormorants he examined from Scottish inland waters (Mills 1965).

All whole fish were measured. The otoliths were identified from the paper by Scott (1906), and in some cases it was possible to determine the age of the fish from these.

Results

The food organisms found in the ejected meals at the two colonies are listed in tables 1 and 3, and details of the otoliths found in the pellets are given in tables 2 and 4. As the ejected meals were collected at random it is not known whether the numbers of each fish species recorded give a true picture of the actual proportions of these species taken. However, it does seem evident, looking at the data on vomits and pellets together, that flatfish are the most important food

Table 1. Food of Cormorants at the Ord, Caithness, June and July 1965

Food organism	Specimens
Crustacea	
Edible crab <i>Cancer pagurus</i> L.	2
Spider crab <i>Hyas araneus</i> L.	2
Fish	
Sandeel <i>Ammodytes</i> spp.	35
Dab <i>Pleuronectes limanda</i> Day	3
Sea scorpion <i>Cottus</i> spp.	3
Sea trout <i>Salmo trutta</i> L.	2
Mackerel <i>Scomber scombrus</i> L.	1
Pollack or lythe <i>Gadus pollachius</i> L.	1
Butter fish <i>Pholis gunnellus</i> L.	1
Three-bearded rockling <i>Motella tricirrata</i> Day	1
Lumpsucker <i>Cyclopterus lumpus</i> L.	1

Table 2. Details of otoliths found in Cormorant pellets at the Ord

Fish species	Otoliths
Dab <i>Pleuronectes limanda</i> Day	28
Plaice <i>P. platessa</i> L.	7
Long rough dab <i>Hippoglossoides limandoides</i> Day	2
Unidentified flatfish	35
Saithe <i>Gadus virens</i> L.	6
Poor cod <i>G. minutus</i> L.	1
Mackerel <i>Scomber scombrus</i> L.	2

Table 3. Food of Cormorants at the Lamb, Firth of Forth, July 1965

Food organism	Specimens
Dab <i>Pleuronectes limanda</i> Day	10
Plaice <i>P. platessa</i> L.	2
Viviparous blenny <i>Zoarces viviparus</i> (L.)	8
Sea scorpion <i>Cottus</i> spp.	5
Butter fish <i>Pholis gunnellus</i> L.	3

Table 4. Details of Otoliths found in Cormorant pellets at the Lamb

Fish species	Otoliths
Dab <i>Pleuronectes limanda</i> Day	4
Plaice <i>P. platessa</i> L.	1
Unidentified flatfish	2
Cod <i>Gadus morrhua</i> Day	4
Saithe <i>G. virens</i> L.	2
Pollack or lythe <i>G. pollachius</i> L.	1
Whiting <i>G. merlangus</i> L.	1

item and that the dab *Pleuronectes limanda* is the flatfish most frequently taken.

The fish recorded include those frequenting a sandy bottom (dabs, plaice and sandeels) and those frequenting a rocky sea floor (butter fish, blennies, sea scorpions, wrasse, saithe and lythe). The average lengths of some of the fish taken

were: butter fish 14 cm, sea scorpion 15 cm, dab 18 cm, plaice 22 cm, and viviparous blenny 22 cm. The largest fish recorded was a lythe 38 cm (15 in) long.

Other objects found in the pellets were the teeth of wrasse, cranial bones and vertebrae of fish, claws of crabs, and dog whelks *Nucella lapillus*, top shells *Gibbula cineraria* and stones.

It was possible from some of the otoliths in the pellets to determine the age of 36 flatfish, and this information is summarised in table 5. It would appear from the table that flatfish less than two years old are not eaten. However, it is known

Table 5. Ages of flatfish taken by Cormorants, identified from their otoliths
Number of fish of age (years)

	2 - 3	3 - 4	4 - 5
(a) from the Ord			
Dab	4	17	3
Plaice	2	3	0
Long rough dab	0	2	0
(b) from the Lamb			
Dab	3	1	0
Plaice	1	0	0

that the Cormorant will take small fish (Mills 1965), so that the absence of small otoliths may be because they are broken down by digestive juices.

Discussion and conclusions

This limited study tends to confirm the finding of Steven (1933) that flatfish form a large part of the Cormorant's diet. Furthermore, when this diet is compared with that of the Shag (Steven 1933; Lumsden & Haddow 1946; Mills 1969) the study reveals the similarities and differences in the food of the two species, and shows that they are not in competition with one another for the major part of their food (see Lack 1945).

The Cormorant is eating fish of commercial value, namely flatfish, and while it is unlikely that it will have any serious effect on, say, plaice stocks in open coastal waters, there is the possibility that if present in large numbers it could seriously affect flatfish stocks in more enclosed sea lochs, particularly those modified for fish farming.

Acknowledgments

I should like to thank Dr Ian D. Pennie and R. W. J. Smith for collecting the food material and Dr Bennet B. Rae, of the Marine Laboratory, Aberdeen, for identifying and ageing the flatfish otoliths.

Summary

An examination of food material in the form of ejected meals and

pellets revealed that flatfish, particularly dabs, are one of the most important food items of Cormorants at the Ord and the Lamb in June and July. Other fish recorded were sandeels, saithe, lythe, butter fish, sea scorpions and viviparous blennies. It is concluded that Cormorants, if present in large numbers, might have serious effects on flatfish stocks in the more enclosed Scottish sea lochs.

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Aberdeen University fieldwork on St Kilda in 1968

A. ANDERSON, G. BIRNIE, H. E. M. DOTT and
M. MARQUISS

A small seabird study group spent from 13th to 25th July 1968 on the main island of Hirta, St Kilda, with one day on the island of Dùn. The party consisted of J. Mojsiewicz and the four authors, and was led by A. Anderson. We were later saddened to learn of the death of Julian Mojsiewicz on 25th October 1968. He was chief technician in the Zoology Department and came along as our expedition photographer. His cheerfulness and willing assistance added much to the success of the trip.

The programme of seabird studies, which was carried out in its entirety, included a census of Fulmars on Hirta and Dùn, and studies of the distribution and abundance of seabirds on Hirta and Dùn, and of the diurnal activities of four seabird species. No boat was available for sea counts and censuses were carried out on foot only.

In addition, a census of Soay sheep on Hirta was completed on 22nd July (the results are lodged with the Nature Con-

servancy, Edinburgh), and a collection of sheep bones, for assessment of Strontium 90 content, was made by J. Mojsiewicz for the Rowett Research Institute, Aberdeen.

We are indebted to the SOC, the Seabird Group, the SRC of Aberdeen University, and the Carnegie Trust, all of whom helped to finance the work. The Nature Conservancy kindly provided accommodation on St Kilda and arranged for our sea transport by army tank-landing craft. AA personally wishes to thank the National Trust staff (Edinburgh office) for getting him to St Kilda by boat, along with their own work party.

Fulmar census (A. Anderson, G. Birnie). The Fulmar population of Hirta was previously censused in 1956 by A. Anderson, and again in 1961, giving totals of 19,400 and 19,700 occupied sites respectively. The July 1968 total was 23,100, a 17% increase on the 1961 one. That a real increase has taken place over these seven years cannot be stated dogmatically, since nothing is known of egg or chick mortality and consequent possible desertion of the sites by the failed breeders in the different years. But, from knowledge of the habits of failed breeders elsewhere, it seems unlikely that reduced egg or chick mortality in 1968 accounts for the higher figure. It is noteworthy that quite considerable changes in numbers on certain sections of cliff have taken place since 1961. It is hoped that the census will be repeated in 1969, and thereafter at intervals of 5 to 10 years.

Seabird distribution (H. E. M. Dott, M. Marquiss). A survey of breeding seabirds, other than Fulmar, was made on Hirta. Dùn was surveyed during a visit on 21st July. The coastline was explored thoroughly on foot, and breeding areas were plotted on a map. The numbers of breeding birds were estimated where possible (nests for the Kittiwake), but only the extent of the colony was noted in hole-nesting species like the Puffin. It is hoped that this preliminary survey may be of value for Operation Seafarer in 1969.

Diurnal rhythms of seabirds (A. Anderson, G. Birnie, H. E. M. Dott, M. Marquiss). In censusing seabird colonies it is necessary to know whether numbers at the breeding sites fluctuate during the day. We chose to examine four species—Guillemot, Kittiwake, Puffin and Fulmar.

A mixed colony of Guillemots and Kittiwakes at Glen Bay was selected for study. Two teams of two observed in six 6-hr shifts, keeping the birds in view continuously from 0400 to 2230 hrs BST on 19th July, and from 0500 to 2130 hrs BST on the 20th. For the Guillemot, at half-hourly intervals, total adults on land and the total apparently brooding, and numbers of arrivals and departures of adults during a 5-minute period, were recorded. For the Kittiwake, total adults on

land and arrivals and departures during five-minute periods were recorded. The numbers of eggs and young of both species were counted. Activity was related to time of day, light intensity, tidal cycle and wind velocity. A mixed colony of Puffins and Fulmars on the north coast of Dùn was similarly studied from 0400 to 2300 hrs BST on 23rd July.

Analysis of the data is proceeding, and some differences between the species studied are apparent at this stage. Kittiwake numbers changed little during the day. Fulmar and Puffin numbers showed changes according to time of day. But the marked changes in Guillemot numbers could not be related to time of day or to any other factor.

Puffin numbers were found to be highest in the evening. Observations were therefore made at an accessible Puffin colony at Ruaival to compare such counts with the true breeding population. In an area outlined with pegs and string, the number of used or recently used burrows was ascertained with some accuracy and related to the numbers of Puffins counted there next evening.

It is intended to publish the results of this 1968 fieldwork as soon as analyses are complete.

Short Notes

Some observations on birds at sea off northwest Scotland

On 18th June 1968 I sailed through the Pentland Firth on m.v. *Gullfoss* en route for Iceland. By 8.30 a.m. we were due south of Rora Head, Hoy, and about six hours later we were north of the Rona-Sulisgeir shelf at approximately 59°30'N, 6°W. Our speed was about 15 knots. At intervals there were unexpected increases in the number of birds, the most significant occurring some 50 miles north of Loch Eriboll. The day began with visibility reduced to some 200 yards, clearing to three miles by noon and to five miles by 4 p.m. A hazy sun shone all day and it was warm. The following is a list of the birds seen on 18th June, with a few records (all dated in the text) for the 19th, when we ran into a storm from the north.

Leach's Petrel. 15-20, usually singly or in pairs, the first noted 2 hours W of Hoy.

Storm Petrel. 10-12, all single birds. First noted near Rona.

Manx Shearwater. Many single birds and groups of up to 5. A flock of c.200 flying SW at about 59°N, 5°W.

Great Shearwater. One with 3 Manx Shearwaters about 35 miles NW of Rona. We observed this bird for some 5 minutes in excellent light. It came as close as 200 yards but was generally 600-800 yards from the boat. The white rump was fairly distinct, but the well known fieldmark which the *Handbook* describes as a "conspicuously capped appearance" was not very noticeable. The strong sunlight was shining directly over

my shoulder towards the shearwaters, and this, according to Parrack (*Aids to Identification: Shearwaters and Divers*, Tyneside Bird Club) results in the contrast between the dark head and lighter back being effectively reduced. Nevertheless this feature was noticeable in comparison with the Manx Shearwaters, which appeared a uniform very dark brown. The white tail crescent did not assume the significance which is implied in *Aids to Identification*.

Sooty Shearwater. One with 12 Manx Shearwaters at about 59°50'N, 9°30'W.

Fulmar. Commonest bird and almost always in sight. Up to 20 circling the boat.

Gannet. Small numbers. The only birds seen more than 20 miles from land were immatures until we reached the Faeroes region.

Cormorant. A group of 23, about 30 miles NE of Rona, heading NE.

Shag. A few noted within 20 miles of land.

Ringed Plover. One flying NW at 11 a.m. on 19th June about 62°N 13° W.

Curlew/Whimbrel. One, almost certainly a Curlew, flying SE about 12 miles N of Rona.

Great Skua. Very common in the Pentland Firth when, with visibility 600 yards at best, as many as 20-25 were within sight of the ship. Elsewhere small parties within 20-30 miles of land, but only two single birds further out to sea.

Arctic Skua. Only 3 single birds seen, all in the Pentland Firth.

Great Black-backed Gull. Often one or two birds in sight, but they rarely followed the boat closely.

Lesser Black-backed Gull. Up to 60 followed the boat in the Pentland Firth and there were 35 near Rona. Up to 6 seen in the open sea.

Herring Gull. Numbers similar to Lesser Blackback close to land, but only one seen at any distance from land.

Common Gull. One flying NW at about 60°N, 10° W.

Glaucous Gull. We encountered the first, a juvenile, on the 19th in the Faeroes region.

Kittiwake. Seen on many occasions in groups of up to 50, less common towards the NW.

Arctic Tern. Several near land, and one flying W about 59°40' N, 8° W.

Razorbill. Several seen, especially near Rona. Three seen about 60° N, 9°50' W.

Guillemot. Very common in groups of up to 25.

Puffin. Many, especially close to land. A few seen well out to sea.

Swift. One tried unsuccessfully to land on the boat during the storm of 19th June at about 62° N, 13° W, but after about 40 minutes was swept out to sea by the wind.

ANDREW D. K. RAMSAY.

Green-winged Teal in Lanarkshire

On the morning of 12th April 1968 I was watching duck on the loch at Quothquhan Lodge, Biggar, through my binoculars, when I noticed a drake Teal about 100 yards away which showed no horizontal white line above the wing, unlike the other Teal nearby. On closer inspection I saw there was a slightly off-white and not quite vertical mark in front of the wing. The face pattern was noticeably different from the other drake Teal, where the green and brown markings were clearly divided by an olive line; this bird showed only a slight olive line at the front of the normal pattern. It also

appeared slightly longer and rather 'fluffier'. I had no doubt that it was an adult male Green-winged Teal, a bird I have seen many times in America.

I saw the bird again early on the morning of 14th April and on this occasion had much better views of the off-white markings in front on the wing which appeared to extend from the lower breast to the shoulder at an angle of about 70°. Miss R. S. Hunter came over later that morning and had a good view of the bird, and it was subsequently seen by other observers on 19th April.

ROBERT ERSKINE-HILL.

(This is the ninth Scottish record of this North American subspecies, and the eighth since 1952. All have been drakes. There is one previous Lanarkshire record (*Scot. Birds* 4: 502).—Ed.)

Surf Scoters in East Lothian

On 15th September 1968 we observed a black duck with a conspicuous white patch on the back of the head in flight with Common Scoters off Gullane Point. Closer observation of the bird on the water revealed that it was a drake Surf Scoter. In addition to the nape patch, clearly visible at a considerable distance, there was a transverse band of white across the top of the head. The bill was reddish-pink and orange-yellow.

Like the Common Scoters with which it associated, the Surf Scoter was displaying, holding its head and neck stiffly vertical with the bill depressed. This behaviour drew our attention to the presence of a duck Surf Scoter which might otherwise have been overlooked. Its plumage appeared somewhat sandier than that of the Common Scoter, with off-white facial markings and a buff-white nape, almost as prominent (when seen from behind in strong sunlight) as that of the drake. The drake twice took off for short distances, alighting with wings upraised. We did not see the duck in flight to confirm the absence of a white wingbar, but would probably have seen it if one had been present. Several Velvet Scoters were near but the Surf Scoters did not associate with them.

W. KENNETH RICHMOND, ROBERT OSBOURNE.

(This seems to be the first record for East Lothian. In spite of repeated searches the birds were not seen again, unlike some of the increasing number of Surf Scoters reported in recent years, as summarised in *Scot. Birds* 4: 446.—Ed.)

Goshawk in Shetland

On at least 18 occasions during winter 1967/68 I saw a Goshawk at Kergord, in Weisdale. The bird was also seen

by R. J. Tulloch, A. R. Mainwood, J. H. Simpson, R. Duthie, Dr W. L. N. Tickell and others.

I first found it on 12th November 1967. As I walked through one of a small group of plantations, mostly conifers, I was startled as a biggish bird of prey flapped noisily from a tree about 25 feet overhead. In the brief view I had I saw that it was light buffish underneath with extensive but not heavy barring. On the 19th I stayed outside the wood while Robert Duthie flushed the bird. It flew up from the same place as before, banking sharply and showing heavy barring under the tail.

Ten days later I flushed two female Sparrowhawks from the same place; Bobby Tulloch was there to see them. We moved to a nearby plantation and the Goshawk flew out, followed by a male Sparrowhawk, which looked tiny by comparison. The Goshawk's tail was relatively shorter and its head bigger; the Sparrowhawk's small head gives it a deep-chested look rather like a pigeon. We watched the Goshawk fly on for about three minutes before it disappeared over the hill across the valley. It gave 10-12 wingbeats before gliding for 8-10 seconds during this long and high flight. The tips of the primaries were slightly upturned when it was gliding. Bobby Tulloch commented that in level flight it looked surprisingly like a slow-motion Peregrine.

John Simpson was next to see the bird with me, on 15th December. This time two female Sparrowhawks flew out followed by the Goshawk. Now it flew very slowly along the hill, a mere foot or so above the ground and always looking as if it was about to touch down, in complete contrast to the high flight. I thought it had probably just fed. With continued visits to Kergord I frequently witnessed this mode of flying in the afternoon. In the mornings the bird would either fly out fast or I would not find it. I concluded that this was its time for hunting.

More and more remains of Hooded Crows accumulated near the Goshawk's roost or perching place. I saw it chase a Woodpigeon unsuccessfully once and later found remains of this species with the crow remains. During one visit I surprised the Goshawk flying towards me with a Hooded Crow in its talons. It turned quickly, dropping the prey. The crow, though still in one piece, had the breast eaten away. Sometimes the presence of the Goshawk at its usual roost was indicated by calling Ravens perched nearby. They often mobbed it too when it soared very high over the trees.

From a hide I later observed the Goshawk sitting 20 yards away. Its head was paler than the upperparts, which were brownish with pale flecks in the wings and pale primary

coverts. About four bars showed heavily in the upper tail. Underneath the bird was a pale straw colour, the wings barred and the breast streaked. The vent area was a very pale buff.

I considered it to be an immature male, but would say that one needs to see both Goshawk and Sparrowhawk very well indeed before being confident that a male Goshawk is not just a large female Sparrowhawk. I do not believe that the number of tail bars could be counted accurately, let alone serve as an identifying feature, especially with a bird in flight. However, the diet of Hooded Crows should leave no doubt about the Kergord bird. It was last seen on 8th April 1968 by me.

DENNIS COUTTS.

Apparent distraction display by Golden Eagle

On 8th July 1968 my wife and I were making a routine visit to the eyrie of a pair of Golden Eagles in an Argyll glen. We were expecting the single young eaglet to be leaving the nest very shortly. As we approached the eyrie rock we saw an eagle leave the crag adjacent to the nest and fly over to the opposite side of the glen, which is very narrow at this point. From the colouring this was obviously the adult female, but her subsequent behaviour was very unusual. With outstretched wings slowly beating, the eagle hopped ponderously uphill, pausing at intervals to look at us. We went across the hillside towards her and were able to approach to within 200 yards, at which range the golden feathers at the back of the neck were clearly visible. As we approached, the uphill hopping with outstretched wings had continued, but she now rose and flew over our heads back towards the eyrie side of the glen. When we climbed up the crag to the eyrie and checked that the young eaglet was still on the nest, we saw the two adults flying overhead to the opposite side of the glen again. The female then continued her uphill hopping and wing flapping until we were away from the vicinity of the eyrie. Although this particular pair of eagles is always very bold and much in evidence, this is the only occasion on which we have seen such obvious distraction display.

M. J. P. GREGORY, C. GREGORY.

Little Ringed Plover breeding in Clyde

A pair of Little Ringed Plovers nested successfully in 1968 on a piece of waste ground in the Clyde area, near water. This is the first time the species has been found breeding in Scotland, though it has been spreading north in England.

I found a single bird at this site on 8th May and by the 17th, from its behaviour, I suspected it had a nest. It was calling continuously and was very agitated. A second bird, thought to be the male, was not seen until the 25th, and in spite of considerable searching no nest was ever found. Professor M. F. M. Meiklejohn managed to see one of the birds on 30th May and confirmed the identification.

On 12th June M. Forrester visited the site and both birds flew above his head in an extremely agitated manner, suggesting that hatching might be taking place. Still nothing was found. On the 19th, however, he had a momentary glimpse of a running chick; but in spite of further searches by both of us no more was seen until the 26th, when again a single chick was seen briefly by MF.

On 15th July, at last, after many hours in the area, I was successful in finding the three birds together, and was able to get within 20 yards of the young one and watch it for some time. When I eventually flushed them the birds flew off some way and I could see that the young one was strong on the wing.

DONALD STALKER.

Temminck's Stint in Renfrewshire

On 22nd May 1968 we saw a very small wader fly up from the marsh at Paisley Moss. It flew erratically and towered high in the air before flying off, but it soon returned and landed on a small muddy island, where we were able to approach within 12 yards. We identified the bird as a Temminck's Stint, and spent the next two hours watching it and making notes.

The bird was watched for an hour and a half the following morning by R. A. Jeffrey and ourselves, and further notes were made. In the afternoon RAJ, IG and H. Galbraith saw it again, and in the evening the bird was shown to D. J. Norden, who at once confirmed our identification.

A nearby Pied Wagtail was the only bird we were able to use for comparative purposes. The birds were about the same in body length, but the wagtail was much slimmer. The stint appeared much smaller than a Dunlin, and indeed was so tiny that we sometimes had difficulty in finding it against a muddy background. It was a silent bird, and was only heard calling at 2030 hrs on the 23rd when it rose without warning and flew off, giving a continuous, cricket-like twitter *tirrrirrrirrrr*.

The following is from our detailed notes:

Round head with high forehead, light supercilium not always obvious; streaky grey head and breast, paler on centre of breast, and extending

into slightly browner mantle; wing feathers grey-brown with creamy buff margins; some scapulars very dark brown with buff margins giving scaly appearance; thin white wing-stripe; underparts pure white; tail white with thick black centre; dark or black eye; short black bill; greenish-brown legs.

After seeing this bird we are convinced that the bird we saw at Paisley Moss on 21st May 1964 (*Scot. Birds* 4: 89) was a Temminck's Stint, although the record was not accepted at the time. Except that it did not tower, the 1964 bird was exactly the same as the 1968 one.

GEORGE T. WHITE, IAIN GIBSON.

Early Pectoral Sandpiper in Morayshire

On 15th July 1967 at an inlet at Findhorn Bay my attention was attracted to a wader I did not recognise. The bird flew about five yards and alighted near a Common Sandpiper, when I saw it was slightly larger than that species. I watched it through binoculars before it flew away completely, weaving slightly as it took off and uttering a Budgerigarlike *chirrit* several times.

The following description was taken, and from this the bird was identified as a Pectoral Sandpiper:

Side of head very pale buffish, crown darker brown; noticeable broad dark grey-brown breast-band ending abruptly and contrasting with white underparts; back spangled very dark brown and buff, similar to Reeve; no noticeable wing-bar; tail with dark blackish central feathers and white flashes at sides, similar to Ruff; bill Dunlin-like and very slightly decurved, blackish with suggestion of light patch at base; eye dark; legs orangish or orange-yellow.

TERRY GRANT.

(The Pectoral Sandpiper has now been recorded in Scotland on about 18 occasions, 11 of them between 1959 and 1967. This record is the first for the Moray Basin and the date is nearly four weeks earlier than any of the others, which fall between 10th August and 24th November.—Ed.)

Gull-billed Tern in East Lothian

On 22nd March 1968, on the west side of Aberlady Bay, I saw what at first seemed to be an immature Black-headed Gull. However, I soon realised that it was only two-thirds as big as a nearby adult of that species and had a black bill and dark greenish-black legs.

It was rather like a Sandwich Tern but was longer-legged and had a stouter, deeper bill and no black cap, the crown being white, with a black mark on the ear coverts. The back and scapulars were pale grey, with the tail very pale grey and the primaries noticeably whiter; the underparts were pure white.

The bird had a restless habit of frequently flicking its wings. It preened for a while before settling down on its breast facing into the wind, but it was later disturbed by two Shelducks and flew off. In flight there was no black visible on the primaries and while the tail showed a slight fork this was not as pronounced as in a Sandwich Tern.

I identified this bird as a Gull-billed Tern in winter plumage. It had possibly reached Aberlady as a result of easterly winds on preceding days.

A. MACDONALD.

(The three previous Scottish records of this species are of single birds in Orkney on 7th May 1913 (*Scot. Nat.* 1913: 154), East Lothian on 11th September 1960 (*Scot. Birds* 1: 335) and West Lothian on 3rd September 1966 (*Scot. Birds* 4: 448). March is an unusually early date for Britain, but Bannerman (*The Birds of the British Isles* 11: 124) notes that the species returns to its European breeding grounds in late March and in April.—ED.)

Guillemot calls

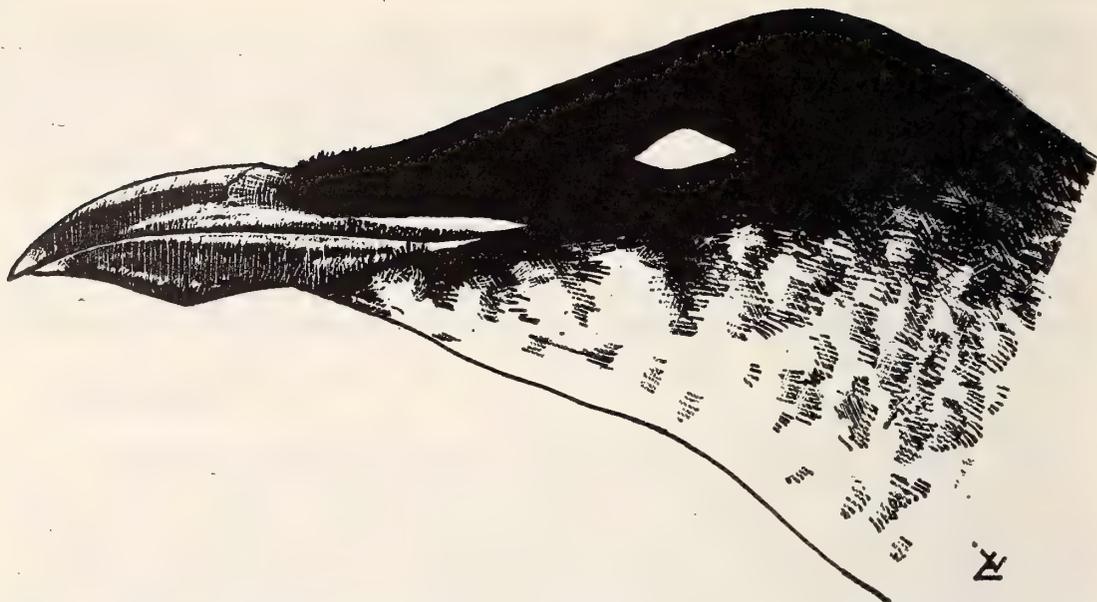
Several times last autumn, when fishing from a dinghy a mile north of Portsoy, Banffshire, I noted two Guillemots at the Codling Hole—a small area of sea with a rocky bottom suitable for line fishing. On 26th and 27th October 1968, days of flat calm, I heard one or both of the birds calling while floating on the water—a loud *kuk kuk kuk kuk*, like a Red-throated Diver but slower. The usual growling *aar aar aar aar* was also heard twice on the 27th. Two Guillemots were at the same spot on 17th November in moderate conditions, but no call was heard. There seems to be a lack of published information about calling from the water by this species.

J. EDELSTEN.

Brünnich's Guillemot in Shetland

On 20th March 1968, following a week of southwesterly gales with sleet and snow showers, I took the first opportunity to check the beaches for dead birds. At Norwick, in Unst, I came across a freshly dead guillemot which, from its black-and-white plumage and short deep bill, I took to be a Brünnich's Guillemot.

I sent the corpse to the Royal Scottish Museum, where its identity was confirmed by I. H. J. Lyster, Dr W. R. P. Bourne, Dr J. Coulson, M. J. Everett and J. J. D. Greenwood, and the skin preserved as a study specimen (reg. no. 1968.23). The following description of the bird has been compiled from my



own notes and from those made by I. H. J. Lyster, and includes comments by Dr Bourne.

Forehead, crown and nape black, lacking whitish patch behind eye of winter-plumaged Guillemot; ear coverts and sides of throat white with blackish tips to many feathers, especially upper ear coverts; chin white with black feathers to edge of lower mandible; throat, breast, flanks, belly, under tail-coverts, axillaries and wing linings white; upperparts, wings and tail black with pale blue-grey tinge noticeable in certain lights; inner web of primaries paler with whitish edge; tips of secondaries white; comparatively dark shafts to primaries (white in Guillemot; even darker in Razorbill); rather prominent dark bases to longer under wing-coverts; bill black, tipped whitish-horn, with upper mandible yellowish at gape and fairly prominent bluish-grey horny ridge along it from nostril to gape; legs and webs orange-yellow with black joints when found, fading later to horn yellow-brown with darker joints; iris deep chocolate-brown with black pupil when found; wing 212 mm flat; tail $48\frac{1}{2}$ mm; tarsus 36 mm; bill $36\frac{1}{2}$ mm from feathers, depth at nostril $13\frac{1}{2}$ mm. On dissection found to be female with ripe ovaries; well fused sutures of skull might suggest it was adult.

F. J. WALKER.

(This is only the second satisfactory record of this northern species in Scotland, the first being a female picked up in East Lothian, in rather high condition, on 11th December 1908, and now in the Royal Scottish Museum (*Ann. Scot. Nat. Hist.* 1909: 75). Both the register (no. 1909.134) and the label on the skin give the date as 10th. It is likely that other Brünich's Guillemots occur off the Scottish coast and are not identified, but care is needed to distinguish them from northern forms of the common Guillemot. The head markings, dark upperparts and comparatively short, thick bill with a prominent more or less whitish ridge from below the nostril to the gape are the main features in the field, while such characters as the darkish shafts of the primaries and the comparatively dark bases to the longer under wing-coverts may aid identification in the hand. It may be noted that ac-

ording to the *Handbook* some first-winter Guillemots may have bills as short as 37 mm, but presumably not as late as mid March; some Guillemots may also show a pale line on the upper mandible (see photograph in *Birds* 2: 56), or even a horny ridge, while the pale line or ridge may vary in prominence in Brünnich's Guillemot. Caution is also needed to avoid confusion with a young Razorbill with its comparatively small bill and white chin. The accompanying sketch of the Unst bird by I. H. J. Lyster illustrates the characteristic bill features of the Brünnich's Guillemot, and we are also reproducing a photograph of it by Dennis Coutts (plate 19).—Ed.)

Little Owls nesting in Midlothian

A Heron fishing, a couple of Moorhens scurrying into the long grass, a Dipper darting upstream, a Grey Wagtail flitting from rock to rock: these sights are typical on the small burn beside which I live, only a few miles inland from Edinburgh. Part of this burn runs through a belt of mixed sycamore, ash, beech, elm, alder and conifers. In the late evenings of summer 1968 the more usual bird sounds were drowned out by a very noisy family of Little Owls living in the trees along the burn.

I did not find the nest, nor do I know exactly when the owlets left it, but their curious, persistent 'squeezing' cries first attracted me to investigate on a warm, still evening in early May. I heard the *kleep kleep* calling of one of the adults, and soon saw it gazing at me from a dead stump 50 yards away. It flew off, and shortly afterwards I found three owlets about 20 feet up in a sycamore, one with its back to me but the others staring at me and wobbling their heads about in a curiously disjointed way—in the manner of those toy animals one sees in the rear windows of some cars. From the voices of the parents and the young, and from the small size and plumage of the adult, I had no doubt that these were Little Owls.

I saw and heard the owlets frequently over the next two months. There were certainly four of them, perhaps more. They flew more frequently, and ranged further and higher in the tree canopy, and gradually their voices became stronger. The parents were seen more rarely, but occasionally they called well after dark, and once or twice I saw them quite early in the evening, bounding along as they flew back towards their young, presumably with prey for them. By mid July I saw the owlets only occasionally, and they were probably moving still further afield.

IVISON S. WHEATLEY.

(This is the first breeding record for Midlothian. A series of recordings of the young birds calling was made by W. Brotherston.—Ed.)

Spring and summer food of Tawny Owls in Edinburgh

Between 26th April and 6th June 1968 I collected and analysed 100 Tawny Owl pellets from a roost at Southfield Hospital, Liberton, Edinburgh. A pair of owls used the same tree regularly, and as they were often seen sitting on opposite sides of the trunk I assumed they were not breeding. Their probable hunting territory comprised mixed woodland, hedge-row, fields (grass and crops), gardens, lawns and roadside vegetation, thus offering a wide selection of potential prey.

In the analysis, I identified mammals from their skulls and jaws, aided by Lawrence & Brown (*Mammals in Britain, their Tracks, Trails and Signs* 1967), and bird remains were identified from their skulls by I. H. J. Lyster of the Royal Scottish Museum. I was thus able to calculate the minimum number of individuals of each species and attempt a quantitative prey analysis. The results are tabulated below, and follow the system used by Southern (*Ibis* 96: 384-410) where a 'prey unit' is taken as the mean weight of a small mammal of 20 gm; thus a rat weighing 100 gm equals five prey units.

Analysis of Tawny Owl pellets by number of individuals of each prey species and number of prey units (see text)

	Individuals		Prey units	
	Number	Per cent	Number	Per cent
Common shrew	6	5.0	3	2.4
Water shrew	1	0.8	$\frac{1}{2}$	0.1
Short-tailed vole	20	16.7	20	13.6
Bank vole	12	10.0	12	8.2
Wood mouse	40	33.3	40	27.3
Brown rat	8	6.7	40	27.3
Starling	1)			
	) 5	4.2	5	3.4
Thrush sp.	4)			
Bullfinch	5)			
	) 26	21.6	26	17.7
Greenfinch	6)			
House Sparrow	15)			
Beetle sp.	2	1.7	—	—
	120	100.0	146 $\frac{1}{2}$	100.0

A few fibrous pellets containing no bone or hair were found. Microscopic examination revealed the presence of earthworm chaetae and numerous very small grains of sand. These pellets are not taken into account in the table.

The food taken by different individuals will of course depend on the relative proportions of suitable prey in the habitat, but this pair seems to have taken an unusually high toll of birds, presumably from roosts.

M. A. MACDONALD.

Bee-eater in Ayrshire

A Bee-eater was seen by Lt.-Col. G. Borwick at Swindridge Muir, near Dalry, Ayrshire, from 14th to 18th May 1968. I watched the bird for about two hours on 18th and took the following description:

Forehead from a distance looked yellow, but when closer appeared whiter; crown and nape reddish brown; ear coverts, throat and neck brilliant yellow, separated from breast by thin black neck band; black eyestripe from base of bill to nape; breast, belly and flanks dark turquoise; mantle reddish brown; scapulars apricot; lesser and median coverts light turquoise; greater and primary coverts reddish brown; primaries and secondaries dark turquoise; rump and tail dark turquoise; elongated central tail feathers and long pointed wings very noticeable in flight; bill at least as long as head, black, slender, decurved at tip; short dark legs; eye reddish.

The bird spent most of its time perched high in some chestnut trees, using this conspicuous vantage point for frequent sallies after insects. This is the first Ayrshire record of the species.

D. J. NORDEN.

Golden Orioles displaying in Kinross-shire

On the evening of 11th June 1968, while searching for a Blackcap's nest in a small plantation near the River Devon, about 1½ miles east of Dollar, I saw a pair of Golden Orioles.

The birds first appeared in a fast, shallow weaving dive which eventually brought them into a birch tree not more than 20 yards from me. I could only see the upper half of the male, but his bright yellow head and neck, black wings, and black tail with its yellow flashes, made identification clear beyond all doubt. The female was slightly obscured by the male, but in the evening light her green back and grey underside were distinctive, though I did not think that the streaking on her breast was as pronounced as some illustrations suggest. Both birds had strong-looking reddish-brown bills.

For a moment or two they sat looking around, and then began a very beautiful display. The male began by thrusting his head and neck upwards with a twisting motion against the side of the female's neck, each stroke taking perhaps 1½ seconds, with the head turned through about 90° along its longitudinal axis. The female's reaction was, at first, little more than a gentle rocking sideways of her head. After a brief pause the male began again, more vigorously this time, and soon the hen was responding fully by thrusting and rotating her head in time with his. Eventually she partially opened her bill, but made no sound that I could hear.

The display continued for a few seconds more and then stopped abruptly as if by mutual consent. The female then flew off towards the southeast, the male following shortly afterwards.

IAIN C. MUNRO.

(This is the first record for Kinross. The "fast, shallow weaving dive" no doubt refers to the typical aerial courtship-chasing of this species, as described on p. 83 of vol. 1 of *Bannerman's Birds of the British Isles*; but in a search of the more obvious places we have not found an account of the ensuing display described in this note.—Ed.)

Rook hiding food

On the evening of 20th June 1968 an adult Rook landed on our small lawn, marched up to a flowerbed, and thrust a large beakful of food under a rose bush. It then made a mound of small clods of earth over the cache. I investigated after the bird flew off and found three finger-sized pieces of currant bun.

RONA S. HUNTER.

(Food hiding by various corvids is described in *Brit. Birds* 61: 228-229, 417-418, but there are few records of Rooks showing this habit.—Ed.)

Nutcracker in Shetland

About 4.30 p.m. on 22nd August 1968 the police telephoned to tell me that a brown-and-white bird like a small crow was outside Lerwick Police Station. I found it in a small elder bush in the neighbouring garden, but all I could see through the leaves was the tail—dark with a white end—and I wondered if it was merely a Collared Dove. Then, as it moved, I saw the head side-on, almost as big as a Rook's, with a huge bill. Immediately I recognised it as a Nutcracker.

Hoping the bird would emerge onto a low wall, I focussed my camera while my wife approached from the rear of the bush. When she was less than six feet from it the bird flew forward the necessary yard. I took two pictures before it hopped with its large clumsy feet together and flew to a high wall. As it took off again it showed white under tail-coverts. The short, broad wings carried it straight off in strong flight.

Next day it was eating a House Sparrow when I found it in a thick clump of lupins near the same bush. Another twice it actually flew from the same elder, and each time it was carrying another House Sparrow. One was entirely eaten. The Nutcracker carefully pecked the bird's inside out as it held it

in its claws while perched in a sycamore. It also perched on low walls and on poles.

It was about Jackdaw size, but appeared more like an enormous plump Starling with much white about it. The big head was chocolate-brown on top, the face mostly white. Mantle and breast were brown, with very obvious white spots. The wings were blackish with a blue sheen, and the tail the same with a green sheen and a broad white band at the tip. From behind, the folded wings showed dark like a Hooded Crow's. There was a brilliant white area on the under tail-coverts. Bill and legs were black, and both were big and clumsy. The eyes were very big and dark. The bird did not call.

It was not seen after the 23rd. I was successful in getting several good photographs of the bird, and some of these are reproduced in this issue (plates 16, 19).

DENNIS COUTTS.

(This bird, apparently the only one found in Scotland in 1968, arrived at the beginning of the peak of a rather early (but see *Brit. Birds* 61: 349) and widespread irruption into Britain that began on 5th August and brought something approaching 200 Nutcrackers to England, especially East Anglia and Kent. Most were evidently of the usual Slender-billed race, the eruptive one, from east Europe and west Asia. The scale of arrivals in England is quite unprecedented, about twice as many birds as have been recorded in all time before. The birds were also recorded all over northern Europe, but full details are not yet available (*Brit. Birds* 61: 428, 473). Only three records are given in the *Birds of Scotland*, and there were only six in Britain in the ten years before 1968.—Ed.)

Blackbird and Wren brooding Blackbird chicks

M. Jack informed me of a most unusual situation at a Blackbird's nest he had under observation during 1967.

On four occasions when he looked at the nest, which was in a shrub in his garden, he saw what appeared to be a pair of bright eyes peering out from beneath the sitting female. On the fifth occasion he investigated, and when the Blackbird left the nest he found a Wren sitting on five very young Blackbird chicks. The female Blackbird seemed to have taken all this in her stride, but the Wren was not seen at the nest again, though it had almost to be pushed off for the contents to be examined.

R. J. W. SHAW.

Rose-coloured Starlings in Berwickshire, East Lothian and the Outer Hebrides

David Bridgewater told me that he had seen an adult Rose-coloured Starling feeding with a flock of Starlings in a cut hayfield at Edrom Berwickshire, on 29th June 1967. He described the bird as having black head, wings and tail, and otherwise pink plumage, but he also mentions that it looked black-and-white in flight.

Crawford Smith saw what was probably the same bird in the same place on 25th July, with a large flock of Starlings, and again on 7th September.

W. M. LOGAN-HOME.

On 31st July 1967, and again on 4th August, I saw an adult Rose-coloured Starling at Ormiston, East Lothian. It was readily identified by its pink plumage and black head, wings and tail. P. J. B. Slater, who saw it on 1st August, adds that the bird showed a dark line on the scapulars parallel to the base of the wings.

I understand from local residents that this bird had been feeding with Starlings in the strawberry fields in this area since at least 30th June. Alistair Macdonald reports that it was even caught at a nearby aviary, but it escaped again. Everybody who saw the bird said it was very tame, and it was no doubt an escape. There are many bird fanciers in the Tranent area.

T. FORSYTH.

I had excellent views of an adult Rose-coloured Starling between Back and Gress, near Stornoway, on 2nd August 1967. It was feeding among cattle in longish machair in company with two Starlings, and later flew off and landed on the back of a grazing cow. The bird was pinkish-rose in colour, with black head, tail and wings, showing just a suggestion of a crest when perched on the cow. Its behaviour was similar to that of the two Starlings in every way.

LENNOX H. CAMPBELL.

(These three records have been accepted by the Rarities Committee, but Rose-coloured Starlings are imported in some numbers as cage-birds, and it becomes increasingly difficult to know whether any seen in Britain are truly wild birds.—ED.)

Arctic Redpolls in Shetland

On 19th February 1968 at Symbister, Whalsay, during a period of prolonged snow, I watched a redpoll feeding on

crumbs to within eight feet of my window. I was later able to watch it, with and without binoculars, down to four or five yards as it moved around between the ground and some small bushes.

It was a typical redpoll, although rather small in size, with a crimson forehead and black chin. The underparts were whitish, with fine dark streaks on the breast and flanks. The head with its whitish eyestripe and the upper back and shoulders were very pale, and together with very light, conspicuous wing-bars gave the whole bird a 'frosty' appearance when at rest. In flight, in perfect light, the wing-bars showed as a light area on the open wings, and the white rump was very conspicuous.

On 14th and 19th December 1965, also at Symbister, I watched a redpoll feeding within 100 yards of my home. Using 12 x 50 binoculars I was able to make notes and compare these with descriptions in the *Handbook*, and I identified this bird as an Arctic Redpoll. It was very similar to the bird already described, but had a broader, more pronounced eyestripe, and whiter underparts with only a few dark streaks on the flanks. This bird seemed a little larger too, and at rest the white feathers of the underparts curling over the wing-edges gave it a very light appearance, with the wing-bars less obvious than in the 1968 bird. The white rump was again outstanding in flight.

I am familiar with Redpolls in Shetland—including Mealy Redpolls—and after examining skins am confident that both the birds described above were Arctic Redpolls.

J. H. SIMPSON.

(These birds have been accepted by the Rarities Committee as showing the characteristics of Arctic Redpolls, which, while they have been recorded from Fair Isle a number of times in autumn, have rarely been identified elsewhere in Shetland.—Ed.)

Recent News

ANDREW T. MACMILLAN

Edinburgh birds. For a capital city of some 500,000 people, Edinburgh can provide unexpectedly exciting birdwatching within its boundaries. On 24th November a **Kingfisher**—now a rarity in Scotland, though it used to frequent the city—was found on the Water of Leith. Though it foiled most observers it was still there nearly two months later.

Numbers of **Great Crested Grebes** off Seafield are the largest

in the country, and there were over 500 at the turn of the year. Even higher numbers have been noted (*Scot. Birds* 3: 84).

The winter flocks of **Scaup** at the same place are famous, but usually much less than the 33,000 birds estimated by one observer on 22nd December or the 28,000 of another a fortnight later; such numbers are not readily counted and depend a lot on the state of the sea and how far out the birds are.

Goose counts. From M. A. Ogilvie of the Wildfowl Trust we have received a valuable summary of the counts of **Grey Lag** and **Pink-footed Geese** in Britain on 9th-10th November. There were about 60,000 and 65,000 respectively—all but some 1000 Greylags and 10,000 Pinkfeet in Scotland, and some 56,000 of them in Perthshire alone. Though the count of Greylags was up, there was possibly no great change in the number of either species. These figures follow two successive very poor breeding seasons. Flocks of Greylags included under 6% young birds (the least ever recorded), and flocks of Pinkfeet included about 11½% young birds (also the least ever), both following worst-ever percentages in 1967.

Whooper deaths. After heavy mortality last winter in the Blairgowrie and Coupar Angus area (*Scot. Birds* 5: 111), three birds, presumably unfit to migrate, spent the summer on the R. Isla. The local flocks of **Whooper Swans** have not exceeded 21 birds this winter, compared with over 100 in the three previous years, and there are again signs of something wrong with them.

Osprey deaths. In November 1967 a ringed young **Osprey** from the third Scottish eyrie was recovered in Spain near Seville (*Scot. Birds* 5: 172). From preliminary reports it seems that one of the 1968 brood from the same eyrie suffered a similar fate at the western end of the Pyrenees in Spain just before Christmas.

Green Sandpiper wintering. On the Bowmont at Yetholm a **Green Sandpiper** was present into 1969. Its behaviour was markedly different from that of autumn migrants in the area. When flushed it tended to zig-zag away low and pitch back into cover like a **Jack Snipe** (cf. *Handbook*). Probably a very few winter in Scotland each year, especially in Berwickshire, but recent news is lacking about the Duns area, for which there was a good series of records (e.g. *Scot. Birds* 2: 42, 264).

Irruption species. A few more reports of **Waxwings**, including a suggestion of a very small arrival at the very end of October and in early November, are all that have been notified so far. Further reports of **Northern Great Spotted Woodpeckers**

have come in, and in December a few of these were still to be found in Orkney and Caithness.

Reviews

Galapagos : Island of Birds. By [J.] Bryan Nelson. Foreword by H.R.H. The Duke of Edinburgh. London, Longmans, 1968. Pp.xxii + 338; map, 24 plates (57 photographs) and 56 line drawings. 22 x 15 cm. 50/-.

Islands always fascinate, and remote islands fascinate absolutely. Add to this a particularly interesting fauna, and the visits of Darwin more than a century ago, and the Galapagos archipelago becomes irresistible to naturalists.

When they came to the Galapagos Bryan Nelson and his wife June were no strangers to island life, having spent much of three years on the Bass Rock in the Firth of Forth studying Gannets. The team that solved problems of living and working on the Bass also solved the infinitely greater problems of living on a waterless, uninhabited, lava island in the tropics.

This book is an account of the behavioural and other adaptations of boobies, a frigate bird and an albatross to the particular problems that face them in surviving in a surprisingly variable environment. Other creatures, iguanas, sea lions and owls are discussed for good measure. Here and there through the book, but probably not enough for many people, the author writes of life on a desert island—of a home-made still that supplied up to one gallon of fresh water per day from the Pacific; of the irksomeness of routine jobs about the camp; of periodic severe depression; of the need for other people (not too far away and not too near either). Despite discussions about the need for other human company, when it came to the bit and a strange craft bore down on their solitude, they found it difficult sometimes not to disappear into the booby colony and avoid a meeting, a feeling that Fraser Darling admits to when he lived on Priest Island.

The prime reason for the visit was to study the behaviour of seabirds, particularly boobies. It is always rewarding to work with a group of related species because then differences and similarities in behaviour becomes more meaningful. So it is with Dr Nelson's observations on display, nesting success and feeding methods. The offshore feeders lay small clutches, and this is correlated with the need to transport food long distances; in contrast, the Blue-footed Booby lays 2 or 3 eggs and rears 2 or 3 young, because it has evolved a means of feeding in an inshore niche not used by other seabirds.

Dr Nelson tries on the whole to fit clutch size and brood size into the orthodox mould, namely that clutch size corresponds to the largest number of young that the parents can rear. This works well for some but less well for others; the Gannet on the Bass can rear two young successfully, but lays only one egg. The White Booby lays two eggs, and hatches both; but one young always kills the other **not long after** hatching, achieving, as the author says, a correspondence of brood size with food supply *in anticipation* of food shortage. Does this mean that aggressiveness in nestlings is selected for? More discussion would have been welcome.

Dr Nelson also compares two general approaches to field studies. First, there is the fellow who has a hunch and tries to demonstrate its

correctness. This the author suggests is fine if the hunch is correct. But surely 'hunch' is the same as hypothesis, and if a hypothesis is refuted one learns something. The second approach, followed by perhaps 80 per cent of field workers, including Dr Nelson, is to gather a lot of information and later to try and make some sense of it. He claims that this is a "fairly safe" way. It can be, but it is also fraught with dangers, for, since nature is complex, there will always be several explanations and no means of distinguishing the correct one. In fact the various explanations provide hypotheses which should then be tested.

This aside *Galapagos: Island of Birds* will be enjoyed by amateur and professional ornithologist alike for the wealth of behaviour description and biological information it gives and for the many excellent line drawings and photographs that illustrate it. If the study raises more problems than it solves, what better comment could one have on one's research?

J. D. LOCKIE.

Highland Year. By L. MacNally. London, Phoenix House, 1968. Pp. viii + 117; 32 plates (83 black-and-white photographs). 21½ x 14 cm. 36/-.

This is a book the reader will go back to many times. Every page bristles with action and it is so painstakingly conveyed to us by means of the camera. The pictures should be studied prior to a first reading. They are diagrams and blueprints to the whole Highland landscape of deer, eagle and fox, with badger, Raven and the detested "Hoodie" taking their place along the fringe. There is, most of all, a natural quality in Lea MacNally's pictures. Not for him the hurried dramatic flight from nest or scurry from cover.

There is nothing verbose in the story. The months unfold in chronological fashion, while bird and mammal go about their business. The reader "drops in" on so many interesting little episodes. Man becomes a "peeping Tom."

Here then is a diary; the dates are with nature.

Most of all it is a story, told by a man who lives and works within sight of Loch Ness and Beinn Tee; behind him the Corrieyairack, General Wade's Road and the Monadhliaths.

Lea MacNally: 42 years of age, with more than 20 years of recorded field study—and yet the book is the antithesis of dogmatic generalisation.

This is not to say the book is not full of careful opinion: "It is a very dilatory or unobservant stalker who will let slip this entirely odious bird before she is successful in propagating her rascally race." A text book; a book for the animal and bird lover; MacNally points the way to simple, easily-affordable nature conservancy. Birds and animals involved together, with man intervening in the slightest possible fashion, in an effort to redress, where nature, for a time, has given free rein to the powers of production.

Lea MacNally's problems and his love of nature run hand in hand, as when he says: "Perhaps we should be thankful however; for if the roe rut and the red deer rut coincided one would not be able to enjoy the interest of both, whereas now this is possible. It is most unlikely, however, that this was taken into account when the universal scheme of things came into being, and so the puzzle remains." *Highland Year* itself is no puzzle. I hope it is the introduction to a Highland series. For too long this type of story has been written, expertly and efficiently, by marauding amateurs. We must welcome this study of Highland life by one of the resident professionals.

J. EUNSON.

Letter

SIR,

Golden Eagle calling

I was very interested to read Ian M. MacLean's account of a Golden Eagle calling in North Harris in April 1968 (*Scot. Birds* 5: 173).

On 22nd April 1965 I was looking for an eyrie in Mull when two eagles, an adult and an immature, appeared from behind a hill, soaring together and rolling and scrapping with talons lowered for much of the time. They were soon joined by a second adult and all three soared higher in widening circles until I lost them behind another hill. Shortly afterwards the adults returned and sailed slowly overhead until they were out of sight behind yet another hill. Throughout the whole of this action I heard repeated calling of the kind described by Mr MacLean—my notes refer to the calls as resembling the barking of a Great Black-backed Gull. I was uncertain how many birds were calling, but had the distinct impression that both adults were doing so and suspected that they were chasing off the immature bird.

I have mentioned this matter to several other observers who are familiar with eagles, and while most of them have heard birds calling in this way they all agree that it is an uncommon occurrence.

MICHAEL J. EVERETT.

(Mrs I. Rainier writes that in Perthshire in 1933 she saw two Hooded Crows drive a Golden Eagle from a Scots pine. As it left the tree and flew across the glen out of sight it called for about a minute with dog-like barks. Of the many eagles that she has seen this was the only one heard calling. Seton Gordon records that the eagle is usually silent "but in the excitement of courtship it sometimes utters a shrill yelping cry which can be heard at a distance of a mile or more" (*Birds* 2: 144).—Ed.)

The Scottish Ornithologists' Club

SUMMER EXCURSIONS

Important Notes

1. Members may attend excursions of any Branch in addition to those arranged by the Branch they attend regularly.

2. Where transport is by private cars please inform the organisers if you can bring a car and how many spare seats are available. All petrol expenses will be shared.

3. Please inform the organiser in good time if you are prevented from

attending an excursion where special hire of boats or buses is involved. Failure to turn up may mean you are asked to pay for the place to avoid additional expense for the rest of the party.

4. Please bring meals as indicated (in brackets) below.

ABERDEEN

For all excursions, please notify Miss F. Greig, 9 Ashgrove Road, Aberdeen (tel. 40241, Ext. Old Aberdeen 342, 9 a.m.-5 p.m.) one week in advance.

Sunday 24th August. YTHAN ESTUARY AND LOCHS. Meet Culterty 10.30 a.m. (lunch).

Sunday 19th October. LOCH STRATHBEG (lunch).

AYR

Saturday 26th April. CULZEAN CASTLE, MAYBOLE (by kind permission of the National Trust for Scotland). Leader: S. L. Hunter. Meet Wellington Square, Ayr, 2 p.m. or car park, Culzean Castle, 2.30 p.m. (tea).

Sunday 25th May. HORSE ISLAND, ARDROSSAN (by kind permission of the RSPB). Leader: T. B. Kay. Meet Wellington Square, Ayr, 1 p.m. (tea). Boat fare 5s. There will be a maximum of 11 passengers and members must contact Dr M. E. Castle, 9 Finlas Avenue, Ayr (tel. Alloway 41828), at least 7 days before the excursion.

Saturday 14th June. BALLANTRAE AND GLENAPP ESTATES (by kind permission of the Earl of Inchcape). Leader: R. C. Walls. Meet Wellington Square, Ayr, 10 a.m. (lunch and tea).

Wednesday 18th June. AUCHINCUIVE ESTATE (by kind permission of the Principal, West of Scotland Agricultural College). Leader: Dr M. E. Castle. Meet on drive near bus shelter at main gates of College on the Mauchline road 7 p.m. prompt.

Saturday 23rd August. ABERLADY BAY AND BASS ROCK (by kind permission of Sir Hew Hamilton-Dalrymple). Leader: A. G. Stewart. Meet Wellington Square, Ayr, 10 a.m. and sail from North Berwick 5 p.m. Cost approx. £1. This will be a long excursion (lunch and tea). Members must book seats at least 7 days before the excursion by contacting Dr M. E. Castle (address above).

Sunday 14th September. BARASSIE. Leader: Dr J. Begg. Meet Wellington Square, Ayr, 1.30 p.m. or the Gas Works, Barassie, 2 p.m.

DUMFRIES

Saturday 31st May. DALSCAIRTH AND KIRKCONNEL WOODS AND MERSE. Leaders: B. S. Turner and J. G. Young. Meet Ewart Library, Dumfries, 4 p.m.

Sunday 22nd June. SOUTH KIRKCUDBRIGHTSHIRE. Leader: A. D. Watson. Visit to a map square to search for breeding birds for the BTO Atlas project. Meet Ewart Library, Dumfries, 1.30 p.m.

Sunday 5th October. HOLY ISLAND AND BUDLE BAY. Leader: R. T. Smith. Meet Ewart Library, Dumfries, 9.30 a.m. Own transport arrangements.

DUNDEE

All excursions by private cars, leaving City Square, Dundee 9 a.m. except for 16th/19th May and 29th June. Details for these should be obtained from the Branch Secretary, Miss J. Stirling, 21 Johnston Avenue, Dundee.

Friday 16th to Monday 19th May. WHITEBRIDGE HOTEL, INVERNESS-SHIRE. Weekend excursion.

Sunday 1st June. KINNAIRD ESTATE (subject to permission from the Earl of Inchcape).

Sunday 29th June. ISLE OF MAY.

Sunday 20th July. LOCH ORDIE AREA.

Sunday 24th August. MONTROSE BASIN.

Sunday 21st September. EDEN ESTUARY.

EDINBURGH

Saturday 3rd May. ABERLADY BAY NATURE RESERVE (spring migrants). Leader: K. S. Macgregor. Meet Timber Bridge 2.30 p.m. (tea).

Saturday 10th May. WESTWATER RESERVOIR, WEST LINTON. Joint excursion with the Scottish Wildlife Trust. Leader: W. Brotherston. Meet Gordon Arms Hotel, West Linton, 2.30 p.m. (tea).

Sunday 25th May. THE HIRSEL, COLDSTREAM (by kind permission of Sir Alec Douglas-Home). Excursion by private cars, leaving Edinburgh from square behind National Gallery 10.30 a.m. for Hirsell at 12 noon (lunch and tea). Applications by 17th May to J. A. Stewart, 109 Greenbank Crescent, Edinburgh 10 (tel. 031-447 4210), stating number of seats required or available.

Sunday 8th June. ST ABBS HEAD. Joint excursion with the Scottish Wildlife Trust. Leader: David Grant. Excursion by private cars meeting St Abbs 1 p.m. (lunch and tea). Applications by 24th May to David Grant, Hawkslee Farm, Newtown St Boswells (tel. St Boswells 2209), stating number of seats required or available.

Saturday 14th June. ISLE OF MAY (numbers limited to 24). Leader: Alastair Macdonald. Excursion by private cars. Boats leave West Pier, Anstruther, 11 a.m. prompt, returning by 6 p.m. (lunch and tea). Cost of boat approx. 15s. Applications by 6th June to J. A. Stewart (address above) stating number of seats required or available.

Saturday 12th July. BASS ROCK (by kind permission of Sir Hew Hamilton-Dalrymple). Leader: J. H. B. Munro. Numbers limited to 60. Boat leaves North Berwick Harbour 2.30 p.m. returning about 7 p.m. (tea). Tickets, approx. 12s, will be purchased on the boat. Applications by 28th June to Mrs J. H. B. Munro, 9 Capelaw Road, Edinburgh 13 (tel. 031-441 2381).

Saturday 13th September. ABERLADY BAY NATURE RESERVE (autumn migrants). Leader: K. S. Macgregor. Arrangements as for 3rd May.

GLASGOW

Saturday 17th May. SQUARE NN 31, HEAD OF LOCH LOMOND. Survey of area for BTO Ornithological Atlas project. Applications by 1st May to local organiser: J. Mitchell, Dubhaniel, Gartocharn, near Alexandria. Please state if spare car seats available.

Saturday 31st May. AILSA CRAIG. Applications by 15th May to Mrs Draper, 6 Southview Drive, Blanefield, by Glasgow.

Saturday 7th June. LITTLE CUMBRAE (by kind permission of Little Cumbrae Estates Ltd). Applications by 24th May to Mrs Draper (address above).

Wednesday 18th June (6.30 p.m.) and Saturday 28th June (2.30 p.m.) HORSE ISLAND (by kind permission of the RSPB). Applications by 1st June to Mrs Draper (address above).

Saturday 5th July. BASS ROCK (by kind permission of Sir Hew Hamilton-Dalrymple). Numbers limited to 12 per boat. Boats leave North Berwick Harbour 12 noon, returning approx. 6 p.m. (tea). Applications by 20th June to Mrs Draper (address above).

INVERNESS

Saturday 3rd May. MUNLOCHY BAY HERONRY. Leave Ness Bank Church, Riverside, Inverness, 2 p.m.; North Kessock 2.30 p.m.

Sunday 11th May. INVERLAEL FOREST, LOCH BROOM, ULLAPOOL (by kind permission of Mr H. A. Maxwell, Forestry Commission). Leave Station Square, Inverness, 9.45 a.m.

Sunday 1st June. SPEYSIDE, CAIRNGORMS. Leave Station Square, Inverness, 10 a.m.

Sunday 15th June. SOUTH SUTOR, CROMARTY. Seabird Census. Leader: C. G. Headlam. Leave Station Square, Inverness, 10 a.m.

ST ANDREWS

Applications, not later than one week before each excursion, to Miss M. M. Spires, 4 Kinburn Place, St Andrews (tel. 523). Bring picnic meals.

Sunday 18th May. ST SERF'S ISLAND, LOCH LEVEN (by kind permission of the Nature Conservancy). Numbers limited. Leave Kinross Pier 11 a.m.

Saturday 24th May. KILCONQUHAR LOCH. Meet North Lodge 2 p.m.

Saturday 7th June. ARBROATH CLIFFS. Cars leave St Andrews Bus Station 1.30 p.m.

Sunday 15th June. GLEN ESK. Cars leave St Andrews 9.30 a.m.

Saturday 5th July. TENTSMUIR. Cars leave St Andrews 2 p.m.

STIRLING

For details of excursions apply to Branch Secretary, T. D. H. Merrie, West Faerwood, Stirling Road, Dollar, Clackmannanshire.

GLASGOW BRANCH ANNUAL DINNER

The Annual Dinner of the Glasgow Branch will be held in the new University Refectory, Hillhead, Glasgow, on Friday 28th March 1969 at 7.30 for 8 p.m. Tickets, 27/6 (inclusive of a glass of sherry and a glass of wine), obtainable from the Branch Secretary, Mrs Draper, 6 Southview Drive, Blanefield, by Glasgow. Guest of honour: Mr C. K. Mylne.

EDINBURGH BRANCH ANNUAL DINNER

The Annual Dinner of the Edinburgh Branch will be held in the Ettrick Hotel, Ettrick Road, Edinburgh 10, on Monday 14th April 1969 at 7 for 7.30 p.m. Tickets, 26s, obtainable from John Murray, 127 Marchmont Road, Edinburgh 9, by 30th March. Numbers limited to 70.

GLASGOW BRANCH—CHANGE OF LECTURE DATE IN APRIL

Will Glasgow members please note that as Monday 7th April is a public holiday the Branch lecture to be given by Mr D. R. Saunders will now be on **Thursday 10th April** instead. The place and time will be the same as before.



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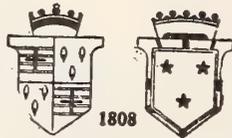
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Volume 5 No. 6

SUMMER 1969

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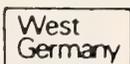
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Edited by A. T. Macmillan, 12 Abinger Gardens, Edinburgh, EH12 6DE

Assisted by D. G. Andrew and M. J. Everett

Business Editor Major A. D. Peirse-Duncombe, Scottish Ornithologists'
Club, 21 Regent Terrace, Edinburgh, EH7 5BT (tel. 031-556 6042)

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Vol. 5 No. 6

Summer 1969

Edited by A. T. Macmillan, assisted by D. G. Andrew and M. J. Everett

Editorial

Scottish Bird Report 1968. This issue consists almost entirely of the first of a new line of annual reports on Scottish birds. Nearly everything else has been squeezed out (papers, short notes, recent news, reviews). We believe that this is a useful and valuable exercise in recording, though it inevitably makes rather heavy reading. Our regular features will be back in the autumn.

New SOC Secretary. Major Alastair D. Peirse-Duncombe took up his duties as Club Secretary on 25th March 1969, and we confidently wish him all success in his new job. He hails from Perth, and was in business in Glasgow until recently after his retirement from the Regular Army in 1961.

The work involved in running the Scottish Ornithologists' Club and its Library and Bookshop increases steadily as the Club grows, and a staff of three (one half-time) is now needed to cope adequately with the responsibilities involved. Mrs Irene Waterston, who has carried the full weight in recent years, asked to be relieved of the secretaryship, which had increasingly been spilling into her leisure time, but she has most happily agreed to continue as Deputy Secretary. It is good to know that we shall still have the benefit of her great experience of SOC affairs and that the appointment of Major Peirse-Duncombe will ease the pressure of work under which she and Mrs Smillie, Membership Secretary, have been living.

Business Editor. Major Peirse-Duncombe also takes over as Business Editor of *Scottish Birds*. For a while, on account of increasing demands on his time, Dr T. C. Smout, who has been Business Editor for nearly seven years, has been anxious to pass on this work. He originally joined *Scottish Birds* to help edit the text but later took on what was for him the much less congenial job of handling the advertising, thus solving the problem of a successor for Arthur Smith. We owe him a substantial debt for the volume of advertising he has obtained for the journal and for all the unseen work involved.

Scottish Bird Report 1968

Compiled by ANDREW T. MACMILLAN

(Plates 20 - 23)

Though this report may be the first of a new series, it follows a long and continuing line of reports on Scottish ornithology that began with J. A. Harvie-Brown's 1881 "Ornithological journal of the winter of 1878-79...including remarks on migration of birds in the autumn of 1878 and the spring of 1879" (*Proc. N. H. Soc. Glasgow* 4: 123-190). For many years these reports were wide-ranging and detailed, and only in more recent years (since 1928) have they been limited to the formal recording of first occurrences and breeding in the faunal areas and divisions of Scotland. No reports were published for the years 1939 to 1952.

When the demise of the *Scottish Naturalist* led to the birth of *Scottish Birds*, extra space became available to Scottish ornithologists. Publication of more material led more and more people to submit notes. But though the quarterly Current Notes grew and grew, and much time went in producing them, yet there were two major snags—they were not fully representative and were therefore misleading, and those who used the material found it increasingly hard to locate what they wanted.

We hope that this annual report meets these points, by gathering everyday and unusual records for the whole of one year in one place. We have concentrated on recording the varying patterns of distribution and migration. We have not attempted an explanation of the ordinary status of each species, since variations between different parts of the country mean that any summary is either long or imprecise, but we have tried to make it clear which species breed in Scotland. Fuller details are in Baxter & Rintoul's *Birds of Scotland* (1953).

Only brief details are given of rarities, but many will be recorded more fully elsewhere; those within the scope of the *British Birds* Rarities Committee have been accepted by it unless noted as still subject to a decision. A very few records have been held over for various reasons; those that prove acceptable will be listed at the end of later Scottish Bird Reports. Notes on behaviour and abnormal plumage have usually been omitted as inappropriate in a report concerned primarily with the distribution of birds in time and space.

Over 450 contributors are listed in the key to their initials but many more sent notes that have had to be summarised

(350 saw Waxwings). In thanking all contributors, of summaries and illustrations as well as notes, we hope that they may have satisfaction from knowing that they have helped to make the report possible, and that they will continue to send notes. The task of sifting and sorting the records fell upon the local recorders, specially appointed for the purpose, and their meticulous attention to the detailed requirements of the compiler greatly eased the mammoth job of collating the individual summaries into a single report. For much work in processing the material for this report our sincere thanks go to all local recorders. Our aim was to have the local summaries completed within a month of the end of the year—not an easy task when some contributors are inevitably slow in sending notes or answering letters. In the event, 9 recorders had their summaries in by the end of January and 8 more by mid February; 4 came in the second half of February and the last two on 10 March and 22 April. Thus it has been possible, just, to complete the report for the summer issue of the journal.

Through initial checking locally and further examination by the compiler we have tried to eliminate significant errors. Where evidence for unusual records seems inadequate, though the identifications may well be correct, they have been left out. With the number of copyings by observer, recorder, compiler and printer, however, it is too much to hope that no errors have slipped through. Dates are specially liable to error and we will be grateful for details of any that should be corrected in next year's report. We would apologise in advance to anyone who finds his records attributed to someone else, for while quite satisfied about particular records we have at times been in doubt as to who saw the birds and have named one observer (or the recorder) when several were involved.

We see the function of this report as primarily to record observations made during the year rather than to interpret them. Both migration and breeding are closely affected by weather but unfortunately we lack the capacity to develop this theme, especially as very different weather patterns occur in different parts of the country, and we must therefore leave it for others to consider later.

Nor are we inclined to rearrange the records in a month-by-month account of the year, thereby discouraging readers from working their way through the report to find the titbits. Though of some interest it would involve much extra work and space merely to repeat what is already recorded. True, reference material in the form of a systematic list does not make easy reading, but it may repay study; we were espec-

ially struck by the number of times things were noted at several widely separated places on the same date, more so than we ever were with the less representative selection of material received for Current Notes.

A few special features of the year may be mentioned. Two hundred and seventy-four full species are included in the systematic list. Little Ringed Plover and Bluethroat bred for the first time; Snowy Owl and Fieldfare for the second; 5 pairs of Ospreys had nests; and the known breeding pairs of Redwing (25 or so) and Wood Sandpiper reached record levels; there has been a striking number of breeding records of northern species in recent years. An attempt to reintroduce the White-tailed Eagle is recorded. Little Owl and Green Woodpecker are still spreading north, and the Collared Dove continues to increase. Unseasonable winter breeding of Crossbills, and the resilience of the Sparrowhawk population may also be noted, and the Black-browed Albatross which returned for a second summer on the Bass Rock. There were autumn invasions of Nutcrackers (but only one in Scotland), Northern Great Spotted Woodpeckers and Bullfinches, but few Waxwings or Crossbills. A big movement of Sooty Shearwaters was observed in Orkney in October, and a remarkable early autumn build-up of juvenile Fieldfares in the north. There were also some interesting rarities, of which details will be found in the species list.

When looking at patterns of records it should be remembered that cover in different areas varies from good to very thin. With a few exceptions the best covered areas are those with full-time ornithologists, and we may mention particularly Shetland, Fair Isle, Orkney, Aberdeen, East Fife, Isle of May, Dumfries and Kirkcudbright, with apologies to several just outside this selection. Fair Isle, being a small island with a resident observatory warden, usually provides the best index to migration patterns.

In order to condense the species list into the available pages we have used small type and readable abbreviations of months and counties; qualifications such as "near" a place or "about" a number are usually omitted. Observers are indicated by their initials (it would help greatly if everyone had at least three). References in the form 5: 302 are to *Scottish Birds*. Except that type species (e.g. Black-throated Diver) are not automatically placed first in the genera, scientific nomenclature follows the 1952 B.O.U. *Check-List of the Birds of Great Britain and Ireland* with the changes proposed in *Ibis* 98: 158-168; 99: 369. English names follow the *Handbook*, as modified in *British Birds* 46: 2-3; 49: 5. Every species known to have occurred in Scotland in 1968 is listed, and an asterisk indicates that all known records have been given.

Local recorders for 1969

- Shetland (except Fair Isle)** R. J. Tulloch, Reafirth, Mid Yell, Shetland.
Fair Isle R. H. Dennis, Bird Observatory, Fair Isle, Shetland.
Orkney E. Balfour, Isbister House, Rendall, Orkney.
Outer Hebrides (except St Kilda) W. A. J. Cunningham, Aros, 10 Barony Square, Stornoway, Isle of Lewis.
St Kilda Dr I. D. Pennie, Bonhard Place, Bo'ness, West Lothian.
Caithness D. M. Stark, 2 Harland Road, Castletown, Thurso, Caithness.
Sutherland, Ross-shire (except Black Isle) D. Macdonald, Elmbank, Dornoch, Sutherland.
Inverness-shire (within 18 miles of Inverness), Ross-shire (Black Isle only), Nairnshire Dr Maeve Rusk, Arniston, 51 Old Edinburgh Road, Inverness.
Inverness-shire (mainland more than 18 miles from Inverness), Moray-shire Hon. D. N. Weir, English Charlie's, Rothiemurchus, Aviemore, Inverness-shire.
Banffshire, Aberdeenshire, North Kincardineshire N. Picozzi, Nature Conservancy, Blackhall, Banchory, Kincardineshire, and W. Murray, Culterty Field Station, Newburgh, Aberdeenshire, AB4 0AA.
South Kincardineshire, Angus G. M. Crighton, 23 Church Street, Brechin, Angus.
Perthshire Miss V. M. Thom, 19 Braeside Gardens, Perth.
Kinross-shire J. H. Swan, Vane Farm Reserve, Kinross.
Isle of May Miss N. J. Gordon, Nature Conservancy, 12 Hope Terrace, Edinburgh EH9 2AS.
Fife (east of A90) D. W. Oliver, 4 Lawview Cottages, Abercrombie, St Monance, Fife.
Fife (west of A90), Clackmannanshire, East Stirlingshire T. D. H. Merrie, West Faerwood, Stirling Road, Dollar, Clackmannanshire.
West Lothian Dr T. C. Smout, 19 South Gillsland Road, Edinburgh EH10 5DE.
Forth Islands (except May), Midlothian R. W. J. Smith, 33 Hunter Terrace, Loanhead, Midlothian.
East Lothian, Berwickshire K. S. Macgregor, 16 Merchiston Avenue, Edinburgh EH10 4NY.
Peeblesshire, Roxburghshire, Selkirkshire A. J. Smith, Glenview, Selkirk.
Clyde faunal area, North Argyllshire, Skye, Inner Hebrides Prof. M. F. M. Meiklejohn, 16 Athole Gardens, Glasgow W2.
Dumfriesshire J. G. Young, Benvannoch, Glencaple, Dumfriesshire.
Kirkcudbrightshire, Wigtownshire A. D. Watson, Barone, Dalry, Castle Douglas, Kirkcudbrightshire.

Boundaries are shown in 'The Birds of Scotland'. Note that Skye and the Hebrides are treated separately from the counties in which they lie.

For 1968 the list of recorders was the same, except that R. Hewson covered Nairn, Moray and Banff, Dr I. D. Pennie covered Sutherland and Ross-shire, and the editor had St Kilda. When he moved out of his territory Dr Pennie was succeeded by D. Macdonald (and took on St Kilda), and for the same reason R. Hewson's counties have been divided among the three neighbouring recorders.

Key to observers' initials

D. Abbey, E. K. Adam, Mrs J. Adam, D. G. Adams (DGAd), R. Adamson, A. Allison (AA), A. Anderson (AAn), D. R. Anderson, P. Anderson, D. G. Andrew (DGA), J. M. S. Arnott, W. Austin.

R. S. Bailey (RSBy), R. S. Baillie (RSB), W. Bain (WBa), N. Baker, E. Balfour (EB), D. Balharry (DBa), G. H. Ballantyne, J. Ballantyne (JBa), D. Barbour (DB), G. J. Barnes, M. T. Barnes, Mrs J. Basden (JB), Miss P. G. T. Baxter, M. Bayldon (MBA), E. Beaddie (EBd), A. Beat (ABe), E. Bell (EBe), G. Bell (GB), M. Bell (MB), G. Bennett (GBn), Mrs G. Berger (GBe), Dr R. H. Berry, F. C. Best, A. L. H. Binnie, G. Birnie (GBi), J. D. Bisset, A. Black (AB), H. Blakeney (HBy), H. Boase (HBo), Lt. Col. M. G. Borthwick, D. S. Bowser, D. Boyd (DBo), T. Boyd, W. Brackenridge (WB), Mrs E. J. Brett, D. M. Bremner, Miss J. Bristow (JBw), R. Broad, W. Brotherston (WBr), Miss B. Brownell, J. Bruce (JBr), K. Bruce, Mrs E. Brunton (EBr), H. O. Bunce, A. R. Burrows, R. T. Burrows, H. Burton (HB).

P. Cairney (PC), R. G. Caldow, T. M. Cameron, A. Campbell (AC), Col. & Mrs A. C. Campbell, Dr B. Campbell, C. A. B. Campbell, C. R. G. Campbell, Dr M. E. Castle, A. Chapman (ACh), R. A. Cheke, P. Chester (PCh), R. Clark, J. L. S. Cobb, Miss E. R. T. Conacher, Sir C. G. Connell, D. Coutts, J. M. Cowan, S. Craigie, G. M. Crichton, G. Critchley, J. Crompton, J. V. B. Cumming, Miss M. H. E. Cuninghame, W. A. J. Cunningham, ELOC (Eskdale & Liddesdale Ornithological Club per KB and RES).

R. C. Dalrymple (RCDa), J. Davis (JDa), A. Deadman (AD), R. H. Dennis, D. Dewar, E. Dicerbo, H. Dickinson, R. C. Dickson (RCD), C. Docherty, Miss J. Donnan (JDo), H. E. M. Dott, Miss M. Drake, J. Dunbar (JD), A. Duncan (ADu), W. Dunlop, Dr G. M. Dunnet, R. Duthie, J. N. Dymond.

G. M. S. Easy, J. Edelsten, Dr W. J. Eggeling, N. Elkins, Lt. Cdr. D. Ellin, R. Ellis, Sir R. Erskine-Hill, T. H. Evanson, M. J. Everett.

J. Faulkner (JFa), C. J. Feare, A. D. Fentham, I. M. Fergus, J. Findlay (JFi), Miss M. Finlayson (MFi), A. Fisher (AFi), J. Fisher (JF), Dr G. A. Fleming, R. Flumm (RF), Miss P. Forbes, J. Forrest (JFo), M. Forrester (MF), Miss E. Foster, A. Fraser (AF), R. Furness (RFu), Wing Cmdr. R. J. Fursman, A. M. M. Fyffe.

H. Galbraith, Mrs S. B. Gall, W. Gallacher (WGa), W. Gibb (WG), I. Gibson, J. A. Ginnever, D. C. Gladwin, D. Glass (DGs), D. Glue (DG), A. G. Gordon, Miss B. Gordon, Miss N. J. Gordon, S. Gordon, Miss S. M. Gordon-Roger, Miss E. Grace, J. Graham (JGr), R. Graham, R. J. Graham, D. R. Grant, Mrs J. A. R. Grant, M. E. Greenhalgh, J. J. D. Greenwood, M. J. P. Gregory, J. Gunn (JG), J. M. Gunn, HGp (Hauxley Group per BL), NSRG (N Solway Ringing Group per JFY), TGp (Tentsmuir Group: JD, DBMcG, RWS, D. Thomson).

Mrs H. S. C. Halliday, K. Halliday, Dr K. C. R. Halliday, T. Halliday (TH), Mrs E. Hamilton (EHa), M. K. Hamilton, J. Hardy (JH), M. I. Harvey, T. Hastie (THa), D. Haver, C. G. Headlam, I. Henderson (IH), R. Hewson (RH), I. Hills (IHl), R. Hirst (RHl), J. G. Holbourn (JGH), E. G. Holt, J. A. D. Hope, J. Howie (JHo), Dr & Mrs J. F. Hughes, R. B. Hughes, W. Hughes, J. Hughson (JHu), D. C. Hulme, R. A. Hume, E. N. Hunter, J. G. Hunter (JGHu), Miss R. S. Hunter, S. L. Hunter, M. Hutcheson, C. Hutchinson, E. Hutchison (EH).

E. T. Idle.

A. F. Jacobs, Mrs E. James, P. F. James, W. C. Jamieson, R. A. Jeffrey, Dr D. Jenkins, P. Johnson, T. Johnson-Ferguson, C. Johnston, I. R. Johnston, J. Johnston, T. H. Jorgensen, G. D. Joy.

P. Kerr, H. King, P. K. Kinnear, D. B. Kirke.

Dr D. Lack, Mrs S. Laing (SL), R. Lambie, P. A. Lassey, D. J. Law, Dr D. H. Lawson, J. H. Lawton, S. Laybourne (SLa), A. F. Leitch, A. L. A. Leslie, B. Little, J. Lockerbie (JL), J. A. Love, J. Lowe (JLo), A. D. Lucas.

A. MacCook, J. McCubbin, A. Macdonald, D. Macdonald, M. A. Macdonald, J. McDowall, Mrs M. K. Macduff-Duncan, J. MacEwen, J. A. MacEwen, Miss J. McFarlane, R. McFarlane, Miss J. McGaw (JMcGa), J. MacGeoch (JMcG), N. G. MacGilp, D. B. McGinn, D. McGowan (DMcG), A. R. McGregor, D. McGregor (DMcGr), Mrs J. McGregor (JMcGr), K. S. Macgregor, R. Macgregor, Mrs M. McIntosh, R. Macintyre, K. A. McKenzie, Miss C. K. MacKinnon, I. McLachlan (IMcLa), Mr & Mrs J. McLaurin, I. Maclean (IMcL), J. McLennan, E. Macmillan, M. Macmillan, Miss M. P. Macmillan, Dr P. McMorrin, L. MacNally, M. MacNally, S. MacNally.

A. R. Mainwood, A. Marks (AMa), M. Marquiss, F. Marr, H. Marshall (HM), I. K. Marshall, H. Martin (HMa), Mrs J. Martin (JMa), R. Martin (RMa), W. Matheson (WMa), J. Maxwell (JMx), E. R. Meek, Prof. M. F. M. Meiklejohn, K. Meihuish, Mrs D. Melrose, J. K. R. Melrose, T. D. H. Merrie, J. Miller (JMi), R. H. Miller, Mrs B. M. S. Milne, R. Milne (RM), J. Mitchell (JM), Rev. R. I. Mitchell, Dr N. C. Morgan, Mrs J. Morrison (JMo), W. M. Morrison, J. Moss (JMs), W. H. Moyes, A. Munro (AM), I. C. Munro, J. Murray (JMu), J. B. Murray, Mrs P. Murray, W. Murray (WM).

D. Nethersole-Thompson, Dr I. Newton, Dr M. Newton (MNe), Mrs J. Nicholson, A. Nicoll, M. Nicoll (MN), A. A. Nimmo-Smith, H. D. R. le N. Noble, D. J. Norden.

Miss M. H. Oates, M. A. Ogilvie, C. Ogston, D. W. Oliver, J. S. Oliver, R. Osbourne, H. Ostroznik.

C. E. Palmar, C. Park, K. Parkes, J. L. F. Parslow, J. Parsons (JP), G. L. A. Patrick, I. J. Patterson, L. Payne, G. A. Pearson, Dr I. D. Pennie, S. R. Pepper, J. Phillips (JPh), B. Philp, Prof. R. W. Pickford, N. Picozzi, J. Porter (JPo), I. Prestt.

Mrs I. Rainier (IR), R. M. Ramage, A. D. K. Ramsay, C. P. Rawcliffe, C. Reynolds, G. A. Richards, J. Richmond, W. K. Richmond, Dr R. Richter, A. Robb (AR), Mrs E. L. Roberts, S. Roberts, M. J. H. Robson, A. Rogers (ARo), Dr M. Rusk, H. M. Russell, I. Russell (IRu).

J. G. Salvesen, J. D. Scobie, J. Scott (JSc), J. Selwyn (JSe), Mrs A. F. W. Sharp, D. Sharpe (DSh), R. J. W. Shaw, J. Sheldon (JSh), D. S. Shelly, D. C. Shenton, A. M. Sillitto, G. Simpson (GS), J. H. Simpson (JHSi), J. I. Simpson, M. Sinclair (MS), W. A. Sinclair, D. Skilling (DS), J. Skilling (JSk), R. Skinner, J. Sloan (JS), A. J. Smith (AJS), A. J. M. Smith, Mrs E. M. Smith, H. D. Smith, Dr P. H. Smith, R. E. Smith, R. T. Smith, R. W. J. Smith, Dr T. C. Smout, A. J. Souter (AJSo), B. Staines, D. Stalker (DSt), D. M. Stark, T. Stark, Mrs M. I. Steel, A. G. Stewart, I. F. Stewart, Brig. I. M. Stewart, J. A. Stewart, R. A. Strachan, G. Summers (GSu), R. W. Summers, A. Sutherland, J. Sutherland (JSu), M. Sutherland (MSu), Dr R. A. L. Sutton, J. H. Swan (JHS), D. Swindells (DSw), RNAS (Royal Navy Air Station per Air Traffic Controller and DNW).

Dr A. M. Tait, C. S. Tait, I. Taylor, K. Taylor, A. Tewnion, Mrs A. W. Thom, Miss V. M. Thom, T. Thomason, E. Thomson, J. Thomson (JTh), C. H. Thorpe, B. Thurston, Dr W. L. N. Tickell, D. A. Tindal, J. Todd (JTo), R. B. Tozer, G. Trafford, M. Traill-Clouston, F. R. Traynor, Miss O. Tregurtha, R. J. Tulloch, B. S. Turner, R. Tweddle.

B. Unwin, L. A. Urquhart.

J. Wagstaff (JWa), A. F. G. Walker, Mrs A. M. Walker, F. J. Walker, K. G. Walker, Mr & Mrs M. Walker (MWa), D. I. M. Wallace, J. H.

Wallace, Mrs D. E. Walters, I. Wares (IW), Dr W. E. Waters, G. Waterston, Dr A. Watson, A. D. Watson, R. O. Watson, J. Watt (JW), W. Watt (WWa), I. Wattret (IWa), Hon. D. N. Weir, J. R. Weir, Mrs P. A. Weir, G. W. Westerhoff, I. S. Wheatley, G. T. White, Mrs J. A. Whyte, J. Wightman (JWt), E. J. Williams (EJWi), M. Williams (MW), J. Williamson (JWi), W. Williamson (WW), R. G. Willis, D. Wilson, Miss D. M. Wilson, D. R. Wilson, M. G. Wilson, R. A. Wilson, W. Wilson (WWi), E. J. Wiseman (EJW), J. D. Wood, D. B. Wooldridge, J. Woolward (JWo), P. Wormell, Prof. V. C. Wynne-Edwards.

Dr E. I. Young, J. F. Young, J. G. Young.

B. Zonfrillo.

Species List

Great Northern Diver *Gavia immer*. As usual a few remained in summer in Shet, Ork and O Heb (EB, WAJC, RHD, RJT); also 2 Rattray Head, Aber, 19 June and singles flying N on 16th and 20 July (MW). Inland: imm dead L Lochy, Inv, spring (per CEP); 1 Earlstoun L, Kirk, 18-26 Dec, same place as one Nov 1965 (GAF, JL, JR, ADW).

First autumn arrivals, family 2 ad and 2 juv (calling when separated) Hascosay, Shet, 26 Aug (RJT); passage noted Rattray Head from 7 Sept, peak 21 in 2 hrs 5 Oct (MW). Flocks: 6 Fife Ness 4 Feb (DWO); 12 Stornoway 27 Apr (NE); 5 Tentsmuir, Fife, 18 Dec (PGTB). Only singles Dunnet Bay, Caith, Jan/Apr and Nov/Dec compared with up to 12 in 1967 (DMS).

***White-billed Diver** *Gavia adamsii*. Oiled bird from Tay, probably Fife, 9th or 10 Mar, sent to Aberdeen zoo for care, died and body burnt (JJDG, SRP) (5: 194). Subject to acceptance by Rarities Committee. There are previous records for Angus but not for Fife.

Black-throated Diver *Gavia arctica*. Noted Caith (N end of breeding range) in summer at several lochs more accessible than those where it breeds (JND, GMSE, PMcM, DMS); in Badenoch, E Inv, one young flew from new nest site (PC).

First of autumn: 2 Tentsmuir, Fife (TGp), and 1 Aberlady, E Loth, 21 Aug (DJ). Counts: 7 Stornoway 29 Apr (NE); 6-8 on 27 Oct, 5-6 on 8 Dec Tentsmuir, where commoner than usual (TGp). Though regular offshore Aber, 1 Girdle Ness 17 Nov seems to be first for N Kinc (ADKR).

Red-throated Diver *Gavia stellata*. Shet breeding success reduced by drying up of some pools in exceptionally dry summer (RJT). On edge of range 5-6 breeding sites known Perth and eggs found at new one (VMT); possibly increased Suth (EGH).

Winter records have been unusual in Shet, but a number wintered 1967/68 and some were on breeding lochs from late Feb (RJT). Maximum counts: 23 Montrose, Angus, 24 Jan (GMC); 15-20 Gullane Bay, E Loth, 10 Mar (RWJS); 30 Largo Bay, Fife, next day (PGTB); exceptional 16 Southernness, Kirk, 29 Sept after W gale (WA, RTS).

Off E Loth 2-3 as early as 19 July (RWJS); peak passage 72/hr flying S at Buchan Ness, Aber, 5 Oct (NE), and 30/hr Fife Ness next day (DWO). Four off Whiteness Head 8 Dec, rarely recorded Nairn (MIH). Inland away from breeding areas: 1 oiled L Leven, Kinross, 21-24 Feb (JHS); 1 Duddingston, Midl, 17 May (DRA); 1 Cobbinshaw, Midl, 9 Nov (TB, EMS, RWJS); 1 Endrick mouth, Stir/Dunb, from same date for at least 16 days (JM).

Great Crested Grebe *Podiceps cristatus*. Breeding success poor in E Fife: reduced numbers and no chicks for third year at Kilconquhar; hardly any young Lindores (once biggest Scottish colony) after pike poisoned (5: 52); no chicks Morton Lochs 28 July though 26 birds 14 Apr and 7 prs bred (DWO, CST); also none bred L Leven (pr in 1967) (AA, JHS). Late brood hatched at 900 ft Gladhouse, Midl, first wk Sept,

all 3 juvs fledged, leaving one by one in Dec (DGA, EMS, RWJS); 1 inland L Arthur, Kirk, 1 Dec (RBT).

Outstanding count 37 L Ryan, Wigt, 3 Mar (DS, RTS, JGY), and 7 back 24 Aug (TH). Other maxima: 14 L Leven 25 Oct (AA, JHS); 19 Castle L, Lochmaben, Dumf, 30 Mar (RTS) and 24 Aug (DSw); 500 off Leith, Midl, at year end (count 3.1.69) (RWJS). Others in unusual areas: prs on Selk lochs summer but no breeding reported (AJS); 1 Castlehill Bay, Caith, 27 Apr (DMS); 1 L Spynie, Moray, 28 Sept (DB); 1 Cambelton L, Arg, 25 Oct (FRT); 4 Prestwick, Ayr, 4 Nov (AGS). Two L a'Mhachair, S Uist, 13 Aug, 2nd record O Heb (MSu).

***Red-necked Grebe** *Podiceps griseigena*. Unusual date: 1 L Sween, Arg, 22 June, photograph seen by MJE (SBG). Others 27 Jan-30 Apr and 27 Aug-19 Nov thus: Wigt, 1 L Ryan 7 Apr (JGY); E Loth, Gosford Bay 25 Oct (2) (MHO), Nov 10th (1), 12th (2), 17th (3), 19th (1) (DJ), Gullane Pt 27 Jan (2), 16 Mar (2), 31 Mar (1), 27 Apr (1) (DCS), 27 Aug (2), 21 Sept (4-5), 28 Sept (2), 5 Oct (2), 9 Nov (1) (MJE, MAMcD, DCS, EMS, RWJS); Midl, 1 Portobello 2 Apr (THJ); 1 Fife Ness 12-13 Oct (DWO, HDS); E Inv, 1 L Ashie 28 Aug (RAH); Caith, 1 Castlehill Bay 26 Apr, 2 on 27th (DMS); Skye, 1 between L Fada and L Leachan 30 Apr (JFH).

Slavonian Grebe *Podiceps auritus*. Present main E Inv breeding area 19 Mar-26 Oct (10) (MIH); peak 21 Caith colony 22 Sept (DG). Outside breeding areas summer: 2 on sea N of Aberdeen 23 June (NE); ad Cameron reservoir, Fife, 15-18 June (AMMF, DWO). Other singles inland: Strathbeg, Aber, 29 Sept (NE); juv Cameron 28 July (DWO); Morton Lochs, Fife, 24 Nov and 1 Dec (PGTB, AMMF); Portmore, Peeb, 17-24 Nov (DGA, EMS, RWJS); Balgray reservoir, Renf, 2 Nov (KT). Presumed immigrants from 10 Oct Fair Isle (RHD), and 13th Shet (RJT). Biggest winter counts only 8 Gullane Bay 26 Jan (MGW), 8-12 Tentsmuir, Fife, 10 Nov (TGp).

***Black-necked Grebe** *Podiceps nigricollis*. No counts of two established colonies in central lowlands. In summer, 1 Gladhouse, Midl, 26 May (EMS, RWJS) and Portmore, Peeb, 1 June (DGA). Others to 7 Apr and from 3 Nov (1 on 22 Sept) thus: Wigt, regular L Ryan, 7 on 3 Mar and 7 Apr (JGY); Dunb, 2 L Lomond 27 Feb (WKR); S Arg, Strachur Bay 5 on 17 Feb, 2 on 19th, 1 on 2 Mar (WKR); Rox, 1 Hoselaw L 8 Dec (RSB); E Loth, 1 Gullane Pt 10 Nov, Gosford Bay 17th (DJ); W Loth, 1 Linlithgow L 22 Sept (MKH); Fife, 1 Tentsmuir 3 Nov (TGp) and 17th (AMMF); Angus, 1 Rescobie L 2 Dec (GMC, JIS).

Little Grebe *Podiceps ruficollis*. Coastal records: a few winter inner Moray Firth, 1 Fortrose 27 Jan (MKMcD-D), 2 there 30 Dec (MR); many overwinter W Ross, peak 21 Shieldaig Bay, Gairloch, 15 Feb (ENH). Migrant Fair Isle 10 Apr (RHD).

***Black-browed Albatross** *Diomedea melanophrys*. Bird which summered with Gannets at Bass Rock 1967 (5:20) filmed from fishing boat in Forth 10-14 mls NE of Eyemouth 7th or 8 Feb (per GW) (5:112); at Bass 13 Apr-20 July, but away from land, especially late June/July, more than in 1967 (FM).

***Leach's Petrel** *Oceanodroma leucorhoa*. No notes from remote colonies. Singles, presumably 'visiting', caught or seen at night when mist-netting Storm Petrels at Fair Isle 13th and 14 July, 4th and 5 Aug (RHD).

Storm Petrel *Hydrobates pelagicus*. Ashore at night 1 June-23 Sept at Fair Isle where more netted than ever before (also more than usual in summer/autumn on crossing) but only 2 nests found (RHD). In Caith, ad killed by cat Stroma about 15 July (per PMcM), and reported over Claredon, Dunnet and Duncansby headlands in bad weather (DMS).

Manx Shearwater *Procellaria puffinus*. Little comment on breeding

status, but 1000 Sound of Arisaig 22 July near main colonies (RAH). E coast summer records include 3 flying W up Forth at Inchkeith in NE wind 16 June (EMS, RWJS). At 59°N, 5°W 200 flew SW 18 June (ADKR) (5 : 278).

Rather scarce Fife Ness, peaks 76/hr 27 May and 36 in 30 mins 11 Sept (DWO). Indication of passage round N Scotland: Angus, small numbers well offshore July-Sept, mostly flying N (GMC); Aber, movement N at Rattray Head 16-27 July (peaks 14/hr 17th, 81 in 2 hrs 18th) (MW) and Buchan Ness 24 Aug-1 Sept (peak 14/hr 26th) (NE); Moray Firth, 20 Sept, 2 Alturlie Pt, 4 Fort George, both E Inv, 4 Rosemarkie, E Ross (NE, JAL); Caith, 13 N at Sarclet 21 July (GMSE), 3 N at Clyth 14 Sept (NE).

***Great Shearwater** *Procellaria gravis*. One 35 mls NW of N Rona 18 June (ADKR) (5 : 278). On 18 Aug 1-2 flew N past Tarbat Ness and 2 past nearby Rockfield, first for E Ross (RAH).

***Sooty Shearwater** *Procellaria griseus*. One off NW Scotland 59°50'N, 9°30'W 18 June (ADKR) (5 : 279). Otherwise 16 July-5 Nov (including some big counts) thus: Shetland, 1-2 E of Fetlar 22 Sept (RJT); Fair Isle, 17 flying past 4 Aug-15 Oct (7 on 31 Aug), 75 on crossing 20 Aug-5 Nov (20 on 23 Aug, 10 on 13 Sept, 25 on 29 Sept, 8 on 1 Oct) (RHD); Ork, some 250 on 4 Oct and 316 on 5th passed NW off N Ronaldsay (winds mainly E or NE), about 80 in next 2 days (GWW, EJW, DBW); Caith, 2 N at Clyth 14 Sept (NE); Aber, first 16 July, passage noted 13-24 Sept (peak 33/hr 14th), last 2 on 11 Oct, all flying N at Rattray Head (MW); Angus, 1 Usan 16 Sept (JD), 1 N at Arbroath 25 Sept (MN); Fife, good passage N at Fife Ness Sept 14th (15/hr), 15th (29 in 5 hrs), 16th (4) (HGp, JD, DWO, RWS); Isle of May, 1 on 26 Sept (KAMcK, DWO).

Fulmar *Fulmarus glacialis*. Census Hirta, St Kilda, 23,100 occupied sites July, 17% up on 1961 (AAn, GBi) (5 : 277). Frequently nest inland Ork/Shet but one on ruined building N Uist evidently first such site in O Heb (DW). Blue-phase bird bred Fair Isle, 4 such there 24 Sept, singles on crossing 1 Oct and 9 Nov (RHD). Non-breeders inland included 1 'prospecting' Kilconquhar church tower, Fife, 25 Apr (DWO); singles L Leven 1st and 22 May and 1 June (JHS); singles (once 2) at 6 Edinburgh localities on 7 dates 21 Feb-17 May (DGA, MJE, AFL, MAMcD, MGW). One Caerlaverock 7 Apr; there are few records for Dumf (JGY).

Gannet *Sula bassana*. Only census was at smallest and newest of 8 colonies, Scar Rocks, Wigt, 437 nests (max. 300 in 1965) 8 June (JGY) (5 : 206). Juvs inland Sept: 2 Aigas, 6 mls SW of Beaully Firth, E Inv, 5th (per JMcG); 1 flew up Strath Carron, W Ross, 11th (CGC); 1 L Leven 12th, first for Kinross (RMa & TS per AA); 1 Dunkeld, Perth, 23rd (died 24th) (per THE); 5 flying E (4 turned SW, 1 S) Endrick mouth, L Lomond, 15th (AGS). Count 250 Almond estuary, Mid/W Loth, 13 Jan, was exceptional (TCS).

Cormorant *Phalacrocorax carbo*. Scottish breeding population about 3000 prs (RWJS in press); Ork increased to well over 600 prs (EB).

Ten on stump L Ken, Kirk, 25 Apr suggested spring passage (ADW). Autumn movements more marked: Fair Isle 30 Aug-8 Oct, mainly 15-22 Sept (120 on 16th, 57 on 19th) (RHD); Isle of May peak 27 on 26 Sept (NJG); Aber, passing S at Rattray Head 1-7 Sept (peak 170/hr 7th) (MW); related records of imms inland Speyside mid Sept-mid Oct (DNW), L Laggan, Inv, Oct (JPo), Moorfoot reservoirs 1-29 Sept (DGA, EMS, RWJS). Up to 150 fishing Skinflats, E Stir, 29 Dec where only small numbers usual (MH). Four of 30 at Fife Ness 9 Mar had pale heads (DWO).

Shag *Phalacrocorax aristotelis*. Isle of May colony (c. 800 prs) con-

tinues increase; first eggs 6 Apr (NJG); sitting on eggs St Kilda 10th (HK); some decline Caith, absent from E face Holbourn Head (KM). Increased winter numbers noted Auskerry and other places in Ork (EB). None reported Leith Docks (cf. 4: 520) (DGA); but 1 on R Ness near tidal limit 7 Dec, 1 Longman Pt 1 Jan 1956 (unpublished) is the only previous record for E Inv (MR).

Heron *Ardea cinerea*. Exceptionally good numbers fledged in established Dumf colonies (NSRG); at least 40 young from 20+ nests Dal-skaith Wood, Kirk (BST); 19 nests Endrick mouth, Stir, against 6 in 1963 (JM), the reverse of the usual trend in S Scotland, exemplified by a report of large young jumping from nests Tentsmuir, Fife, when buzzed by helicopter, and found dead below the trees (DWO, RS).

Autumn passage Fair Isle (no Herons breed Shet) 2 Aug-5 Nov, peaks Aug 29th (8), Sept 5th (10), 13th (27), 14th (12), 26th (13) (RHD). Winter count 19 Strathbeg, Aber, 28 Jan (NE).

***Little Egret** *Egretta garzetta*. One dead under wires Mochrum, Wigt, 23 Apr (CABC, JMcGa) (5: 209). Previous Scottish records 1954, 1955, 1961.

Mallard *Anas platyrhynchos*. Early clutch (5 eggs) Kergord, Shet, 28 Mar (per RJT); 12 hatched Shieldaig, Gairloch, W Ross, 29 Mar (ENH). Two prs were first to breed on Isle of May (NJG). Dumf numbers high after exceptional breeding season (JGY), in contrast to lower Oct-Dec counts (750 against up to 1500 in recent years) Almond estuary, Mid/W Loth (TCS). Ork breeding and winter numbers both apparently up (EB), and Caith late 1968 numbers considerably up on previous years (DGs, DMS, IW).

Spring and autumn passage not as marked as usual in Speyside, though radar suggested large movements of ducks around 15 Oct (RNAS, DNW). Autumn passage Fair Isle from 22 Aug (RHD). Peak counts: 2900 L Leven 18 Sept (over 500 prs breed) (AA, CRGC, IKM, JHS); 2500 Methil Power Stn, Fife, 18 Jan (DWO); 2000 St Andrews Bay, Fife, 24 Nov (TCS).

June 1966 hand-reared chicks from Altnaharra, N Suth, were recovered in Denmark 18 Aug 1967 and Opland, Norway, 28 Aug 1967 (IDP).

Teal *Anas crecca*. No reported changes in breeding status. Small spring passage (max. 5) Fair Isle 15 Mar-29 May (RHD). Autumn passage: Fair Isle 23 Aug-20 Dec (9 on 16 Sept, 11 on 5 Oct) (RHD); Isle of May 29 Aug-2 Oct (NJG); peak 660 Beaully Firth, a winter haunt, 15 Sept (MR); marked passage Spey valley mid Sept-mid Oct (DNW). Sept build-up L Leven (few breed) to 780 on 8 Oct, declining to year end (AA, CRGC, IKM, JHS). Large flocks, up to 2240, a feature of early Sept at Caerlaverock, Dumf, mainly dispersed by late Nov; influx of continental birds late Dec produced 2 Danish rings (JGY). Peak 180 Bay of Nigg, N Kinc, 19 Jan (NE, ADKR).

Drakes with characteristics of the N American Green-winged Teal *A. c. carolinensis*: 1 Gadloch, Lenzie, Lan, 14 Jan, where one seen a year before (4: 502) (BZ); 1 Quothquhan, Biggar, Lan, 12-19 Apr (RE-H, RSH) (5: 279); 2 Morton Lochs, first for Tay, 12 Oct (HSCH, KCRH, JMcF); bringing Scottish total to 12 drakes (11 records), all but one since 1952.

***Garganey** *Anas querquedula*. Not breeding. Spring passage 28 Mar-4 May, mainly 16-20 Apr, thus: Dumf ♂ Caerlaverock 17th, 19th and 20 Apr, with respectively 1, 3 and 4 ♀♀ (WA, JDo, JMx, DS, JGY); Kirk, pr Balmaghie 28 Mar (per ADW); Wigt, pr Stranraer 18 Apr (JGY); Aber, pr Strathbeg 16 Apr (NE); O Heb, pr Balranald, N Uist, 4 May (ARMcG).

***Blue-winged Teal** *Anas discors*. Drake L Feithean, Balranald, N Uist,

29 Apr-16 Aug, subject to acceptance by Rarities Committee (ARMcG); 3 of the 5 previous Scottish records are also for O Heb.

Gadwall *Anas strepera*. Possibly up to 40 prs bred L Leven, still the main centre after 50 yrs (AA, CRGC, IKM, JHS); best summer count elsewhere 9 birds Cameron Reservoir, Fife, 16 June (AMMF). Female and 2 half-grown young Breakish, 5 mls SW of Kyleakin, 10 Sept are first for Skye, but breeding division unknown (AMcD).

Spring movements indicated by isolated reports: pr Gladhouse, Midl, 7 Apr (EMS, RWJS); ♂ Culzean, Ayr, 27 Apr (SLH); pr Ythan, Aber, 19 May (NE); ♂ Blairgowrie, Perth, 30 May (VMT). Several summered N Uist (ARMcG). Autumn peak 15 Kilconquhar, Fife, 5 Sept (DWO). After mid Oct: ♂ Skibo, SE Suth, 11 Nov (DMcD); ♂ Edinburgh lochs to 28 Nov (HEMD); 7 on sea Carsethorn, Kirk, 7-14 Oct (JGY); 1 Mochrum, Wigt, 9 Nov (RHM); 1 shot Lochar Moss, Dumf, 22 Nov (EBE, JGY); small numbers L Leven (JHS). These records surely exaggerate its scarcity in winter. Also 2 L Milton, Kirk, 11 Feb (JND); 2 Skibo 12 Jan and 17 Feb (DMcD); 7 L Eilean an Stadir, S Uist, 6 Feb, pr Ballranald, N Uist, 7 Feb, pr L Ardvule, S Uist, and pr L Fada, Benbecula, 8 Feb (DGA, DJ, IN).

Wigeon *Anas penelope*. Up to 40 prs breed L Leven (AA, CRGC, IKM, JHS), but probably none further S now.

Spring passage Fair Isle 6 Mar-28 May (17 birds) (RHD). Midl winter birds gone by end Apr, returned early Sept (DGA, EMS, RWJS), corresponding to Fair Isle dates 26 Aug-24 Oct (peak 14 on 27 Aug) (RHD) and Speyside passage mid Sept-mid Oct (DNW). Large movement of at least 3000 down Nith to Blackshaw Bank, Dumf, in gale 14 Jan (EBD JWa, JGY).

***American Wigeon (Baldpate)** *Anas americana*. Pr Unst 20 Jan-3 Feb, 4th in a series of recent Shet records (MS, RJT, FJW) (5 : 210).

Pintail *Anas acuta*. In its 100th year as a Scottish breeding bird the only breeding prs mentioned were one (doubtless more) Ork (per EB), and 5 with well grown broods (probably 1-2 others) Kirk, a distinct increase (ADW, JGY), including very early pr hatching young about the end of Apr (DGA, JADH) (5 : 179).

Singles and small parties irregularly at various dates and places. More coordinated records: 15 L Leven on 26 Sept after only 2 on 24th (JHS); return to Moorfoots 22 Sept (DGA, EMS, RWJS); ♂ Hoselaw L, Rox, 19 Sept (RSB). Peaks in winter areas include: 103 Inverness 13 Oct (JMcG); 30 Skinflats, E Stir, 20 Oct (MH); 500 Caerlaverock the same day (JGY). At Carsethorn, Kirk, the spectacular but now regular peak was 1720 in Feb (JGY), and L Ken held 70 or more on 18 Feb and at times in Nov-Dec (ADW).

A Pintail x Mallard hybrid was shot at Lochar Moss, Dumf, 22 Nov (EBE, JGY).

Shoveler *Spatula clypeata*. No reported change in breeding status, but "a few nest in Selk" is evidently first record thereof (AJS).

Pr Shieldaig, Gairloch, 21 May, first for W Ross (ENH). Autumn passage becoming increasingly marked Blairgowrie, Perth, with 99 at Stormont and Monk's Myre 15 Sept, 236 on 13 Oct (VMT). Conversely the build-up of migrants from early Sept to 50 on 26th at L Leven was very poor compared with 400-500 in 1966 and 100 in 1967 (AA, CRGC, IKM, JHS). Hoselaw L, Rox, had peak 61 on 14 Sept (RSB); Caerlaverock winter flock peaked at 40-60 on 8 Dec (JGY).

***Mandarin Duck** *Aix galericulata*. The feral breeding flock on the Tay in Perth numbered 22 on 7 Jan (VMT).

Scaup *Aythya marila*. No breeding reports. July records: ♂ Caith 22nd (DMS); 1 Almond estuary, Midl/W Loth, 27th (TCS); 2 ♂♂ Duddingston, Midl, 9th (MJE).

Inland: Aber, 5 ♂♂ Strathbeg 19 May (NE); Fife, Kilconquhar 14

Jan (8), 18 Feb (2), 15 Mar (1) (DWO); Perth, ♀ Monk's Myre 15 Dec (VMT); Midl, a few Edinburgh autumn, 1 Gladhouse 29 Sept (DGA); E Loth, 5 Whiteadder Reservoir 9 Nov (AMcD); Glasgow, ♀ Possil L 11-19 Apr (RJWS); Renf, ♂ Barr L 30 Sept (RGC), ♀ R Cart, Barnsfoot, 16th and 23 Nov (HG, IG); much as usual.

Noted 7 Aug Clickimin, Shet (RJT), but 5 Isle of May 26 Sept indicate autumn arrival better (DWO). Seafield (Edinburgh) 1967/68 peak 15,000 (or even 20,000 in Jan); 18 back by 6 Oct, 600 on 20th; 14,000 on 8 Dec, at least 30,000 by 22nd, more than ever before (DGA). Peaks in subsidiary winter areas: 1000 Methil, Fife, 18 Jan (DWO); 450 Burntisland, Fife, 4 Jan, may be new area (ADKR); Dumf midwinter total rarely exceeds 340-400 (JKRM, RTS, JGY); Kirk, 100+ Carsethorn Oct (BST); Wigt, 160 L Ryan Jan and Mar (JGY). Over 200 Ardmore Pt, Dunb, 28 Jan, very large count for Clyde (AGG).

Tufted Duck *Aythya fuligula*. Breeding numbers above average L Ken, Kirk (ADW), and thought to have increased Shet (RJT); but decreased Wigt, at Mochrum (JGY), and 3 Rhinns of Galloway lochs, where 3 prs contrasted with 10 in 1966 (TH). Present in summer at two Banff lochs but still no breeding record for county (JE, RH).

Pr Shildaig Bay, Gairloch, W Ross (where rare), 30 Apr (ENH). Peak autumn numbers on Moorfoot reservoirs 450 on 22 Sept, a usual date for arrival of migrants (DGA, EMS, RWJS). Nine breeding ♀♀ and juvs ringed L Leven (500 prs breed) recovered from 9 Sept onwards SW in Ireland, but two 1968 autumn-ringed adults later shot SE in Northumberland (IKM).

Pochard *Aythya ferina*. Though not necessarily comprehensive, only reports of breeding (in small numbers) are from Ork (probably), Angus, Perth, Fife and Midl. First recent summer record for Caith, pr L Sarclet 20 July (GMSE).

Winter flock Duddingston, Midl, fell from 8000 on 20 Jan to 3000 on 10 Feb and 120 on 16 Mar; rose from 100 on 13 Oct to 5000 on 23 Nov; the birds feed on the sea at night (DRA). Peak L Leven 625 on 15 Feb; post-breeding assembly 95 on 5 June; autumn 685 on 18 Sept, 1840 on 8 Oct; winter 785 on 20 Dec (AA, CRGC, IKM, JHS), which links with Kilconquhar, Fife, peak 1450 on 15 Dec (DWO). At Yetholm L, Rox, 129 on 26 Oct was record (RSB).

A presumed Tufted x Pochard cross (cf. 5: 42) Duddingston with Pochard 1 Jan and 16-29 Nov (DRA).

Goldeneye *Bucephala clangula*. Usual scatter of summering: Caith, 5 L Hielan (DGs); E Inv, ♂ Spey Dam, Laggan Bridge (DNW); Kinross, all months, with late-Aug increase (AA, CRGC, IKM, JHS); Fife, all months, peak 6 Kilconquhar 15 June (DWO); Wigt, pr Mochrum (JGY). Also casual records of some 7 birds in June/Aug in E Inv (MIH, RAH), Moray (RAH), Aber (ADKR), Midl (DGA, EMS, RWJS), Wigt (JLFP).

Biggest winter concentration 2000 Seafield, Leith, Midl, both ends of year (DGA); still 300 on 13 Apr (DIMW). Peak Methil, Fife, 800 on 23 Mar, with main emigration 3rd wk Apr (DWO), as at L Leven, where up to 400 till mid month (JHS). At the Almond estuary, Midl/W Loth, 400 on 17 Feb was easily a record, though numbers have been increasing for years (TCS). Autumn arrival Speyside late (2nd wk Oct) and smaller than usual (DNW); first big influx L Leven in early Oct, 158 on 8th, peak 350 on 15th (AA, CRGC, IKM, JHS).

Long-tailed Duck *Clangula hyemalis*. Summer: ♀ lingering Fair Isle to 12 June (RHD); ♀ Gladhouse, Midl, 29 June and 7 July (DGA, EMS, RWJS). Usual E coast winter flocks, but 50 Barassie, Ayr, 25 Feb interesting as scarce in W (especially in S) (AGG). First of autumn Fife Ness 15 Sept (JD, RWS). Singles inland: L Magillie, Stranraer, Wigt, 2 Jan (RCD); Duddingston, Midl, the same day (MAMcD); Kilconquhar, Fife, 14 Jan (DWO); Lindores, Fife, 30 Mar-18 Apr (AMMF).

Common Scoter *Melanitta nigra*. Little information from breeding areas, but young seen on a Caith loch in June (PMcM); bred at N Perth site used 1951-56 (and doubtless since) (NCM, VMT). Pr on loch W Suth 18 May (breeding has been recorded in N and SE but not W Suth) (HDS).

Affected by Tay oiling in early Mar, 167 picked up, mostly Fife (5: 194), and 50 oiled birds, mostly ♂♂, Fife Ness 4 Mar (DWO). Count 173 Whiteness Head, Inv/Nairn, 8 Dec provides first record for Nairn (MIH). Off Portmahomack, E Ross, 2000 on 18 July were rather early for such numbers (MTB, GMSE).

Velvet Scoter *Melanitta fusca*. No reported changes in status. Noted passing N at Rattray Head, Aber, 7-11 Sept, peak 50 in 2 hrs on 8th (MW).

***Surf Scoter** *Melanitta perspicillata*. Pr Gullane Pt 15 Sept, first for E Loth (RO, WKR) (5: 280).

Eider *Somateria mollissima*. The species worst hit by Tay oil in early Mar, 1127 collected, mainly Fife (5: 189), this being most important Scottish wintering area; many ringing recoveries, most from Aber (JJDG). Tentsmuir, Fife, produced many young, compared with disastrous 1967 breeding season (DWO). A rough E Loth count from Aberlady to Fidra 19 July suggested that numbers of moulting ♂♂ were up (RWJS). Counts of the Seafield, Leith, winter flock (built up since 1960) gave 1800 early in year, 1 on 13 Oct, increasing to 1500 on 8 Dec (DGA).

***King Eider** *Somateria spectabilis*. A ♂ 7 mls NE of Lerwick, Shet, 12 Jan-19 Apr (DC, JHSi) (5: 172).

Goosander *Mergus merganser*. Good breeding season Kirk indicated by 61, most 1st-W, L Ken 15 Sept, the largest post-breeding flock there for some years (ADW).

Count 40 Ythan, Aber, 18 May (NE). Still 40 N Esk mouth, Angus, 19 June (GMC). Beaulay Firth winter counts 200 on 27 Jan, 125 on 18 Feb (RHD), 291 on 19 Oct, 432 on 27 Dec (MIH). More wintering Moorfoots, Midl, than usual, 8 arriving Rosebery 8 Sept, total 18 in area by late Nov (DGA, EMS, RWJS). Exceptional numbers, mostly ♂♂, arrived Shet in Dec, small parties being seen on fresh and salt water (RJT); same influx Fair Isle (where 14 previous records all of single birds), 13 on 10 Dec, 13 (3 new) on 11th, all ♂♂ but one, declining to 1 on 16th, some found dead suggesting poor condition (RHD).

Red-breasted Merganser *Mergus serrator*. Little comment on breeding status, but continues increase Dumf (JGY), where up to 40 Water of Ae in July (HO), and still 18 eclipse ♂♂ on Nith at Kinghorn 18 Aug (JKRM). Scattered inland records outside breeding season. Usual early autumn flocks of 200-300 E Loth coast (KSMcG), 300 N Esk mouth, Angus, 12 Aug (GMC), 200 Cromarty Firth, E Ross, 10 Aug (NE, JAL), but no count of big winter flock in Beaulay Firth.

***Smew** *Mergus albellus*. Summer: ♀ Cameron Res., Fife, 15-18 June (AM MF, DWO). Winter (redheads unless specified) to 24 Mar and from 24 Dec: Kirk, ♂ Carlingwark 14 Jan (GAF), 1 L Ken 14 Jan and 24 Mar (DS, ADW); Renf, 2 Barr L 2 Jan-3 Mar (RGC, AGG) and 28 Dec (DCS); Midl, 1 Glencorse/Threipmuir 5 Jan-3 Mar (TB, MJE, MAMcD), 1 Duddingston 19 Mar (DRA), ♂ Harperrig 26 Dec (JBa); Fife, 1 St Andrews 11 Jan (PGTB) and 30 Jan (DMW), 1 dead Tentsmuir late Feb or early Mar (DMW), 1 Methil 10 Mar (JW); Perth, ♂ Stormont, Blairgowrie, 11 Feb (ABe); Moray, pr L Na Bo and L Oire in Mar (RH); Ork, ♂ Westray 2-3 Mar (EB).

Shelduck *Tadorna tadorna*. No comment on coastal breeders. Increased in last 2 yrs L Lomond to about 70 birds and 6 breeding prs 1968 (ETI); up to 8 prs bred at inland L Leven colony, where some

present any season and breeders returned Mar to give counts of 21 on 12 Apr and 7 May (AA, CRGC, IKM, JHS). Others inland: 1 L Rhynd, Braco, Perth, 10-11 Feb (per JMi); 1 Gladhouse, Midl, 21 Apr (EMS, RWJS); 6 L of the Lowes, Ayr, 28 Apr (AB, JMcD, RMcF). Birds leaving Aberlady, E Loth, high to E on 13 July (17) and 15th (18) thought to be on moult migration to Heligoland Bight (DJ, RWJS). Dumf post-moult midwinter population censused at 700-800 (JGY).

Grey Lag Goose *Anser anser*. Bred 13 (possibly 25) sites Kirk/Wigt, 120 nests known, 230 goslings, 494 failed or non-breeders counted, all nests at one site deserted after disturbance (JGY). Expanding feral population makes it hard to tell which birds are native stock, so merely note: pr reared young L Leven (eggs hatched 1966, pr present 1967) (JHS); 5-6 broods (35 birds) on a N Perth loch (VMT); 9 goslings Tiree, I Heb (CST); 60 prs Caith is twice population 10 yrs ago (DMS); but decreasing Lewis, O Heb (WAJC). Usual disabled birds all summer Lochmaben and Caerlaverock, Dumf (JGY), and Strathbeg, Aber (NE).

Spring departure: N over Dalry, Kirk, 13th, 14th, 15th and 22 Apr (ADW); N up Strathardle, Perth, 11 Apr (VMT); most gone from Kinross by 3rd wk Apr (JHS); 28 NW at Butt of Lewis 25 Apr (NE); 3 St Kilda 27-28 Apr and 4 May (IDP).

First of autumn arrived with Pinkfeet on 29 Sept, noted Fair Isle (RHD), Ork (EB), Speyside (DNW), and 30 Sept Kinross (JHS). Much passage noted throughout Oct (and later), with good movement Speyside (DNW) and S over Sma' Glen, Perth, on 28th (JHW). Firsts: Moray 2 Oct (THJ); Banff 5-6 Oct (JE); Aber (NE), Midl (EMS, RWJS), Rox (RSB), 6 Oct; 1200-1500 Meikleour, Perth, 8 Oct was early for such numbers (VMT). Though the 61,000 counted nationally 9-10 Nov (60,000 in Scotland, of which 31,000 in Perth) was 8000 up on 5 Nov 1967, it was thought there was no great change in population; 1968 was worst reported breeding season for these immigrants, with only 5.9% young birds and 1.3 average brood size, even lower than very poor 1967 figures (MAO).

White-fronted Goose *Anser albifrons*. Reports of European race *A. a. albifrons*: 2 on 11 Feb L Eye, E Ross, evidently the only regular haunt of the race (RHD) (usually there are more, but there is some evidence that these are of the Greenland race); ad and 7 imm after snow Morton Lochs, Fife, 1 Apr (AMMF); 1 L Leven 13 Dec (JHS); but note that some of Greenland race *A. a. flavirostris* have predominantly pinkish-salmon bills (RE-H, ADW). All other records are of undetermined race unless marked G (Greenland).

Over 50 G still Lochinch, Wigt, 18 Apr (RCD, JGY); departure G birds from L Ken over Dalry, Kirk, 25 Apr (GAF); 4 NW Balranald, O Heb, 21 Apr (ARMcG); unusual spring numbers Fife, at Kilconquhar between 14 Feb and 18 Apr, peak 6 on 3 Mar (PGTB, DWO), Morton Lochs 3 G on 16 Apr (AMMF), 1 Cameron 13 Apr (PGTB); 3 Handa, W Suth, 10-14 May (per MJE).

Autumn birds Kirk about 24 Oct (DRW), 120 next day (DSw), main arrival by 10 Nov (ADW), as in Wigt (RHM); 9 Fair Isle 24 Oct and G shot 28 Oct (RHD); Tankerness, Ork, where small flock wintered, 20 back on 25 Oct (EB); 2 Cameron 27 Oct (PGTB); 25 G at L Lomond 26 Oct (AGG). About 100 G in Calder and Watten areas of Caith as usual in winter (DMS). Casual records away from winter areas: Aber, 2 Cotehill 20 Jan, 2 Strathbeg 24 Mar (NE), 1 there 1 May (MW); Perth, 4 G Madderty 2 Mar (VMT); Kinross, G on 20-22 Jan (JHS); E Loth, 1 Aberlady 1 Dec (DJ); Dumf, up to 11 Caerlaverock from 28 Dec (RES, JGY). Nov-Dec flocks Kirk held no more than 10%-12% young birds (ADW).

***Bean Goose** *Anser arvensis arvensis*. Regular but now small flock near Castle Douglas. Kirk, 8 Jan-24 Feb, peak 17 on 10 Jan; 14 returned

31 Dec (possibly 15 a week earlier) (ADW). R Fruin mouth, L Lomond, Dunb, 6 on 14 Jan (DJL). The small group that appears in the Slains district of Buchan, Aber, in the closing months of each year reached exceptional numbers in Nov; counts Oct 23rd (21), Nov 8th (107), 23rd (63), 30th (41), Dec 10th (9) (CJF, AR, WM).

Pink-footed Goose *Anser arvensis brachyrhynchus*. Spring: marked Speyside passage mid Apr to early May, last 6 on 12th (DNW); 150 N over Balmacaan, Inv, and 90 N up L Ness 4 May (MIH); 1 St Kilda 4th and 7 May (IDP); 150 NW 5 May and 200 NW 7 May Balranald, O Heb (ARMcG). Last 70 Solway (Caerlaverock) 22 May (JGY); 4 L Leven 17 May (JHS); 55 Methven Moss, Perth, 7 May (VMT); 350 Strathbeg, Aber, 1 May (NE). One Fair Isle 10 May-2 June (RHD). Pricked birds in summer L Leven (JHS) and Cameron (DWO). One near Brodick 11 Apr, first for Arran (ADKR).

Autumn: 4 L Leven 15 Sept built up to 200 by 28th (JHS); first 160 Annan, Dumf, 16 Sept (JGY); 100 Tentsmuir, Fife (DWO), and 75 Fair Isle (RHD) on 21st; 5 Gladhouse, Midl, 22nd (EMS, RWJS); first Strathbeg 23rd (NE). Great arrival 29 Sept: skeins up to 100 over Shet (RJT); 120 Fair Isle (RHD); many over Ork (EB, EJW); thousands all day Caith (DMS); passage S over E Ross (IDP); 500/hr most of day on 5-mile front Rothiemurchus, E Inv, radar showed large flocks drifted over Suth/Ross coast, swinging S in breaking cloud to Spey Bay, Moray, and heading up river (RNAS, DNW); movement continued 30th (DNW); main arrival 29th and 30th Perth (VMT), Kinross (JHS), and 30th Fife (DWO); counts reached 9000 L Leven 1 Oct (AA, CRGC, IKM, JHS), 2500 Strathbeg 6 Oct (NE), 6500 Caerlaverock 6 Oct (JGY); arrivals continued during Oct. National count 65,000 on 9-10 Nov (55,000 in Scotland, of which 25,000 in Perth and most of rest in E coast counties Aber to Peeb) same as 5 Nov 1967; only 11.7% young birds and average brood 1.4, lowest recorded, similar to 1967 (MAO).

***Snow Goose** *Anser caerulescens*. All presumed escapes, the Forth/Tay ones possibly from the Earl of Dundee at Birkhill, Fife (5:44). In Ork 4 white and 4 blue Lessers arrived L of Stenness midday 18 May and flew W on 19th (EJWi); singles with Pinkfeet at Errol, Perth, and Greylags near Birkhill 10 Nov (VMT); Fife, 2 Tayport with Greylags 20 Mar (DWO), 2 Auchtermuchty with Greylags 26 Mar (WWa), 1 Morton Lochs with Greenland Whitefronts 16 Apr, 1 Cameron with Pinkfeet 19-20 Oct (AMMF); 4 L Leven 14th and 27 Feb, 2 on 5-6 Mar, 1 with Greylags 8th and 11 Dec (AA, CRGC, JHS); blue ad ♂ Lesser at Caerlaverock, Dumf, 12 Feb, and single white one, evidently Lesser, all Feb and 28-31 Dec (JGY); 'Lesser' between Southernness, Kirk, and Nith, first seen with Barnacles, 3 Feb-9 Mar (MEG, PAL, PHS).

***Brent Goose** *Branta bernicla*. Small party reported Swona, Ork, 10 Nov (DG). Dark-breasted *B. b. bernicla*: Fife, 1 Eden estuary 31 Mar (CST); Angus, 5 Arbroath 27 Dec (RWS). All others Pale-breasted *B. b. hrota*: Ork, 11 E Mainland 11 Jan (MT-C); Caith, 9 Forss 2 Oct (AF); Kinross, singles 14-18 Jan, 6 Nov, first for Kinross (CRGC, JHS); Fife, 2 Tayport with Pinkfeet 30 Sept (AMMF), 1 Cameron with Pinkfeet 27 Oct (PGTB); Arran first record, 1 near Brodick 11 Apr (ADKR); Kirk, 1 with Greylags L Ken 10th and 16 Apr (PGTB, CJ).

Barnacle Goose *Branta leucopsis*. After leaving Caerlaverock, Dumf, on 23 Feb about 1000 returned 1 Apr, increasing to 2200 by 5th, falling to 1000 by 17th, last seen 550 on 23 Apr (JGY). On 29 Apr 110 passed N at St Kilda, where singles on Hirta 5th and 7 May and 27 on 11 May (IDP); at Butt of Lewis 10 passed 27 Apr (NE).

First in autumn Caerlaverock 75 on 18 Sept, 240 by 21st, 1880 on 23rd, 2200 midwinter; brood size and proportion of young good, and thought that not all Spitsbergen birds reach Britain every year, rather than that total stock has dropped (JGY). Other arrivals noted: Ork

from 29 Sept (EB); 39 Fair Isle 5 Oct (RHD); 2 L Leven 1 Oct (JHS); 12 Aberlady, E Loth, 5 Oct (MJE). Little data on W coast Greenland population. Usual scatter of singles and small parties Aber, Perth (maximum 18 Flanders Moss 28 Feb) (TMC), Kinross, Fife, Midl, E Loth, and doubtless elsewhere. Party 70 Lochinch, Wigt, 14 Feb (per JGY).

Canada Goose *Branta canadensis*. No data from I Heb, but breeding mentioned Wigt, where freely hybridising with Greylags (JGY); Dumf, numbers still low (JGY); Renf; Dunb, unsuccessful nest in bog (JM); S Perth (VMT); N Perth (HB). Two L Leven mid June (JLo per AA). Odd birds other seasons Midl (DGA), E Inv (LP, WAS), and 1 with White-fronts at New Galloway, Kirk, from 25 Oct (EF, ADW); 10 with Pink-foot and Greylags Lake of Menteith, 28 Oct, first for S Perth, seemed smaller than 40 resident birds at Rowbank Reservoir the day before (IMF, KT); 36 Carsethorn, Kirk, 9 Oct (RBT); 30 regularly flying down Nith in Dec (EBd).

On southernmost of Murray's Isles, Fleet estuary, Kirk, 10-12 in flightless moult 19 June (RHM). Beaully Firth moulting birds passed low over Inverness towards firth 1 May (JMo); peak count 233 on 9 June (MR); 221 (of about 250) caught 10 July, with many Yorkshire ringing recoveries, also a Canada x Barnacle hybrid (DNW); possibly associated records, 27 Tynninghame, E Loth, 18 Aug and 4 on 1 Sept (TB, EMS, RWJS), and 50 'geese' flying S over Perth 23 Aug (PFJ).

Mute Swan *Cygnus olor*. Imm ringed St Andrews, Fife, 1964 recovered Glasgow 13 Jan (JLSC). Some affected by Tay oil in Mar but survived cleaning relatively well (JJDG) (5 : 189).

Whooper Swan *Cygnus cygnus*. Spring counts of 5 1st-W birds in 162 Leslie, Fife, 10 Feb (KAMcK), 3 in 84 near Dumfries (JGY), 2-3 in record herd of 68 L Ken 17 Mar (ADW). Jan/Feb 250 L Leven decreased to last 3 on 3 Apr (AA, CRGC, JHS); 30 N at St Kilda 30 Mar (and odd ones landed about then) (HK); small flocks N over Dalry, Kirk, 11th and 12 Apr (ADW); 25 N over Gairloch, W Ross, 10 Apr (IDP); 5 NW 11 Apr, 15 N 15 Apr Fair Isle (RHD); Mar/Apr departures Ork and Shet (EB, RJT). Usual June/Aug records of summering birds: 3 Perth (WEW); 1 Aber (MW); 5 Inv (RAH, MR, DNW); 1 Moray (RAH); 2 Caith (JND, DMS); mostly like 3 on S side of Beaully Firth, present for many years, with old injuries (MR).

Apart from odd birds, autumn arrivals from 29 Sept: Shet, from 30 Sept (RJT); Fair Isle, 4 on 30 Sept, 4 on 1 Oct, passage till 7 on 4 Nov (RHD); Ork, from 1 Oct, 64 on a loch 5 Oct (EB); W Ross, 3 L Torridon 29 Sept (JAW); E Inv, pr + 3 juv L Mhor 2 Oct (WAS), Spey Dam 3 Oct (ACh, JC); Aber, 350 Strathbeg 6 Oct (NE); Kinross, 33 on 3 Oct (JHS); Fife, 5 Dairsie 4 Oct (VMT); Midl, 2 Gladhouse 6 Oct (DGA, EMS, RWJS); Kirk, 15 Bridge of Dee 16 Oct (JKRM). Few Insh marshes, E Inv, till after end of year, which is unusual (DNW). Fewer juv Shet than usual (RJT), 10 in 80 Spiggie in Jan 1969 (PKK); but 25 in L Leven peak of 346 on 22 Nov was best percentage in 3 winters (AA, CRGC, JHS).

Birds dying Blairgowrie area Feb/Mar (5 : 111) still under investigation but autumn peak only 21 against 100+ in 3 previous years (VMT).

***Bewick's Swan** *Cygnus columbianus*. Spring 8 Jan-10 Apr: Kinross, party 2 ad + 3 juv L Leven 22 Feb-7 Mar (CRGC, JHS); E Loth, 1 Gosford/Drem 11 Feb-10 Apr (DJ); Rox, 2 Rutherford 7-10 Mar grazing winter wheat with Whoopers (AJS); Dumf, 2 Kirkblane 6 Feb, 5 Caerlaverock 9 Feb (JGY); Kirk, 2 Islesteps 8 Jan-21 Mar, 3 on 9 Feb (WA, JGY). Autumn 10-24 Nov: Renf, 1 Barr L 10 Nov (RGC); N Arg, 5 Dun Add, Crinan, 10 Nov (AGG, TDHM); Kirk, 1 L Ken 23-24 Nov (RBT, LAU, ADW). Almost always seen with Whoopers.

Golden Eagle *Aquila chrysaetos*. Little comment on status in traditional areas. In SW Scotland 4 prs had territories but only one chick

fledged (ADW). Beyond breeding areas imms noted Ork, Hoy 17-21 June, Evie 18 Oct (EB), Stenness 27 Oct (per EB), Scorradaile 19 Dec (EJWi); a very large slow-flapping or soaring dark bird mobbed by gulls and Ravens in Unst, Shet, 6-19 June was clearly an eagle sp. (PA, JHu, ET, JT). A 2-yr-old ♀ was trapped at a nest (DNW) (5: 172). As egg collectors are still often mentioned in connection with this species it may be noted that two were fined £100 each, rather more than in the past (5: 124).

Buzzard *Buteo buteo*. At N of range bred usual sites Caith (DMS), and 2 nests Ork (EB); increasing Speyside, E Inv (DNW); probably 3-4 pairs bred Clack (see 4: 292) (TDHM); Dumf increase continues though rabbits scarce (one brood fed on woodland birds, another on wader chicks) and 7 nests in one wooded glen (JMx, JFY, JGY). Over a Kirk forest 11 in air at once late July (AAN-S).

Outside breeding areas, 16 scattered post-breeding and winter records of ones and twos from Shet, Fair Isle (2 Oct) and Aber to Ber and Rox in E and Lan and Renf in W, including 1 L Leven/Benarty Hill till Mar and from 18 Aug (JHS, WWi per AA) and 1 resident Edgelaw/Rosebery, Midl (DGA, WBr, DD, EMS, RWJS). At least 15 in Caith in Dec with mild weather up to Christmas but only odd birds after a cold snap then (DG, JARG, PMcM, KM, DMS).

***Rough-legged Buzzard** *Buteo lagopus*. Singles: Unst, Shet, 12 May (MS); Black Isle, E Ross, 20 May (DWO, HDS); Glen Esk, Angus, 29 Aug, exceptionally early (described) (BB, GMC, RH); Poolewe, 23 Sept, first for W Ross (ENH); Lieuary, Caith, 11 Dec (PMcM).

Sparrowhawk *Accipiter nisus*. Many sightings but for many areas rather little knowledge of present breeding strength, which is nowhere thought to be declining. Bred commonly (1 pr per 1000 acres woodland) Speyside, E Inv (DNW); 47 prs on territory Dumf, many shot, curious mixture of fledging success and chlorinated hydrocarbon poisoning, 48 young ringed by NSRG (KB, DMcG, HO, IP, JFY, JGY); widespread and increasing Kirk (ADW); quite common Wigt, 8 prs near Portpatrick (TH).

A ♀ Binscarth, Ork, 3 wks from 6 Nov (EB); up to 2 ♀♀ and a ♂ wintered as far N as Kergord, Shet, last seen 14 Apr (RJT); 5 spring passage birds Fair Isle 16 Apr-15 May; 4 in autumn 24 Oct-28 Nov (RHD), and 1-2 daily 20-24 Oct on Isle of May (IFS).

***Goshawk** *Accipiter gentilis*. No evidence of breeding but 2-4 birds summered in one part of Scotland (records between 3 Apr and 23 Oct) and a number of sightings on various dates in another (anon). Some of these birds may have originated in captivity. One (probably imm ♂) Kergord, Shet, 12 Nov 1967-8 Apr (DC) (5: 280); ♀ hit wires Finstown 14 May and had to be destroyed, now in Stromness Museum, first for Ork (EB).

***Black Kite** *Milvus migrans*. One chased by ♂ Hen Harrier on Rousay, Ork, 15 May (EB), 2nd or 3rd modern Scottish record (see 4: 295), subject to acceptance by Rarities Committee.

***White-tailed Eagle** *Haliaëtus albicilla*. Reintroduction: four 1968 chicks, 2 ♂♂ and 2 ♀♀, successfully released Fair Isle during autumn (5: 121) and at least 3 still there at end of year (RHD).

***Honey Buzzard** *Pernis apivorus*. Singles: Ork Mainland, Evie Hills 29 May accompanied by screaming Common Gulls, and Lyde area of Harray 18 July mobbed by ♀ Hen Harrier (EB); Fair Isle 20 July (RHD).

***Marsh Harrier** *Circus aeruginosus*. No suggestion of breeding. Stir, ♀ Lecket Hill, Campsies, 26 Apr (WKR); Aber, ♀ 26 June (MW), ♂ 15 Aug (RF), Rattray area, and apparently other unrecorded sightings; E Inv, ♀/imm Speyside mid May (DJ) and late July (DNW), first for E Inv; Fair Isle, ♀ 13-14 May, another ♀ 17 May (GJB).

Hen Harrier *Circus cyaneus*. Ork breeding numbers fractionally down on 1967 and success rather lower, mainly because of bad spring weather (EB); some increase in SW Scotland (RCD, ADW).

N of breeding range, ♀ Fair Isle 3 May and ♀ 27-28 Nov (RHD). Autumn passage on Spey, E Inv, scarce mid Sept to early Nov, some later (DNW). Usual sprinkling of autumn/winter reports Forth, including 'ringtail' hunting marshes 4th and 6 Nov and 13 Dec, and in hills 30 Dec in Kinross, first for Kinross (AA, JHS, WWi). Winter records widespread and numerous in SW Scotland (NSRG, ADW).

***Osprey** *Pandion haliaetus*. L Garten, E Inv, pr reared 2 young (and had 37,500 visitors), but other Speyside pr failed for 6th year, breaking one egg and failing to hatch the other, which was fertile, in spite of new (ringed) ♀; at third Scottish site, first used 1967, 3 young reared (one being recovered in Spain about 22 Dec), and fourth pr built nest nearby but did not lay; elsewhere in Scotland a fifth eyrie was found but no eggs were laid. First Speyside sighting 29 Mar, 5 birds by 4 Apr, last one about 10 Sept; widespread sightings, especially May/June, Moray Basin (particularly Inv) (Great Glen, L Laggan, Glen Cannich etc) (per HB, MJE, RJF, DNW). Spring records not unusual in Suth, but juv NW Suth 7 Aug is (DMcD). One L Lomond, Stir/Dunb, Apr-21 Aug, 2 on 1-2 June (MF, AGG, JM). Casual records: N Kinc, 1 Strachan 18 June (NP); S Fife, 1 SW over Kilconquhar 13 July (DWO); Ber, 1 over Tweed, Birgham, 18 May (MBa, MB, JMs); I Heb, 1 Islay, 1st wk June (DMcGr); O Heb, "reliable report" 1 Garynahine, Lewis, Oct (per WAJC).

***Hobby** *Falco subbuteo*. Singles: Fair Isle 4 June and 21 Aug (RHD); Lerwick, Shet, 25 June (MJE); Newburgh, Aber, 23 Sept (CJF, WM).

Peregrine *Falco peregrinus*. Mixed reports about breeding success: no evidence of successful breeding Shet (RJT), but one chick Fair Isle for first time since 1965 from 2 prs (RHD); breeding very poor Ork (EB); 3 prs successful W central Scotland (JM, DJN); widespread failure Dumf, with pressure from egg collectors, shooting by game preservers and suspected poisoning from agricultural chemicals (WD, JMx, JGY), but more successful in Galloway than 1967, 4 prs probably rearing 8 young, though others failed (ADW).

***Gyr Falcon** *Falco rusticolus*. One Fair Isle 16-17 Jan (GJB).

Merlin *Falco columbarius*. Suggestion of decline in some parts of Shet (RJT); bred fairly successfully Ork (EB); scarce in Spey (as usual everywhere), with 5-6 prs in an area of 200 sq mls (DNW); slight increase to some 5 prs Dumf (JGY).

Passage Fair Isle 25 Aug-19 Nov (RHD), and Aber Aug-Oct (WM, NP). A ♂ hunting streets of Campbeltown, Arg, 9 Mar (MJE).

Kestrel *Falco tinnunculus*. Good year Solway (ADW, JGY), but population evidently in good fettle everywhere; Speyside census 35 prs in 200 sq mls at Aviemore, E Inv, and nested at 2200 ft in Gaick (DNW).

Spring passage: Fair Isle to 20 June (RHD); Unst, Shet, singles 23 Mar, 18 Apr, 25 May (MS); 1 St Kilda 29 Apr (IDP). Autumn passage: Shet 19 Aug-24 Oct (RJT); Fair Isle to 28 Nov (RHD); 20 Fife Ness/Craill 6 Oct after E winds (DWO). Speyside winter birds are mostly ad ♂♂, and further autumn recoveries of local 1st-W birds came from England, France and Spain (DNW).

Red Grouse *Lagopus scoticus*. "Usual mixed reports" Dumf (usual elsewhere too) but generally slightly better season than 1967 (JGY); apparent slight increase Ork compared with recent years (EB); Kinross coveys smaller than in 1967 (JHS).

Ptarmigan *Lagopus mutus*. At least 2 prs Ben Griam Mor, N Suth, where thought extinct (IDP); no other changes noted.

Black Grouse *Lyrurus tetrix*. Continues slow increase Upper Niths-

dale and Forest of Ae but no detectable change elsewhere in Dumf (WD, JMx, HO); no other changes noted.

Capercaillie *Tetrao urogallus*. Little data on changes. Breeds up Spey to Newtonmore, introduced Cluny Castle, L Laggan, E Inv, 1968 (DSh); good breeding season Speyside, 50% of 80 shot Boat of Garten were 1st-W (cf. 21% of Zwickel in 1965—4: 209) (HBy, JPh, DNW). Single ♀♀ Tentsmuir, Fife, in spring, where occasional only (TGp, AMMF).

Red-legged Partridge *Alectoris rufa*. Introduced but not established in wild. One Crieff, Perth, 10 Jan thought to be escape (per VMT); at least 2 Doune, Perth, 12 June near known source (2: 96) (ARB, RTB); attempted introduction reported Floors Castle, Rox (per AJS).

Partridge *Perdix perdix*. Numbers still low Kirk but dry summer produced some good coveys (ADW); continues scarce Dumf but slight improvement generally agreed (JMx); slow to recover former numbers on high ground Midl (RWJS); coveys 4-6 L Leven against 10-14 in 1967 (JHS).

***Quail** *Coturnix coturnix*. One (?sp) seen Portsoy, Banff, in May thought to be from observer's 1967 introduction (JMCL). One Gifford, E Loth, 27 May-20 Sept (IH, AMcD). Others 11 June-23 July: Dumf, 1 Village of Ae 18 June (HO), calling Applegarthtown 22-23 July (RTS); E Loth, 1 between Pencaitland and W Saltoun 21 July (KSMcG); O Heb, 1 Balranald 11 June (ARMcG); Fair Isle, 1 on 4 July, 1 calling 9th, 2 seen 10th (RHD); Shet, heard two places Unst 14th and 16 July (ET, FJW).

Pheasant *Phasianus colchicus*. Generally very good season for wild-bred birds Dumf (NSRG); no other comments.

***Golden Pheasant** *Chrysolophus pictus*. The feral population which has survived in Kirk for several decades, mainly in areas of conifer forest, appears to be increasing and spreading; birds may be found near Newton Stewart and Gatehouse (ADW).

Water Rail *Rallus aquaticus*. Breeding data scanty: more than one calling late May near New Galloway, Kirk (LAU, ADW); 2 families seen Speyside, E Inv (DNW); in Ork bred near Kirkwall Airport (ROW), and freshly dead bird Westray 24 May (EB). Others after mid May: heard Lentran, E Inv, 8 June (MIH); Seil Island, N Arg, July (HEMD); 1 Balranald, O Heb, 31 July (ARMcG).

One St Kilda 18-19 Apr (HK). Autumn migrants Shet from 29 Sept (RJT) and Fair Isle from 30th (RHD). Usual wide scatter of winter sightings, including one Etterick Bay, Bute, 18 Dec (MJE). Peak counts: 12 in 3-mile walk Lochar Moss, Dumf, 12 Jan (JGY); 7 on 28 Jan, 8 on 7 Dec Kilconquhar Loch, Fife (DWO).

***Spotted Crake** *Porzana porzana*. At W Suth site (4: 372, 512, 568) 2 ♂♂ called (third successive year) 23 Apr-28 May, restarting 5 July after a lull (DMcD). In Kirk heard calling (once 2) near New Galloway in May, and at another local marsh 30 June-1 July (LAU, ADW); 1 calling Fetlar, Shet, 13 June into July (RJT); 1 heard and seen N Uist, O Heb, 2 June (ARMcG). Imm trapped in Fair Isle byre 29 Oct (RHD).

Corncrake *Crex crex*. Arrival: 1 on beach St Kilda 10-11 Apr (HK); 1 dead under wires Sanquhar, Dumf, 13 Apr (WD); odd birds Fair Isle from 17 Apr (RHD); Caith 24 Apr (AC); first O Heb (where common) 8 May (WAJC) and 11 May (WMA); 1 Isle of May 5-6 May (JP). Autumn: Fair Isle 5 Aug-29 Sept (RHD).

Over 20 calling Dumf 16-30 May (JGY); in contrast to complete absence of reports (surely unreal) from E counties of E Loth, Ber, Rox, Selk, Peeb, W Loth, E Stir, Clack, Kinross; pr bred (ISW), 1 called (DBK) Midl; 1 on Inchkeith, Fife, throughout June (per DRG); 1 Fife (DWO); 2 places Perth (EJ); 2 Angus (WBa, GBe, GMC); 6 reports May/

June (1 nest) N Kinc/Aber, more than for many years, but none heard after hay cut (WBa, NP, RIM).

Moorhen *Gallinula chloropus*. No status changes reported. Migrants Fair Isle 19-25 Apr (2), 1-5 June, 15 June, 4 between 3 Oct and 8 Nov (RHD).

Coot *Fulica atra*. Singles Unst 26 Apr-6 May and may still breed Shet Mainland (RJT). Peak post-breeding counts: 350 Strathbeg, Aber, 22 Sept (NE); 250 Forfar L, Angus, 9 Sept (GMC); 278 L Leven 11 Sept, down to 50 by year end (AA, CRGC, JHS); 407 Kilconquhar, Fife, 16 Sept, mostly juvs after good breeding (DWO); 470 (local record) Yet-holm L, Rox, 5 Oct, down to 60 on 16 Nov, repeating pattern of 1966 and 1967, but where the birds formerly tended to stay into midwinter (RSB). Winter flocks up to 400 on grass L Ken, Kirk, 18 Feb (ADW).

Oystercatcher *Haematopus ostralegus*. Slow increase in inland breeding Midl continues (RWJS); extending breeding range inland Shet (RJT), a common habit Ork (EB); increasing NE Fife, at least 5 prs Tentsmuir where first proved to breed 1967 (JD, DWO, RWS), also extending in E Neuk of Fife (DWO); numbers slightly reduced at some Kirk haunts (ADW); nesting area on shore near Port William, Wigt, deserted (WHM). Back Speyside 3 Mar, piping from about 15th, but many deaths in early Apr snowfall, 10 fresh bodies on 5 miles of road (RJF, DNW). Dumf/Kirk peak reached by late Oct when 20,000 between Gretna and Southernness (per JGY).

Lapwing *Vanellus vanellus*. Steady increase towards former numbers Ork (EB), O Heb (WAJC), Caith (DMS). First eggs Sanquhar, Dumf, 24 Mar in field where 50 later removed and replaced in farm operations (WW). Tendency to breed on higher pastures Kirk (ADW), and increased colonial nesting at higher altitudes Dumf (JMx, JFY).

Peak 5000 Paisley Moss, Renf, 26 Apr (RCDa, HG, IG). Flocks moving in from sea E Fife 8 Sept with E wind and rain; large numbers moving Fife Ness 19 Oct with E wind, mist and rain (DWO). Autumn flocks noticeably large in lowland Perth (VMT) and Oct/Dec numbers markedly increased Caith (DMS). Dumf/Kirk annual build-up 20-24 Nov, with Gretna to Southernness total 18,000 on 8 Dec (per JGY) and large numbers inland too (JSh). A 1967 Guardbridge, Fife, chick was shot Albuquerque, Algarve, Portugal, 7 Jan, about the furthest limit for Scottish birds (DCG).

Ringed Plover *Charadrius hiaticula*. No reported status changes. Pr (perhaps 3 prs) bred Leith Docks, Midl (CPR); inland nest in Highlands, Glenshirra Lodge, Laggan Bridge, E Inv (DNW); attempted nesting in ploughed field $\frac{1}{4}$ ml from sea at Fife Ness (DWO). Autumn peaks Fair Isles 8 July (14), 24 Aug (35), 29 Aug (40), 1 Sept (30) (RHD); 40-50 Glencaple, Dumf, 24 Aug appeared to be migrants (JGY).

***Little Ringed Plover** *Charadrius dubius*. Reared at least one chick in Clyde, first Scottish breeding (MF, DSt) (5 : 282). One Paisley Moss 7 May, first for Renf (HG, IG, GTW) (5 : 174).

Grey Plover *Charadrius squatarola*. As far N as Castlehill, Caith, 7 on 22 Feb (DMS). Peak 103 Eden estuary, Fife, 15 Apr (RWS). Single spring migrants: Dounreay, Caith, 12 May (PCh); Fair Isle 20 June (RHD). Very early autumn bird Fair Isle 5 Aug (RHD); 4 Glencaple, Dumf, 24 Aug, and 2 Carsethorn, Kirk, 31 Aug (JGY). Sept: 1 Whalsay, Shet, 15th (JHSi); 1 Fair Isle 26th (RHD); a few Ork, with 11 Sanday 22nd (EB); 6 Findhorn Bay, Moray, 5th (MM); peak 15 Montrose Basin, Angus, 22nd (MN).

Golden Plover *Charadrius apricarius*. No reported changes in breeding status. Two Mullach Mor, St Kilda, where breeding rare, 13 July (HEMD).

Spring passage: 300 *altifrons* (northern form) Gladhouse, Midl, 7 Apr

(EMS, RWJS); 34 *altifrons* St Kilda 28 Apr, 30 on 30 Apr, 15 on 7 May, 12 on 8 May (IDP). Autumn passage: Fair Isle 30 July-30 Oct, peaks 5 Aug (15), 24 Aug (40), 14 Sept (27), 2-7 Oct (30) (RHD); 350 Gladhouse 11 Aug (EMS, RWJS), 500 Howgate, Midl, 1 Sept (DGA); 150 Montrose, Angus, 16 Aug (GMC); peak 300 Skinflats, E Stir, 18 Aug (TDHM). From first 300 Glencaple, Dumf, 24 Aug, increased to 2000 by 20 Oct and 5800 by 8 Dec (per JGY); also very large numbers inland Kirk 30 Nov (JSh).

***Dotterel** *Charadrius morinellus*. Little information on breeding status; none in N Suth area where bred 1967 (4: 513, 569) (IDP). Two migrants Carnoustie Golf Course, Angus, 22 May (PGTB).

Turnstone *Arenaria interpres*. Hard to separate migrants from non-breeding residents. Up to 30 St Kilda village and camp throughout Mar, but fewer later (HK, PW). Inland: 1 Gladhouse, Midl, 11 Aug (EMS, RWJS). Flocks 100 and 50 N Uist 7 Feb actively feeding in grass fields at least a mile from the sea, a habit noted also $\frac{1}{2}$ ml inland from Whinnysfold, Aber, 30 Dec 1967 (DGA).

Snipe *Gallinago gallinago*. Thought to be increasing about Alnaharra, N Suth (EGH). Autumn: passage Fair Isle from mid Aug, peaks 6 Sept (10), 8 Sept (20), 14 Sept (25), up to 15 in Oct, with 40 on 24th (RHD); heavy passage Spey, E Inv, first half Oct (DNW); 50 Forfar L 9 Sept (GMC); peaks Gladhouse, Midl, 25 Aug (30), 8 Sept (60) (EMS, RWJS); only notable Dumf concentration 40 Caerlaverock 17 Oct (JGY).

Jack Snipe *Limnocryptes minimus*. Peak 12 Paisley Moss, Renf, 19 Apr (HG, IG). Autumn passage Fair Isle 3 Sept-14 Nov, mainly Oct, with 4 on 5th (RHD).

Woodcock *Scolopax rusticola*. Now breeding in good numbers in several Dumf Forestry Commission plantations, habitat previously thought unsuitable (ED, HO, JGY).

Rather scarce Jan-Feb in E Fife, but usual winter numbers Nov-Dec (DWO). Singles Kinraig and Nethybridge, E Inv, Jan, rarely overwinters Speyside (DNW). One Kergord, Shet, 25-28 Feb at N end of winter range (RJT). Nine migrants flew N at SE end of Arran at dusk 11 Apr (ADKR). Fair Isle autumn passage 1 Oct-17 Nov, mainly 18-26 Oct, with 150 on 24th, 100 on 25th, 75 on 26th (RHD).

Curlew *Numenius arquata*. Increased numbers bred E Fife (DWO); pr hatched 4 young Fair Isle, first breeding there (RHD); driven from some areas of Kirk by afforestation (ADW).

Autumn passage: Fair Isle from 27 June, peak 156 bird-days 3-6 July (RHD); July build-up L Leven to 350 on 30th, 1000 there Sept, dropping to 300 Dec wintering inland (AA, JHS); passage Kingoodie, Perth, late July and Aug, peak 550 on 23 July (HBo); 1700 Scotstown Rocks, Aber, 15 Aug (RF); 1800 Montrose, Angus, 19 Aug (GMC); increase to 700 Glencaple, Dumf, 24 Aug, and 1200 Caerlaverock 20 Oct (JGY); over 300 inland L Ken, Kirk, Sept (ADW).

Whimbrel *Numenius phaeopus*. Has not nested Ork for many years (5: 98), but at least 2 prs Eday 27 June behaved as if they had young (EB); possibly increased in some parts of Shet (RJT); pr holding territory Cambir, St Kilda, where breeding rare, July, but no suggestion of nest (RB, JDa, HEMD).

Spring passage Fair Isle 20 Apr-23 June (RHD); return to Shet from 22 Apr (RJT). Autumn passage Fair Isle 8 July-9 Sept (RHD) covers most records elsewhere; Fife from 13 July, with 18 flying S at Fife Ness 26 Aug (DWO). One calling with 2 Curlews near Selkirk 3 July, an odd date (AJS). Late one Isle of May 22 Oct (IFS).

***Black-tailed Godwit** *Limosa limosa*. No data from S Scotland colony. Pr arrived Shet 14 May, flying with 2 young 29 July (RJT).

A few winter, spring passage 7 Apr-11 May: Kirk, 1 near L Ken 17

Apr (JBw); Dumf, wintering bird Caerlaverock to 25 Mar, 4 there 17 Apr, 2 staying through summer (WA, JSk, JGY), 8 Cummertrees 24 Apr (ARB, RTB); Ayr, 1 Barassie 7th and 12 Apr (WB, RGC), 2 L of the Lowes 28 Apr (AB, JMcD, RMcF); Renf, 1 Paisley Moss 24 Apr, 17 on 26 Apr (RCDa, HG, IG); E Loth, 10 Seton Sands 24 Feb (HD), 1 Aberlady 27 Apr and 11 May (MJE, KSMcG); Midl, 1 Portobello 27 Jan (MFMM); Fife, good spring numbers with peak on Eden estuary 94 on 26 Apr (DWO); 1 St Kilda 2-7 May (IDP).

Autumn passage to 29 Sept: Shet, 1 Haaf Gruney 23 Aug, 1 Virkie 14 Sept (RJT); E Inv, 1 Whiteness Head 8 Sept (MIH); Aber, 1 Forvie 3 Sept (NE); Angus, 1 Forfar L 2-9 Sept (DGAd, RC, GMC, MD); Perth, 2 Kingoodie 29 Sept (HBo); E Stir, 1 Skinflats 7 Sept (RJWS); Fife, good numbers with peak 83 Eden estuary 8 Aug (DWO), 40 Tentsmuir Pt, where the flock seldom goes, 23 Sept (TGp), 4 Fife Ness 25 Aug (RJWS), 1 there 14 Sept (DWO); Dunb, 4 Cardross 14 Sept (JH); Ayr, 3 Barassie 3-4 Aug (RGC), 1 there 17 Aug, 23 Aug, 20 Sept (WB); Dumf, 25 Glencaple 17 Aug, increased to 50 on 24 Aug, 142 on 26 Aug, down to 47 on 17 Sept, 4 by 8 Oct (WA, JGY); Kirk, 47 Carsethorn 24 Aug (WA), and sightings of flock from Dumf; Wigt, 1 Stoneykirk 19 Aug (RCD).

Bar-tailed Godwit *Limosa lapponica*. No status changes noted. Flock 217 Kirkconnell Merse, Kirk, 13 June is notable for the area; date is at end of spring passage (JGY). One inland, where rare, Gladhouse, Midl, 25 Aug (EMS).

***Green Sandpiper** *Tringa ochropus*. Spring 15 Apr-4 June: Ayr, 1 L of the Lowes 20 May (AB, JMcD, RMcF); singles Isle of May 18-19 Apr (JHL, JP), 22-23 Apr (JADH); Fair Isle Apr 15th, May 10th, 11th, 13th, 27th (2), 29th, 30th (2), June 1st-4th (RHD); Shet, 1 Unst 12 May (MS).

Autumn 11 July-20 Oct: Fair Isle, singles 20th, 21st and 23 Aug (RHD); Ork, 1 Marwick 12 Aug (BC), 1-2 late July/Aug N Ronaldsay, 1 shot 21 Sept (per EB); Caith, 1 Bilbster 2 Sept (JARG); N Suth, 1 Durness 4 Oct, first record (CRMck, RJWS); Banff, 1 Troup Head 17 July (NE); Aber, 5 Ythan 3-15 Aug (NE), 2 Strathbeg 24 Aug-7 Sept (NE, MW); E Stir, 1 Skinflats 21 July (MH), 15 Aug (TDHM); Fife, 1 Kilconquhar 18 July (JARG), 6 Aug (DWO); Midl, 1 Gladhouse 11th and 17 Aug (EMS, RWJS); E Loth, 4 Aberlady 19 Oct (ALAL, IRu), 3 Tynningame 4 Aug (RWJS), 2 on 20 Oct (NJG); Rox, 4 dates 25 Aug-12 Sept Yetholm (RSB); Dumf, 1 Caerlaverock and Glencaple 6 Sept (JGY); Kirk, 2 Islesteps 28 Sept (RTS), 1 on 29th (JDo).

One Dreghorn, Ayr, Mar to 16 July, with 3 on 6-16 Mar, 2 in Apr (JL, AGS); 1 Parkgate, Dumf, 30 Mar (SLa, RTS). Midwinter: 1 near Kilconquhar, Fife, 3rd and 14 Feb (PGTB); 1 wintered 1967/68 and to end 1968 Tynningame, E Loth (TB, MJE, EMS, RWJS); 2 Bothwellhaugh, Lan, 24 Jan (KCRH); 1 Bowmont R, Yetholm, Rox, 30 Nov and 11 Jan 1969 (RSB).

***Wood Sandpiper** *Tringa glareola*. Pr bred at original Suth site, pr present at quite new N Suth site 16-18 May but no evidence of breeding (IDP); E Inv, 4-6 prs at one site, probably at least 2 prs hatched, 3 small young seen 23 June, also singing ♂ at hill lochan June (anon); displaying bird at new Perth site June (VMT); at a N Arg site, where in 1967 three were singing 15 June and pr evidently had young 5-6 July, 3 present first half June, but again formal proof of breeding not obtained (IH).

Spring migrants: Fair Isle 25 Apr (1), 25-28 May (1-2), 8 June (1) (RHD); Renf, 1 Paisley Moss 18-19 June (RGC, RCDa, IG). Autumn (only 4 records): 1 Ythan, Aber, 18 July (NE); 2 Kirk bank of Nith, first for county, 25 Aug (JGY) (5: 228); 1 N Uist 1 Sept (ARMcG); 1 Ardo, Aber, 2-13 Oct (NE).

Common Sandpiper *Tringa hypoleucos*. A few prs breed Ork, but still decreasing (EB); no other changes reported.

First arrivals from 7 Apr but mainly from about 17th: 7 Apr, 1 Clatteringshaws, Kirk (Mrs ADW); 10 Apr, 1 Ballinluig, Perth (THE); 17 Apr, 1 Langholm (ELOC) and 1 Nith, Dumf (JKRM), 1 Yetholm, Rox (RSB); 18 Apr, 1 Stranraer, Wigt (JGY); 19 Apr, 1 Elliot, Angus (MN); 21 Apr, 1 Aberlady, E Loth (KAMcK), 7 Threipmuir, Midl (TB), 15 Moorfoot reservoirs (EMS, RWJS); 22 Apr, Banchory, N Kinc (DGA), Kinlochewe, W Ross (IDP); 23 Apr, 1 Eden estuary, Fife (DWO, RWS), 1 L Leven (AA, JHS); 24 Apr, start of migration Fair Isle, lasting to 24 June, but mainly 10-29 May (RHD).

Autumn passage Fair Isle 30 July-29 Sept, peak Sept 2nd (3), 3rd (5) (RHD). Other final dates: 21 Sept, 1 Montrose, Angus (AN, MN, GS); 28 Sept, L Leven (AA, JHS); 6 Oct, Gladhouse, Midl (EMS, RWJS); 28 Oct, Perth (DMcD).

Redshank *Tringa totanus*. Increasing Shet (RJT); no other reported change in breeding status.

Movements confusing, but influx of several hundreds in E winds Fife Ness 15 Apr (DWO); marked immigration to Nith estuary, Dumf, 23-24 Aug (JGY). For first time known 1 wintered Yetholm, Rox, 1967/68 well inland (RSB). Seven shot Caerlaverock, Dumf, in Nov were all Iceland birds *T. t. robusta*; also 14 from Kirk (JGY).

Chick ringed Kinross 31 May killed N France (51°00'N, 2°07'E) 10 Aug (JHS).

***Spotted Redshank** *Tringa erythropus*. Winter: 1 Redcastle, E Ross, 27 Jan (RHD, MIH). Spring: 2 Caerlaverock, Dumf, 12 Apr (JGY); 1 Doonfoot, Ayr, 10th and 20 Apr (WB); 1 St Andrews, Fife, 11 May (RWS).

Many autumn 14 July-5 Nov (singles unless stated): Shet, Whalsay 29-30 Aug (DC, JHSi); Ork, Oyce and L of Brockan 6th, 9th and 12 Aug, Gairsay 15 Aug, Harray 15 Sept, Sanday 22 Sept (EB), Orphir 5 Nov (EJWi); E Inv, 2 Beaully Firth 22 Sept-3 Oct (MIH); Moray, 9 Findhorn Bay 5 Sept (MM); Aber, Ythan 22 Aug, 8 Sept (4), Cruden Bay 6 Sept, Forvie 8 Sept, Collieston 22 Oct (NE); Angus, Kinnaber 2 Aug, 8 Sept, Montrose 5th and 8 Sept, Forfar L 28 Aug, 2 Sept (GMC); Kinross, 2 L Leven 28 Aug (AA); Stir, Skinflats 26 Aug (MH), 10 Sept (3) (WKR), 2 Milton of Campsie 13-14 Sept (WKR); Fife, Eden estuary 10 Aug (VMT), 7 Sept (RJWS), 9 Sept (6) (WKR), 18 Sept (4) (DWO); Isle of May 28 Aug (KP), 12 Sept (GLAP), 7 Oct (DJN, BU); Midl, Gladhouse 8 Sept (EMS, RWJS); E Loth, Aberlady 14 July (2) (DJ), 16 Sept (7) (WKR), 5 Oct (EMS, RWJS), 17 Oct (DJ); I Heb, Baugh, Tiree 28 Sept, 3 Oct (CST); Dunb, Ardmore Pt 31 Aug (RJWS); Lan, Hamilton 9th, 16 Sept (RJWS); Ayr, Barassie 7th, 14th, 15th, 20th (2), 28 Sept (WB, RGC, HG, IG), Doonfoot 19 Sept (WB); Kirk, Rough Firth 14-20 Oct (GT), Carsethorn 15 Oct (DSw); Dumf, 2 Glencaple 24 Aug (JGY), 8 Stanhope 26 Aug (WA, JGY).

Greenshank *Tringa nebularia*. Present June in new Perth locality (VMT); otherwise no reported changes in breeding status.

Spring return: 27 Mar, 1 Clachnaharry, E Inv (WMM); 29 Mar, 1 Kinlochewe, W Ross (IDP); 31 Mar, 1 Doonfoot, Ayr (possibly a wintering bird) (WB); 1-2 Apr, 1 Paisley Moss, Renf (HG, IG); 2 Apr, 1 Ardmore, Dunb (JH); fair scatter of later spring records. Back Speyside, E Inv, about 10 Apr (JC); 10 L Torridon, W Ross, 9-10 Apr (ENH, JAW). Autumn passage N Fife from 19 June (TGp), peaks 27 on 13 July (DWO) and 23 on 24 Aug Eden estuary (RJWS). Other counts: 18 Findhorn Bay, Moray, 5 Sept (MM); 10 Glencaple (JGY) and 20 Stanhope, Dumf (HMR), 24 Aug; passage to end Oct.

Winter: Wigt, 3 to 21 Mar Sandmill (RCD); Kirk, 1 Rough Firth in Dec (GT); Dumf, up to 3 winter 1967/68 Caerlaverock (JGY), 4 Caerlaverock, 2 Annan, 2 Torduff counted 8 Dec (RTS, JGY); Ayr, 1 Doonfoot 24 Feb, 9 Mar, 31 Mar as above, many dates 7 Aug-31 Dec (WB, GAR), 1 Alloway 3 Feb (RBT); I Heb, 1 Bridgend, Islay, 18 Feb (MFMM);

Kinross, 1 L Leven 23 Nov (AA, JHS); E Loth, 1 Aberlady 20 Dec (DJ); Fife, 1 Boarhills 14 Jan (DBMcG); Aber, 1 Ythan 4 Feb, 7 Feb, 22 Mar (NE, ADKR); E Ross, 1 N Kessock, 1 Munlochy Bay, 27 Jan (RHD); SE Suth, 1 L Fleet 19th and 26 Jan, 1 L Evelix 14 Dec (DMcD); Caith, 1 Sandside Jan-Mar (JFa, DMS); W Ross, a few wintered L Torridon (IDP); O Heb, 1 S Uist, 6 N Uist, seen from car 5-8 Feb (DGA, DJ).

Knot *Calidris canutus*. Large late-Apr flock Sanday, Ork, where spring passage irregular (EB). Several Balnakill, N Suth, 27 May-15 June, probably commoner N Coast than records suggest (DCH, GSu). Autumn flock 500 Eden estuary, Fife, by 13 July (DWO). Some movement noted about 23-24 Aug: Shet, odd birds from 8 Aug, party 14 on 23rd (RJT); Fair Isle peaks 7th (5), 8th (12), 24th (5) (RHD); Moray, 50 Burghead 23rd (RAH); E Ross, 50 Udale Bay 25th (MR, EIY); Dumf/Kirk, first 200 Nith 24th (JGY). No inland records.

Purple Sandpiper *Calidris maritima*. Little comment. Autumn arrivals Fair Isle from 6 July (2), increasing to 15 on 28th, 22 on 31st (RHD); first back Isle of May 23 July (NJG). Whiteness Head 11 on 6 Jan, 7 on 8 Dec, evidently first for E Inv and/or Nairn (MIH). Big flock 75 S Uist, O Heb, 8 Feb (DGA, DJ).

***Little Stint *Calidris minuta*.** Scarce 1968. Spring: 1 Handa, W Suth, 8-15 June (GSu). Only a few autumn, 26 Aug-11 Oct, most 7-18 Sept: Shet, 2 Whalsay 11 Oct (JHSi); Fair Isle, singles 26 Aug, 17 Sept (RHD); Angus, 1 Kinnaber 12 Sept (GMC), 1 Invergowrie 18 Sept (Hro); E Stir, 2 Skinflats 7 Sept (RJWS); E Loth, 1 Barns Ness 13 Sept (MJE); Ayr, 1 Doonfoot 9 Sept (GAR).

***Temminck's Stint *Calidris temminckii*.** One Paisley Moss, Renf, 22 May (IG, GTW); 1 Aberlady, E Loth, 8 Sept (IG).

***Pectoral Sandpiper *Calidris melanotos*.** One Skinflats, E Stir, 31 July (AGG, TDHM).

Dunlin *Calidris alpina*. Failed to breed at three well established Dumf sites, the only apparent common factor being slag spreading (JGY); but has also lately decreased Kirk, where absent from some former sites (ADW).

Little migration data. Birds wintering Fife Ness had been ringed in Finland, Sweden and Denmark (DWO).

***Curlew Sandpiper *Calidris testacea*.** One Barassie, Ayr, 19 May (WB). Scarce autumn 1968, 10 Aug-11 Oct: Shet, 1 Whalsay 11 Oct (JHSi); Aber, 1 Ythan 9 Oct (ADKR); N Fife, 1 Eden estuary 10 Aug (VMT), 2 on 18 Sept (DWO); Isle of May, 1 on 2 Oct (ADKR); E Stir, 1 Skinflats 7 Sept (RJWS); Ayr, 1 Barassie 14 Sept (RGC).

Sanderling *Crocethia alba*. Rather scarce E Fife 1968 though a few non-breeders summered as usual (DWO). Spring departure: 2 Fair Isle 27 May-3 June (RHD); 1 Unst, Shet, 26 May (RJT); 6 Balnakill, N Suth, 8-15 June (GSu), perhaps summering, as 2 on 21 July (DCH). Autumn return: Fair Isle July 15th (2), 20th-21st (2), and 1 Aug-14 Sept with 7 on 25 Aug, 5 on 3 Sept (RHD); Shet, from 7 Aug (RJT); Ork, 12 N Ronaldsay 5 Aug (EB); O Heb, 3 N Uist 26 July (HEMD, ARMcG); Banff, 12 Portgordon 24 Aug (JE). Big winter flock 500 S Uist 8 Feb (DGA, DJ).

Ruff *Philomachus pugnax*. Wintered Aberlady/Luffness, E Loth, up to 26 birds 1967/68, last 21 Apr; 3 Aberlady 27 Aug and up to 9 again wintering (DJ). Two lingered Tynninghame, E Loth, 18 Aug-10 Nov (TB, EMS, RWJS). Male trapped Fife Ness 17 Feb (JD, DWO, RWS); 1 Unst, Shet, 30 Mar (MS); 2 Eden estuary, Fife, 27 Apr, 1 on 28th (DBMcG, RWS); only other spring record, pr displaying Fetlar, Shet, 23-27 May (RJT).

Autumn passage 26 July-9 Oct, especially 3 wks from 2 Sept: Shet,

14 Aug-22 Sept, 20 Virkie 8 Sept (RJT); Fair Isle, 1 on 26 July, 2 on 23 Aug, 15 on 2-3 Sept, 10 on 4th, 17 on 5th, 16 on 6th, down to 4 on 10th and last on 23 Sept (RHD); SE Suth, parties up to 12 on 4-25 Sept (DMcD); Aber, peak 9 Cruden Bay 6 Sept (NE), last 2 Forvie 9 Oct (ADKR); Angus, peak 27 Forfar L 2 Sept (DGAd, RC, GMC, MD); Kinross, 1 L Leven 2 Sept, 9 on 18th, 2-4 to 29th, 4 on 6 Oct (AA, JHS); E Stir, peak 21 Skinflats 15 Sept (WKR); E Fife, good numbers 27 July-6 Oct, peaks Eden 8 Aug (6), 18 Sept (10), Fife Ness 14 Sept (5) (PGTB, JMcF, DWO); Midl, 10 Gladhouse 8 Sept, 2 on 22nd (EMS, RWJS). More than usual in W: I Heb, 3-5 Baugh, Tiree, 28 Sept, 3-4 Oct (CST); Dunb, 1 Endrick mouth 24-25 Aug (DJL); Renf, 3 Paisley Moss 15-18 Aug (HG, IG), 8 Barr L 11th and 14 Aug (HG, RAJ, GTW); Lan, 4 Hamilton 17 Sept (MJE); Ayr, 2 Broomberry 9 Sept (GAR), 6 Barassie 27 Aug, 2 on 7th and 11 Sept (HG, IG, GAR, GTW); Dumf, 2 Glencaple 24 Aug, increased to 10 on 26th (JGY), 14 Caerlaverock 12-20 Sept (JGY), 1 Priestside and 1 Mid Locherwoods 28 Sept (RTS).

**Avocet Recurvirostra avosetta*. One landed briefly Aberlady, E Loth, 13 Jan (PJ, AFL, RMcG); noted 33 mls up Forth at Skinflats later that day, first for E Stir (WKR); probably same as one found dead Fife Ness 25 Jan after gale (JDB) (5 : 112).

**Red-necked Phalarope Phalaropus lobatus*. First year of 3-year census put Scottish population at 50-60 prs (MJE). Migrant near Lochmaben, Dumf, 19 Apr (RTS); first back Shet 20 May (RJT); pr Fair Isle 14-15 June arrived in fog (RHD); 1 St Kilda, first record, early July to 15th (HEMD, MM). Autumn: 1 Doonfoot, Ayr, 1 Aug (WB); 1 Skinflats 18 Aug, first for E Stir (RE, MH).

Great Skua Catharacta skua. Good numbers bred Ork, evidently increasing (EB); 2 prs with eggs St Kilda, 6 birds 12 May, probably 4 prs (IDP, MJHR); pr bred new O Heb site Sheshader (WAJC); at least 2 prs Handa, W Suth, and unconfirmed reports of breeding on mainland of NW Suth, where up to 7 recorded inland (IDP).

Three off N Carr Lightship, Fife, 16 Mar (ADKR); seen at sea Shet 12 Mar, back on land about 9 Apr (RJT); back at O Heb colony 10 Apr (IMcL); first Fair Isle 5 Apr, mainly from 12th, increases 17th, 19th (RHD). Autumn: Angus, 23 records 11 July-11 Oct (GMC); E Fife, from 12 July but rather fewer than usual (PGTB, DWO); E Loth from 14 July (EMS, RWJS); Aber counts, all flying N, 8/hr Rattray Head 18 July (MW), 12/hr Buchan Ness 25 Aug (NE), 4/hr Rattray Head 5 Oct (MW). Last singles: Skinflats, E Stir, 20 Oct (MH); Fair Isle 25 Oct (RHD); Forvie, Aber, 10 Nov (NP).

**Pomarine Skua Stercorarius pomarinus*. Spring passage in NW: 1 between Harris and St Kilda 10 May (IDP); light-phase ad between Skye and N Uist 13 May (ARB, RTB); also 1 near Fair Isle 17 May, 1 over island 13 June (RHD). Early ad Culbin Sands, Moray, 22 July (MNe, CR); 1 Fair Isle 4 Sept (RHD); dark-phase ad Isle of May 30 Aug, 5 Sept (GAP); evident ads Oct 5th (2), 6th (1), 7th (2) passing NW off N Ronaldsay, Ork (GWW, EJW, DBW).

Arctic Skua Stercorarius parasiticus. Bred Handa, first time in W Suth (IDP); no other changes in breeding status reported. Usual odd summer birds other areas: 1 Rattray Head, Aber, 16 June (MW); 1 Tentsmuir, Fife, 18 June (TGp); 2 Seil Island, N Arg, 4 July (HEMD); 2 Sound of Jura 16 June (AGG); 2 Horse Island, Ayr, 15 June (RGC, JMcL); 2 Barassie, Ayr, 4 July (DHL); 1 Troon, Ayr, 8 July (RGC). First back Shet 24 Apr (RJT); Fair Isle from 17 Apr, increases 22nd and 30th. Decreased there in Aug, last on 15th and 30 Sept (RHD); various records of passage elsewhere to end Sept; good passage E Fife, 15 Eden estuary 10 Aug (VMT); 10 N, 1 S in an hour Buchan Ness, Aber, 8 Sept (NE), but 10/hr moving S at Rattray Head on 11th (MW).

October : 3 N at Rattray 5th (MW); 3 Skinflats, E Stir, 6th (MH); 1 Fife Ness 8th (AMMF).

Imm skua, presumably Arctic, chasing gulls in Edinburgh Meadows for 5 minutes 13 Dec (JBM).

***Long-tailed Skua** *Stercorarius longicaudus*. Sub-adult in Arctic Skua colony Fair Isle 27 June-2 July, and one 20 July (RHD); 2 over ship between Islay and mainland 7 Aug (ADL); 1 Hascosay, Shet, 10 Aug (RJT); 1 Usan, Angus, 11 Aug (GMC); 1 NW off N Ronaldsay, Ork, 5 Oct (DBW). All or nearly all long-tailed birds.

Great Black-backed Gull *Larus marinus*. About 4000 prs bred Hoy, Ork, but no obvious change (EB); still increasing and nesting well inland Shet (RJT); pr hatched 3 young Redhythe Pt, Banff (JE). Inland roost L Leven 57 on 8 Oct, dropping later (AA, JHS). Fair Isle peaks of bad weather birds from fishing fleet 17 Jan (1000+), 16-17 Mar (600), 31 June (1000), 31 Oct-2 Nov (2000), 14-15 Nov (2000+) (RHD).

Lesser Black-backed Gull *Larus fuscus*. Up a bit from 900 prs in 1966 Isle of May (JP); Flanders Moss, Perth, inland colony estimated at 500 prs, local 1963 chick recovered there 29 May (IN, VMT); chicks L Thom 11 July, Renf breeding is irregular (IG, RAJ); 7 nests with eggs Findlater, first Banff breeding (JE).

Up to 8 wintered Nith, Glencaple/Dumfries (JGY); 2 Langholm, Dumf, 29 Jan (ELOC); 1 all winter Stranraer, Wigt (JMu); small number all winter L Leven (AA, JHS). Five single Scandinavian birds *L. f. fuscus*: Arrochar, S Arg (with British race), 21 Jan (TMC); various parts of Edinburgh 4 Feb (MAMcD), 8 Feb (MJE), 16-17 Dec (HD), and, race unknown, 29 Dec (MAMcD); near Brechin, Angus, 24 Apr (GMC). Spring return: Dumf/Kirk, shore 18 Mar, 37 inland Sanquhar by 28th (JGY); E Fife, 15 Mar, mainly late Mar (DWO); Aber, Fraserburgh 9 Mar (NE); Fair Isle 23 Mar (RHD); Shet, 29 Mar (RJT).

Isle of May chicks were in Spain (3) and Morocco (2) in their first winter, Spain (1) on 25 Aug at a year, and France (1) and Spain (1) in their second winter (5 : 263).

Herring Gull *Larus argentatus*. Isle of May (1 pr 1907) increased further from 11,000 prs of 1967 (JP); inland colony Flanders Moss, Perth, estimated 50 nests, with Lesser Blackbacks (IN, VMT); 2 prs bred L Leven, Kinross (AA, JHS); for 5th year running, bred on roof of hotel Inverness (MR). One ringed Fair Isle as ad in 1952 still breeding there (RHD). The albino which perches on the Carrick in Glasgow (4 : 493) returned 17 Sept (RCDA); another was at Girdle Ness, N Kinc, 29 Feb (NE).

Isle of May chicks were recovered in summer at a year old in Eire and France and in their second winter in France (5 : 263).

Common Gull *Larus canus*. Continues Dumf increase at various sites (ED, JGY); in Kirk, numbers down L Skerrow, and breeding island now submerged at Lochinvar (ADW). For Perth man-made sites see 5 : 218 (VMT); 2 nests in trees Crannoch Woods, Cullen, Banff (JE).

Peaks of spring passage Fair Isle (25-30 birds) on 14th and 21 Apr, 10th and 28 May; rather fewer than usual in autumn but peaks 17 Aug-30 Oct (RHD).

***Glaucous Gull** *Larus hyperboreus*. Regular winter months (Jan-May, Sept-Dec) Shet, Fair Isle, Ork, Aber and a few O Heb; mostly imm, but 3 ads in party 10 Mid Yell 29 Dec after N gale (RJT); Fair Isle maxima 7 on 20 Feb, 5 on 3 Mar (RHD); singles St Kilda 20 Mar (PW), 9 May (IDP). Outside these areas or periods: Shet, imm 13 July, 9th and 11 Aug (RJT); Fair Isle, 2 on 19 June, 1 on 15th, 21st-24th and 28 July (RHD); Caith, 2 imm Scrabster 19 June (BZ); W Ross, imm Badachro 7th and 12 Apr (RAW); Moray, ad Covesea 14th and 28 Feb, imm 7th, 9th and 20 Mar (THJ); Aber, imms Aberdeen 8-9 July, Peterhead 24 Aug (NE); Fife, 1st-W Methil Power Stn 23 Mar (DWO); Isle of May, 1

on 29 Sept (DWO); Midl, sub-ad inland Gladhouse 1 June (DGA); E Loth, imm Dunbar wintered to 25 July, 1 Tynninghame 3rd and 17 Mar (MFMM, RWJS), 1 Gullane Pt 28 Dec (JAS); Skye, imm Kyleakin 24th and 30 Apr (NE); Dunb, imm Ardmore Pt 21 Oct (JH), imm inland Endrick mouth 24 Nov (GTW), imm inland Craigmaddie L (on W Stir border) 21 Jan (DJN); imm Ayr harbour 1 Jan (RGC), 7 Jan, 2 Feb (RBT).

***Iceland Gull** *Larus glaucooides*. Spring records to 4 June, but thereafter only one Sept, one Nov: Shet, single imms Lerwick 28 Jan, 16 Mar, 16 Apr (DC), Out Skerries 30 Jan (RJT), Whalsay 2 Feb, 17 May (RJT), 2 imms Unst 24 Mar (MS, FJW), ad 25 May (MS); Fair Isle, 2nd-yr 20 Apr, ad 12 Nov (RHD); Ork, 1 Kirbister L 16 Sept (EJWi); Caith, imm L Calder 13 Apr (AF); O Heb, 3rd-yr Stornoway 4 June (WAJC); N Kinc, ad 12 Mar, imm 19 Apr, Girdle Ness (NE); Midl, ad St Margaret's L, Edinburgh, 4 Jan-28 Feb (DGA, AFL, MAMcD); Renf, imm Paisley Moss 6 Apr (HG, IG).

***Little Gull** *Larus minutus*. Fife records more dispersed, with Kilconquhar peaks less than recently (DWO): Tentsmuir/St Andrews 7 Jan-28 Apr (TGp, DWO), peak 25 Tayport 28 Apr (ARB, RTB), 1 Tentsmuir Pt 16 July (TGp); Cameron, 7 ad and 1 1st-S 17 June, 6 ad and 1 1st-S 28 July, 12 on 29th (DWO); Kilconquhar built up from early July to 106 ad 25th July, 5 1st-S in 28 on 27th, last one (juv) 24 Aug (HEMD, MJE, DWO, JHS); Fife Ness/Largo Bay 14 Sept-15 Dec (HGp, PGTB, JD, DWO, RWS); Methil 7 Jan-23 Mar, peak 3 on 2 Mar, also 1 Oct-8 Nov, peak 22 ad and 1 imm 1 Oct (PGTB, DWO). On Tay: regular autumn, mostly Angus (GMC); 45 Kingoodie, Perth, 15 Apr, 3 on 22nd (HBo). Outside these areas: 1 Duddingston, Midl, 2 Apr (DRA); 1 Kinnaber, Angus, 12 Aug (GMC); ad Girdle Ness, N Kinc, 22 Aug (NE), 1 on 5 Sept (RSBy), 2 on 12 Oct (RWS); 2 ad Strathbeg, Aber, 18-24 Aug, 1 to 5 Sept (MW); 1 Wick, Caith, 10 Feb (JARG, AS); imm Thurso 23 Feb (PMcM); 1 St Kilda 18 June (RMcI).

Black-headed Gull *Larus ridibundus*. L Leven colony 7100 nests 21 May (AA, JHS); over 1000 prs unrecorded colony E Ravenscroft Island, off Newburgh, Fife (DWO); particularly good breeding season Dumf (JGY). Return to Speyside, E Inv, 2nd wk Mar, last seen 1st wk Nov, exceptionally late (DNW). Many juvs dead on central Fife roads mid Aug; juvs out of area by 1st wk Nov (DWO); 1967 Tentsmuir chicks recovered Figuera da Foz, Beira Litoral, Portugal, 20.12.67 and La Coruna, Spain, 26.12.67 (JLSC).

Migrants: St Kilda, 126 Village Bay 8 Apr, a few later (HK); Fair Isle, 8 Apr-25 June, 3 July-20 Oct (RHD.)

Kittiwake *Rissa tridactyla*. Increases Scar Rocks, Wigt (JGY) (5: 207), Inchkeith, Fidra, Lamb and Craigleith in Forth (EMS, RWJS), Whalsay, Shet (JHSi) (5: 171). Some 300 prs N of Duffus may have bred there for some time and been missed (*Bird Study* 10: 169), first breeding for Moray; one dead there had been ringed as a chick 10 yrs before on the Farne Islands (RR). Ashore Fair Isle 25 Feb, full numbers 10 Apr, building 26 Apr, most gone end Aug (RHD).

Movement 3500/hr S at Rattray Head, Aber, 5 Aug (MW); offshore numbers high Fair Isle autumn, peak 500 on 11 Oct, big E passage 14 Nov (RHD); 10 up Forth at Skinflats, E Stir, 6 Oct (TDHM). Inland: Fife, 1st-S Kilconquhar 27 July, 1 newly dead Peat Inn 13 Aug 8 mls from sea (DWO); Edinburgh, juv in poor condition Blackford Pond 4 Aug (HEMD), 1 dying Gayfield Sq end Aug/early Sept, when 3-7 in Meadows on several dates (JBM).

***Black Tern** *Chlidonias niger*. Ad with Little Gulls at Kilconquhar L, Fife, 9-24 July, very unusual dates (PGTB, GBn, DWO). Spring singles (3): Yesnaby, Ork, last wk May (per EB); Bridge of Don, Aber, 2 June (ADKR); Kinnaber, Angus, 20 June (RM). Autumn (8) 11 Sept-12 Oct: 1 Tankerness L, Ork, 15 Sept (EJWi); 1 Girdle Ness, first for N Kinc,



PLATE 20. Male Osprey, summer 1967, perched near the third Scottish eyrie, used successfully in both 1967 and 1968 (see page 319).

Photograph by C. K. Mylne



PLATE 21a. Drake Scaup, Duddingston Loch, Edinburgh, 11th February 1967. Numbers off Leith Docks at Seafield reached a record total of at least 30,000 in December 1968 (see page 313).

Photograph by W. Kenneth Richmond

21b. Red-throated Diver, Unst, 1966. Breeding success in Shetland in 1968 was reduced by some of the pools drying out in the exceptionally dry summer.

Photograph by William S. Paton





PLATE 22a. Redwing feeding young at nest, Stratherrick, East Inverness-shire, May 1968 (see page 342). The nest was about 3 feet from the ground in the upturned root of a fallen birch.

Photograph by Lea MacNally

22b. Song Thrush with young in open nest on ground in bracken, Isle of Mull, June 1965. This nest, in a site such as the Hebridean race uses, may be compared with the Redwing's above.

Photograph by William S. Paton





PLATE 23. First-winter female White-tailed Eagle, Fair Isle, October 1968, one of four introduced to the island (see page 318). Note the huge vulturine wings ("like a flying door"), heavy bill and wedge-shaped tail, which though here not fully spread shows the curious pale centres of the feathers.

Photograph by R. J. Tulloch

12 Oct (RWS); 1 Leven, Fife, 6 Oct (PGTB); 1 (?sp) Skinflats, E Stir, 6 Oct (TDHM); 1 Aberlady, E Loth, 5 Oct (EMS, RWJS); 3 Endrick mouth, W Stir/Dunf, 11 Sept (JM).

***Gull-billed Tern** *Gelochelidon nilotica*. One Aberlady, E Loth, 22 Mar, 4th Scottish record (AMcD) (5 : 284).

***Caspian Tern** *Hydroprogne caspia*. One L Lomond, W Stir/Dunb, 7 Aug, 1st Scottish record (MF).

Common Tern *Sterna hirundo*. Suffered badly in early-July gales in E Fife (DWO); 85 inland nests St Serf's Island, L Leven, 20 June, present 10 May-11 Sept (AA, JHS); Endrick mouth inland colony now down to 5 prs (JM).

Arrivals: 7 Apr (very early date), Eyebroughty, E Loth (MGW); 14 Apr, St Andrews, Fife (MHEC); 19 Apr, Kirkconnell Merse, Kirk (JGY); 21 Apr, Caith (DMS), 2 'Comic' Bay of Nigg, N Kinc (ADKR); 25 Apr, Guay, Dunkeld, Perth (THE). Passage of 'Comic' S at 800/hr Rattray Head, Aber, 8 Sept (MW); 1 Kelso, Rox, 13 Sept (RSB). Last dates ('Comic'): Fife Ness 12 Oct (DWO), Rattray Head 6 Nov (NE).

Arctic Tern *Sterna macrura*. At least 1 pr with chick Ardwell Bay 3 Aug, does not usually breed Wigt (ADW); disastrous breeding season E Fife (DWO).

First dates: 19 Apr, Kirkconnell Merse, Kirk (JGY); 20 Apr, N Uist (ARMcG); 21 Apr, Caith (DMS); 26 Apr, Stornoway, O Heb (NE). Fair Isle 'Comics', mostly Arctic, 16 May-6 Oct (RHD); Shet 'Comics' from 9 May (RJT).

Roseate Tern *Sterna dougallii*. Several hundred bred Inchmickery, Midl, as usual but few chicks in early July owing to very bad weather (GW). First 1 passed N at Fife Ness 27 Apr, 50/hr N on 27 May (DWO); 25 N in 2½ hrs Carnoustie, Angus, 14 July (CH); small passage S at Fife Ness from 30 July (DWO). Other notes from E Loth, Fife, Angus, Aber.

Little Tern *Sterna altifrons*. On 30 June 7 prs breeding, chicks seen, mouth of Webster Burn, possibly first acceptable breeding record for Caith (PMcM, DMS); 2 prs with chicks Drimsdale 12 July may be first breeding record for S Uist, O Heb (there are small colonies in N Uist and Lewis) (HEMD); largest Scottish colony 30 prs Kinnaber, Angus (GMC); Tentsmuir colony, N Fife, 15 birds 12 May, hit by July gales and last seen 14 July (TGp, DWO); see *Brit. Birds* 62 : 6 for 1967 Scottish status (172 prs in 28 colonies). First dates: 21 Apr, Gullane, E Loth (MGW), 1 Tentsmuir Pt (TGp); 24 Apr, 1 N Uist (ARMcG). Straggler Whalsay, Shet, 28 May (JHSi).

Sandwich Tern *Sterna sandvicensis*. Birds Tentsmuir, Fife, defending territories 13 July after gales, high tides and blown sand left not a chick from 500 prs, but did not relay (DWO); 405 nests Inchmickery, Midl, was up, but owing to bad weather few flew (GW); Sands of Forvie, Aber, very successful, over 1200 prs rearing about 1.3 young each, laying early (30 Apr) and dispersing rapidly by end July (AJMS) (5 : 227). Unusually many in summer Caith, but not proved to breed (DMS); 150 prs were first to breed successfully on Burray, Ork, though 10 prs tried and gave up in 1966; also 80 prs N Ronaldsay and others Sanday (EB). A pr Fetlar, Shet, for a few days from 2 June took territory but did not stay (RJT).

First dates: 3 Apr, Forvie (AJMS), 1 Fife Ness (JARG); 4 Apr, 1 Stairhaven, Wigt (PGTB); 8 Apr, Aberlady, E Loth (RSB); 17 Apr, Dunnet, Caith (PMcM); but slow to return and rather few in Apr in Fife (DWO). Whalsay, Shet, 1 on 4 May, 3 on 9th (JHSi). Inland: L Leven, 2 on 29 Apr, 1 on 4 May, 2 on 17 Aug (AA, IKM, JHS). Passing S at 72/hr Rattray Head, Aber, 3 Sept (MW). Last dates: 5 Oct, Fife Ness (DWO); 6 Oct, N Berwick, E Loth (DA); 13 Oct, 2 Bay of Nigg, N Kinc (ADKR); 31 Oct, 2 Covesea, Moray (THJ).

Razorbill *Alca torda*. Little data on status changes; probably increased Isle of May (JP). Ashore Dunnet Head, Caith, 14 Jan (SC); Craigleith, E Loth, 30 Jan (MJE); St Kilda from 20 Mar (PW). First ashore Fair Isle 11 Feb, mainly from 20 Feb, continuously from 5 Apr, decreased from 11 July, mainly 17th-24th, last ashore 31 July (RHD).

***Little Auk** *Plautus alle*. Records to 9 Mar, one Sept, and from 5 Nov: Shet, 1-2 near Whalsay 30 Jan (RJT), 15 Sumburgh 14 Nov, 3 Yell Sound next day (DC); Fair Isle, some at sea Jan, 2 ashore oiled 6 Feb, 1 at sea 25 Sept, mainly from 5 Nov, with over 1000 on 4 Dec (RHD); Caith, 1 Reiss 17 Jan, 1 Dunnet 9 Feb (JARG), 1 dead Dunnet 26 Dec (DMS); Moray, 1 on ground Gordonstoun School 28 Nov waddled down slope and flew off (THJ); Aber, 3 Rattray Head, 12th and 20 Nov (NE); N Kinc, 1 Girdle Ness 19 Jan (NE); Fife, 1 unoiled on beach Fife Ness 21 Jan (DWO, RWS), 2 oiled (1 alive) Largo Bay 31 Jan (RBH), 1 unoiled Tentsmuir 9 Mar (RWS), 1 oiled and long dead Elie Ness 16 Mar (DWO), 1 unoiled Tentsmuir 15 Dec (AMMF); Isle of May, 2 long dead 5 Apr (DCG); E Loth, 1 alive, 1 dead Dunbar 17 Nov (JHo); I Heb, 1 dying Machrie, Islay, 23 Dec (SG per MJE); Dumf, 1 dying Carrutherstown 15 Jan (per JS).

Guillemot *Uria aalge*. Small colony Cellar Head may be first on O Heb mainland other than Barra Head (IMcL). Ashore Craigleith, E Loth, 30 Jan (MJE); many on ledges St Kilda from 20 Mar (PW). At Fair Isle first ashore 15 Jan, sporadically to 20 Feb, continuously from 5 Apr, decrease in mid July, only stragglers (to 2 Aug) ashore after 25 July, but return to ledges noted 23 Oct, 18th and 28 Nov, 1st and 31 Dec (RHD).

***Brünnich's Guillemot** *Uria lomvia*. One freshly dead Unst, Shet, 20 Mar, 2nd Scottish record, first for Shet faunal area (FJW) (5: 285).

Black Guillemot *Cephus grylle*. Still breeding Kirk and Wigt (114 counted from boat L Ryan 5 Oct) (ADW, JGY); average breeding season Fair Isle study population, but autumn numbers rather low (RHD). S of breeding range on E coast: Aber, 1 dead Rattray Head 7 Feb, 3 Buchan Ness 24 Aug and 8 Sept, 5 Rattray Head 17 Nov, 3 on 6 Dec, 1 on 24th (NE, MW); Isle of May, 1 on 23 June (JP), 1-3 on 10 dates 26 Aug-4 Nov, when observatory closed (NJG).

Puffin *Fratercula arctica*. Definite spread of Isle of May colony of some 2000 prs (NJG). At Bullers of Buchan colony, Aber, 20 back by 31 Mar (NE, MW); came ashore St Kilda between 15th and 20 Apr (HK). First seen Fair Isle 28 Mar, small numbers ashore next day, exceptionally early, larger numbers from 10 Apr, departure from 9 Aug, few left 17 Aug, last ashore 27 Aug, a few offshore to 7 Sept, 1 on 18-19 Oct (RHD). Dead one in Peregrine's eyrie far inland near Laggan Bridge, E Inv, late June (DNW); one picked up alive near Alyth, N Perth, about 4 July (JGS).

Stock Dove *Columba oenas*. Little data on status changes. Dumf breeding numbers increasing; partial dispersion is indicated by the reduced numbers of records on higher ground in winter (NSRG). Flocks up to 40 in winter in Speyside (DNW). Fair Isle, one 23 Sept-4 Oct, unusual influx 11-23 Oct, with 3 on 13th, 4 on 17th, 3 on 18th and 23rd (RHD).

Rock Dove *Columba livia*. No changes reported in purer northern population. Up to 21 in Fair Isle winter flock; similarly spring and summer; autumn peaks 15 Sept (29), 24 Oct (38), 7 Nov (42), 14 Nov (50) (RHD).

Woodpigeon *Columba palumbus*. Increasing in Forestry Commission plantations as these grow older Nairn/Moray/Banff (RH); Dumf numbers increasing (JGY). Nests again found on ground in sand dunes Forvie, Aber (WM).

Passage Fair Isle mainly 15 Mar-1 Apr (max. 4), 17 Apr-16 June (7) and 6-30 Oct (8) (RHD); 1 St Kilda 13 May (RT). A shooter reported

flocks in poor condition and below average numbers Wigt early 1968 (per ADW).

***Turtle Dove** *Streptopelia turtur*. No data on breeding population in SE Scotland. Noted 21 Apr-25 Oct, mainly in N: Dumf, 1 Coatsgate, Beattock, 27 Apr (ARB, RTB), 1 Poldean, Moffat, 9 Oct (ED); Isle of May, 1-2 in May, June, Sept, Oct (NJG), to 8-10 Oct (BU); Fife, singles Fife Ness 30 Apr (DWO), Largo Bay 15 June (JD, DWO, RWS), Kilconquhar 24 Aug (DWO); Angus, 1 Edzell 4 June (BG, GMC, OT); Aber, 1 Rattray Head 3rd and 13 June, 1 Collieston 5 Oct (NE, NP, MW); E Inv, 1 Pityoulish mid May, 1 singing L Garten May (HB); Moray, 1 Covesea 26 June (THJ); Caith, 1 Forss 1 July (DGs); W Suth, 2 Assynt 19-27 May (HDRleNN); St Kilda, 1 on 21-22 Apr (HK); O Heb, 1 N Uist 22 Aug (ARMcG); Ork, 1 Costa 31 May (EB), 1 N Ronaldsay 29 May, 1 soon after, 1 on 26 Sept (per EB); Fair Isle, 1 on 27th and 30 Apr, passage 10 May-7 June, (4 on 26 May, 3 on 30th), one 19 June-8 July, another 7 July, singles 11 days 24 Aug-14 Sept (2 on 31 Aug, 2 Sept, 3 on 3 Sept), singles 2-23 Oct, 2 on 25 Oct (RHD); Shet, first 25 Apr, then 2 May, 27 May, 7 days 1-30 June, 4 days 1-23 July, 4 days 7-30 Aug, usually 1-2, scattered localities (RJT).

Collared Dove *Streptopelia decaocto*. Further increases: Dumf, consolidating in Dumfries (JGY); Glasgow, many records from suburbs (MFMM); S Arg, bred near Lochgilphead 1967, 1968 (IR); Islay, spreading and now in Port Ellen and Bridgend (MFMM); Skye, bred Duntuilm, first record (SG), 4 Broadford 7-11 Nov (AMcD); W Ross, bred (first record) Aultbea (JGHu), noted Torridon, Shieldaig (IDP); W Suth, noted Scourie and Achfarry (IDP); N Suth, prs Borgie, Strathnaver and Altnaharra (EGH), noted Durness (IDP); Selk, pr reared two broods Selkirk, first occurrence (AJS); E Loth, still increasing (KSMcG); Fife, spread continues, though no great increase in total numbers (DWO); Kinross, good numbers bred Kinross/Milnathort, first record (JHS); Perth, range extended to Callander and Thornhill (first for S Perth) (ALHB), Alyth and Glen Falloch (VMT); Angus, increasing (GMC); N Kinc, at least 3 prs bred Banchory (NP); Aber, widespread, at least 20 prs now Newburgh (WM), present Huntly (RH); Banff, now in Portsoy (JE), Buckie (AJSo), Keith (RH); S Inv, bred Corpach, first record (per DNW); E Inv, first Speyside nests, 2 prs Nethybridge (AMcC, HM), 2 prs Kincaig (DNW); Caith, bred Castletown for first time, now widespread (DMS); Ork, further increase (EB). But no evidence of increase Galloway, and at Dalry, Kirk, where attempted to breed 1967, only one bird 26 Apr (ADW). Flocks up to 80 Girvan distillery, Ayr (AGS). Four Milnholm, Langholm, 25 Apr for 3 days were first in Eskdale, Dumf (ELOC).

Birds flew in from sea Fife Ness 28 Apr (1), 30 Apr (2), 4 May (1) (DWO); 2 St Kilda 17-28 Apr, 1 extra 21st (HK); Fair Isle migrants 25-29 Apr, 13 May, then 4 (later 3) 19 May-9 Nov (did not breed), but 17 on 5-6 May, 10 on 7 May, 6 on 14 May, and extra singles 13 Aug, 8th-9th and 20 Oct (RHD). Early pr had 2 eggs Moray 21 Mar (THJ). Pr tried to nest on crossbar of telegraph pole Garlieston, Wigt (WH).

Cuckoo *Cuculus canorus*. Numbers well down on previous years Caith (DMS); apparently rather scarce Ork (EB).

Arrivals: 14 Apr, Keir, Dumf (JMX); 17 Apr, Barra, O Heb (WAJC); 20 Apr, Glen Lethnot, Angus (WG); 21 Apr, Moor of Genoch, Wigt (5 by 24th) (RCD), Portmore, Peeb (EMS, RWJS); 23 Apr, Bridge of Allan (MIS); 24 Apr, Glen Tilt, Perth (JWo); 25 Apr, Almondbank, Perth (CD), Tore, E Ross (MKMcD-D); 26 Apr, 1 L Leven (JHS); 27 Apr, Stornoway, O Heb (NE, IMcL); mainly last wk Apr, Perth (VMT). A month later in Northern Isles: Dale of Corrigal, Ork, 26 May (EB); Fair Isle 23 May-14 June (RHD); Shet, 25 May (RJT).

Autumn: singles Fair Isle 4th and 20 Aug (RHD); 1 Rattray Head,

Aber, 7 Aug (NE, MW). Last dates : juvs Shet to 5 Sept (RJT); juv L Leven to 21 Sept (JHS).

***Barn Owl** *Tyto alba*. Continues widespread and common Kirk (ADW); breeds widely and fairly successfully Dumf but a high proportion of ringing recoveries are of birds killed by road and rail traffic (NSRG). Scarcity elsewhere probably exaggerated by paucity of sightings: Dunb, 1 Dalreoch, Dumbarton, 14 May (DJL); W Stir, 1 Carbeth 11 Feb (MFMM), 1 resident Bardowie (RWP); E Loth, 1 found shot Tynninghame 17 Nov (RWJS); Midl, 1 injured Crichton Castle mid Jan (MJE), remains Auchencorth 27 Apr (AFL), but certainly commoner (RWJS); W Loth, 1 Whitburn 31 Mar (MJE); Fife, 1 dead (?shot) Eden 27 Oct (CST), gratifying noticeable increase E Neuk (3 in 2 mls 21 Dec (DWO)); Clack, 1 Forest Mill 26 Oct (TDHM); Perth, noted Almondbank (JRW), Murthly, Kilfauns, Stanley (IRJ); Angus, pr Brechin 11 Aug (GMC); Aber, 1 Port Elphinstone 17 June (CO); E Inv, 1 Kincaig most of year (DNW), 1 Lentrane 5 Feb (MR).

***Snowy Owl** *Nyctea scandiaca*. Bred Fetlar for 2nd year, rearing 3 chicks; apart from breeding birds and offspring (1967 and 1968) 2 ad ♂♂ were in Shet later in year, giving total of 9 on Fetlar mid Dec (RJT) (5 : 244). One St Kilda (first record) 30 Mar, 12th and 14 Apr (HK, DSS) (5 : 178).

***Little Owl** *Athene noctua*. Bred successfully Midl, first record, possibly did so 1967, when same calls heard (ISW) (5 : 287).

Two duetting Yetholm, Rox, various dates Apr, 1 calling 3 May (RSB); at least 1 roosting Caerlaverock Castle, Dumf, Jan-Feb (JGY); 1 killed on wires near Langholm, Dumf, 12 Apr (JS); 1 Broomlands (Dumfries outskirts), Kirk, 17 Feb (JGY); no report from Glenluce, Wigt, where noted 1967 (ADW).

Tawny Owl *Strix aluco*. No status changes reported. Breeding often at high density, Dumf, 5 prs reared young in one Nithsdale glen (WD, JGY). Pr Elie, Fife, deserted infertile eggs for 3rd year running (DWO). Nesting on ground in Dumf noted Forest of Ae (HO) and near Moffat (RA, ED).

Long-eared Owl *Asio otus*. Caith numbers seemed well down on 1967 (DMS); at least 3 prs, probably more, bred Ork (EB); one nest known (in heather on open hillside) Shet, up to 7 wintering Scalloway (RJT). Singles Fair Isle 8 dates 22 Mar-23 June, autumn dates 9th and 14 Oct, 10-21 Nov (3 on 18th, 2 on 19th-21st), 12th and 27 Dec (RHD); Aber, 4 Logie Buchan 12 Oct (ADKR), singles flew in from sea Boddam 6 Nov, Rattray Head 17 Nov (NE).

Short-eared Owl *Asio flammeus*. Locally rather above average numbers in young forest areas Kirk without being abundant (ADW); bred very good numbers Ork, more than recently (EB); appeared fairly numerous Perth (VMT). But scarce this year Suth/Ross (IDP), and fewer in Moorfoots than recently where thought not to have bred in one area, Midl, for first time in years (WBr). In areas for which there are few published records there were nests at Forvie, Aber (WM), and Glen Dye, N Kinc (NP), and 2 prs bred St Serf's Island, L Leven (AA).

Straggler Unst, Shet, 25 May (MS); noted Fair Isle 8th and 11 Jan, 13 Apr, 13 May-1 June (on 6 days), and 13th, 15th, 24-25 Oct (4 on 24th) (RHD); 1-3 St Kilda 3-12 May (IDP, RT); odd birds Fife Ness 28 Apr and 26 Aug-6 Oct (DWO). Winter counts of 5 St Serf's Island 12 Feb (AA), 5 Aberlady, E Loth, 21 Dec (DJ).

***Nightjar** *Caprimulgus europaeus*. Numbers down Kirk, 1-2 in one usual haunt May-June, but none at another where noted 1967, breeding not confirmed (LAU, ADW). Fair Isle, 1 on 26 May, exhausted single ♂♂ 30 May, 31 May (RHD); 1 Ork for at least first 2 wks Sept (per EB).

Swift *Apus apus*. Fewer this year Thurso, Caith (DMS).

April dates: 21 Apr (very early record), 1 Montrose, Angus (GMC); 23 Apr, 2 L Leven (and 1 on 27th) (AA, JHS); 26 Apr, 1 Dumfries (DS), Dalry, Kirk (ADW); 27 Apr, 2 Duddingston, Midl (DGA), Perth (VMT), 1 Butt of Lewis, O Heb (NE); 28 Apr, 6 Kilconquhar, Fife (DWO), Skinflats, E Stir (MH); 29 Apr, 1 Canonbie, Dumf (ELOC), Aberdeen (ADKR), Caith (PMcM), 1 Fair Isle (RHD); 30 Apr, Kingoodie, Perth (HBo). Widespread Dumf 1 May (JGY); 200 L Leven 1 May, 500 on 6-8 May (AA, JHS); early and rapid build-up Fife (DWO); main Perth arrival 1st wk May (VMT); first Shet (Unst) 14 May (MS); 300 feeding L Leven 17 May, 1000 on 29 June (AA, JHS); passage Fair Isle 26 May-21 June, peak 15 a day (RHD).

Autumn: Shet movement to 30 July, when peak 50 Fetlar, singles 2nd and 23 Aug (RJT); Fair Isle passage 1-31 July, peaks 1st (23), 5th (50), 9th (30), 10th (70), 31st (30), and 23 Aug-7 Sept (20 on 26-27 Aug) (RHD); peaks Strathbeg, Aber, 350 on 9 July, 150 on 17th (NE, MW); L Leven peak 13-16 July (700, 1000, 600, 400 respectively), smaller wave mid Aug (90 on 14th, last 16 next day) (AA, JHS); peak 500 on 6 Aug Kilconquhar, all gone 25th (DWO); usual concentration over Lowther Hills, Dumf, 1500 late July (JWi). Last dates: 7 Sept, Crutherrstown, Dumf (RTS), Gallan Head, O Heb (AFJ); 10 Sept, Bragar, O Heb (IMcL); 11 Sept, Holm, Ork (MT-C); 13 Sept, 2-3 L Earn, Perth (VMT); 21 Sept, 1 Lundin Links, Fife (PGTB).

***Alpine Swift** *Apus melba*. One Ardnamurchan 6 July, first for Argyll faunal area (FCB).

***Kingfisher** *Alcedo atthis*. Some evidence of increase Dumf from level of 5 yrs ago, bred Water of Dryfe, seen Water of Ae (HO), R Nith (AFi); lack of information from other known haunts. One Park Bridge, Aber, 10 May (RIM); 1 Stonehaven, N Kinc, 29 June (WBa). Autumn/winter: 1 R Cree, Newton Stewart, Wigt/Kirk, late Aug (WHM); Midl, 1 R Almond, Midcalder, 12 Oct (JSO), 1 Water of Leith, Colinton, 24 Nov into 1969 (MJE, RJG); Perth, 2 reports (once 2 birds) Crieff late July (BP); E Inv, first for a few years Lovat Bridge, R Beaully, 19 July (DE per MJE); Caith, 1 Thurso 22 Aug, first for N Coast (WGa).

***Bee-eater** *Merops apiaster*. One Swindridge Muir near Dalry 14-18 May, first for Ayr (MGB, DJN) (2 : 289).

***Roller** *Coracias garrulus*. Imm Portnahaven, Islay, 29 Sept, first for I Heb (AMT).

***Hoopoe** *Upupa epops*. Unusually many (singles unless stated) 17 Apr-17 June (especially Apr), 1 Sept-21 Oct. Spring: Dumf, Eliock, Sanquhar, 24 Apr, and Burnmouth, Sanquhar, 9 May (AB, JMcd, RMcF); Dunb, between Tarbet and Ardlui 17 June (MFi); S Arg, Taynuilt 9 May (EJB); N Arg, Lochaline 13 June (IMS); S Fife, Lower Largo 23 May (DWO), heard Largo Bay 1 June (JD, DWO); Kinross, Shanwell House 11-20 May, first record (JHS, MWa); Angus, Arbroath 18 Apr (JD); Caith, John o' Groats 20-21 Apr (DBo, PMcM, DMS); Ork, Lamb Holm 22 Apr, Copinsay and Start Pt a few days later (per EB, EJWi); Fair Isle 17-19 Apr, another 29 Apr (RHD); Shet, Fetlar 22 Apr (RJT).

Autumn: Shet, 3-5 Whalsay, with sightings 29 Sept and 7th, 8th, 9th, 15th, 19th and 21 Oct (DC, JHSi); N Kinc, Strachan 12 Sept (per NP); Fife, 2 flying as pr Fife Ness 1 Sept (per DWO), Cupar 9 Sept (EBr).

***Green Woodpecker** *Picus viridis*. Widespread and no change Dumf and Kirk (ADW, JGY); fewer around Selkirk (AJS); inadequate data SE Scotland; a few prs Falkirk area of E Stir (MH); at least 6 prs between Dollar Glen and Wood Hill, Tillicoultry, Clack (TDHM); widely distributed Perth (as 5 : 30) (VMT). One Clachaneasy 5 May is possibly first recent record Wigt (JGY); heard Burntisland, Fife, 7th and 15 Apr (JMC), the county has been bypassed in recent years (DWO); 1 L

Leven 9-18 Apr, first for Kinross (JHS); in Angus, heard Cantsmill, Airlie, 7 May (DAT), pr Woodside July (JDW), first records.

Great Spotted Woodpecker *Dendrocopos major*. Kirk decrease accelerated and very marked now (ADW), though no change discernible Dumf (JGY); Fife breeding population seems to fluctuate from year to year (DWO); no evidence of breeding now W Loth (TCS); and species hardly mentioned by Midl observers (RWJS).

Strong invasion (last equivalent at Fair Isle 1962) of Northern birds, mainly from 7 Sept: Shet (no ads confirmed), 1 Yell 9 Aug, many reports next 10 days, increase from 9 Sept to over 100 to 30 Sept, dwindling to last on 30 Nov, some dead, some killed by cats (RJT); Fair Isle, 10, 9, 1, 5, 4, 3, 11, 8 on 7-14 Sept (3 handled), smaller numbers to 13 Oct (RHD); O Heb, singles Stornoway and Borve in Sept (WAJC); I Heb, arrived Gigha autumn and stayed (EMcM, MMcM); Ork, moderate influx from about 7 Sept, continuing into Oct, 2-6 in several parishes and islands, 1-2 still there early Dec (EB); Caith, first Thurso 8 Sept, throughout county by 15 Sept, all juvs, still a few at end of year (DMS); Aber, 1 Newburgh 8 Sept, 2 Cruden Bay 5 Oct, 1 Collieston 26 Oct (NP), 1 Rattray Head 25 Nov (NE); Fife, imm Fife Ness 12 Sept (PGTB); Isle of May, single measured Northern 27 Aug (KP), 8-14 Oct (BU), 21 Oct-1 Nov (NJG, IFS), all juvs.

***Wryneck** *Jynx torquilla*. Though never proved to breed in Scotland, even when commoner in England, continues to appear sporadically in Inv in summer (see 3: 418): ♂ calling Boat of Garten 17 June, pr Rothiemurchus for at least 4 wks from mid June (DNW); also one in typical habitat Glen Quoich, Aber, 28 July, gone next day (DL, VCW-E).

Migrants 21 Apr-5 June, 17 Aug-21 Sept: Ber, 1 St Abbs 14-15 Sept (ADKR, EMS, RWJS); E Loth, 1 Tynninghame 5 May (CST), 1 Dirleton 12 May (MGW); Isle of May, 7 on 5 May, 14 on 6-7 May, 1-2 until 16 May, 2 on 24 Aug (JP); 1 Fife Ness 15 Sept (HGp); Ork, 1 N Ronaldsay 20-21 Sept (EJW); Fair Isle, singles 10th, 11th, 13th-23rd, 26th and 27 May (2 on 25th) and 5 June, passage 17 Aug-21 Sept, mostly 2-10 Sept (3 on 2nd, 4 on 9th) (RHD); Shet, 1 Fetlar 21-22 Apr, 1 Sumburgh 2 May (DC), first of several Whalsay 3 Sept, 2 Out Skerries 6 Sept and 1 on 11th, 1 Mid Yell 9 Sept (RJT).

***Short-toed Lark** *Calandrella cinerea*. One Out Skerries, Shet, 2-3 May and 16 May (RJT); single Southern-type *brachydactyla* birds Fair Isle 20 May-1 June and 5-8 Sept, and Eastern-type *longipennis* birds 2 on 9 Oct, 1 on 12-15 Oct, 1 on 20 Oct (RHD).

***Woodlark** *Lullulla arborea*. Ringed bird resident Fair Isle 11 Nov to end of year, another 22 Nov (RHD). One Easthaven 17 Nov, first for Angus (RAS).

Skylark *Alauda arvensis*. With afforestation quite large areas of Kirk are being lost to this species, one of the first to cease breeding (ADW). Main return Fair Isle from 21 Feb, especially late Feb/early Mar, passage Mar, peak 300 on 13th, 500 on 14th (RHD), corresponding with reports of flocks of up to 200 Shet from 10 Mar (RJT).

***Shore Lark** *Eremophila alpestris*. Four records 5 Mar-6 May, four 11-22 Oct: Shet, 1 Whalsay 11 Oct (JHSi); Fair Isle, singles 11th and 22 Oct (RHD); Angus, singles Arbroath 5-24 Mar and 14-16 Oct (AN, MN); Isle of May, singles 4-8 Apr (RAC, DCG) and 6 May (JP); E Loth, 7 Barns Ness 9 Mar (HD).

Swallow *Hirundo rustica*. Reports indicated good breeding season Galloway (ADW); some 3 prs bred Stornoway, O Heb, where increasing (WAJC); but numbers thought to be down Caith (DMS).

Arrival: 11 Apr (a late first date), Killantringan, Wigt (TH); 12 Apr, 1 Arbroath, Angus (MN); 13 Apr, Kinghorn, Fife (JMcf), Almondbank, Perth (JRW); 14 Apr, 1 Roslin, Midl (ADKR), 1 Cramond Brig, Midl (GB);

16 Apr, Keir, Dumf (JFY), Dollar, Clack (TDHM); 17 Apr, Canonbie, Dumf (ELOC), Yetholm, Rox (RSB), Isle of May (JP), 2 L Leven, Kinross (JHS), Perth (Mrs DD), St Kilda (and 1 dead 21st) (HK); 18 Apr, 40 L Leven (JHS), Dyce, Aber (NE), 2 Foulis Pt, E Ross (CGH), over 200 Thurso, Caith (PMcM). Main arrival: Dumf, 1-10 May (RTS, JGY); S Fife, 25-28 Apr Kilconquhar (DWO); L Leven passage 30 Apr, 3-6 May (JHS); Perth, mainly from 20 Apr (VMT). Two Stornoway 24 Apr (NE); Fair Isle from 21 Apr (6), over 20 daily 22 May-4 June (60 on 24 May, 50 on 25-26 May) (RHD); first Shet 21 Apr, peaks 10-12 May, 11-12 June (RJT).

Autumn numbers noted: Shet 26-29 Aug (RJT); Fair Isle 25 Aug (8) (RHD); Ork 11th and 17 Sept (EB); Caith 30 Aug (DMS); Kingoodie, Perth, 11 Sept (HBo); Kinross, 40 on 28 Aug (JHS). Brood still in nest Dumf 10 Oct (JMcC). Cluster of last dates: 10 Oct, Caith (PMcM), Angus (MN); 12 Oct, Perth (SL); 13 Oct, Rox (EH); 14 Oct, Fair Isle (RHD); 16 Oct, Aber (NE); 17 Oct, E Stir (MH); 20 Oct, E Loth (DA); 22 Oct, Isle of May (IFS). Only one Nov record, 1 Caerlaverock 11th (JGY).

House Martin *Delichon urbica*. Bred well Vane Farm, Kinross, 3 prs fledging 2nd broods early Oct (AA, JHS); summer numbers down Caith (DMS).

Arrivals: 16 Apr (a shade earlier than usual), Keir, Dumf (JFY); 17 Apr, Ardeonaig, Perth (AWT); 18 Apr, Kelso, Rox (RSB), 4 St Andrews, Fife (MHEC), Abernethy, Perth (RGW); 19 Apr, N Berwick, E Loth (DA), L Leven, Kinross (JHS), 1 Airlie, Angus (DAT), Dounreay, Caith (AA), Unst, Shet (MS); 20 Apr, 1 Edinburgh (AFL); 21 Apr, Laurieston, Kirk (JD, ELR), now 20 Kilconquhar, Fife (DWO), Nigg Bay, N Kinc, and Culter, Aber (NE, ADKR). One reached Fair Isle 25 Apr (RHD) and one N Uist 28 Apr (ARMcG). Main arrival: Dumf, 1-10 May (JGY); Fife, built up to 100 Kilconquhar 25 Apr (DWO); Perth, mainly from 20 Apr (VMT). Passage Kinross 30 Apr, 3-6 May (AA, JHS); Fair Isle mainly 24 May-20 June (60 on 27-30 May, 1st and 3 June) (RHD); Shet, large influx 23-30 May, flocks over 100 (RJT).

Autumn movements L Leven 12th, 14th and 18 Aug and 25 on 5 Oct (AA, JHS). Last dates: 12 Oct, Fair Isle (RHD), Perth (SL); 9 Nov, ad Kilconquhar (JD, DWO, RWS).

Sand Martin *Riparia riparia*. Breeding numbers small Caith this year (DMS).

Arrivals: 28 Mar (an average first date), 6 places Scots Dyke/Langholm areas of Dumf (ELOC); 29 Mar, Dunskey L, Wigt (TH); 30 Mar, 100 Lochmaben, Dumf (RTS), 2 Threipmuir, Midl (JJ); 31 Mar, Barns Ness, E Loth (TB), 1 Kilconquhar, Fife (DWO), 2 Kingoodie, Perth (HBo), Strathbeg, Aber (NE); 1 Apr, 25 Lindores, Fife (JW). Widespread Dumf 14 Apr (JGY), but obvious gap after Mar records before first records for Selk 12 Apr (AJS); Rox 13 Apr (RSB); 12 Gladhouse, Midl, 13 Apr (numerous by 21st) (DGA); Isle of May 17 Apr (JP); Kinross 17 Apr (passage 30 Apr, 3-6 June) (JHS); Crieff, Perth, 11 Apr (mainly from 15 Apr in Perth) (BP, VMT); 2 Foulis Pt, E Ross, 18 Apr (CGH); St Kilda 16 Apr (HK); Fair Isle 19 Apr (and 13 on 21st, 10 on 26th) (RHD); 2 Shet 21 Apr (and 6 on 28th) (DC, RJT). Rapid build-up E Fife 25-28 Apr (DWO). Cold wet weather in early May caused big concentration at lochs: 5 May, 3000 Portmore, Peeb (DGA); 7 May, 1000 Butterstone and 500 Lowes, Dункeld, Perth (HBo).

Autumn passage: Rattray Head, Aber, 27 Aug (NE); 600 Invergowrie, Perth, the same day; peak L Leven 12-15 Aug, 250 on 12th (JFo, JHS); large numbers moving S at Blackshaw Bank, Dumf, 26 Sept (JGY). Last dates: 25-26 Oct Moffat, Dumf (ED).

***Golden Oriole** *Oriolus oriolus*. Records 14 May-17 June and 11 Oct: Kinross (first record), pr displaying near R Devon 11 June (ICM) (5: 289); Fair Isle, ♀ trapped 14 May, another ♀ 14-17 June (RHD); Shet, single

♀♀ (?or 1st-W ♂♂) Lunna 1 June, Vidlin 3 June, Ollaberry 6 June, Tingwall 8 June (RJT); O Heb, 1 Stornoway 11 Oct (IMcL).

Raven *Corvus corax*. Though reduced by afforestation in hill sheep areas it is not clear that there is an overall decrease in Galloway (ADW); despite persecution breeds successfully and possibly increasing slightly Dumf (JTo); nest with 2 young Clack, first breeding record (TDHM); Perth breeding records are more widespread than on map *Bird Study* 15: 192 (VMT); breeds sparsely Deeside, Aber, for which *Birds of Scotland* says there is no recent breeding record (NP). Seven tree nests Dumf (JTo), 2 Caith (DMS); nest with eggs on disused Galloway railway viaduct (CP).

Movement Fair Isle, 15 on 3 Apr, 29 flew N 9 Apr, 45 flew N very high 3 May (RHD); also 1 Barns Ness, E Loth, 14 Apr (DIMW). Roost 300+ near Lerwick, Shet, Aug (PKK); immense winter flock Stornoway, O Heb (WAJC).

Crow *Corvus corone*. Carrion Crows *C. c. corone* increasing Dumf (JGY). Small passage Fair Isle 5 May-5 June (RHD). Odd reports of Hooded Crows *C. c. cornix* S Scotland (Wigt, Renf, Midl, E Loth, Fife), maximum 3 Fife Ness 24 Feb (DWO), but some may be hybrids, which are reported as far S as Kirk (LAU) and Renf (MFMM) and N to Fair Isle (one resident) (RHD) and Shet (RJT).

Five Carrion Crows which vanished in the great gale on 15 Jan did not return to Gourrock until 29 Jan (per MFMM).

Rook *Corvus frugilegus*. For recent studies of Aber and Ayr populations see *The Problems of Birds as Pests* 1968, p. 119 (GMD, IJP) and 5: 196 (MEC).

A few on Shet outer isles early Feb (RJT), matched by 3 at Fair Isle on 6 Feb and 6 from 7th to 10th (RHD). At Yetholm, Rox, 8000-10,000 moving S in 2 hrs 22 Dec (RSB). Usual large feeding flocks on high moorland Kirk June-July (ADW), were also a feature of July in Dumf, where others on Caerlaverock salt marshes fed with waders in the estuarine mud (JGY).

Jackdaw *Corvus monedula*. Continues increase Dumf, where it is worst predator of Caerlaverock wader chicks; at least 98 prs in old colony in disused rabbit burrows Dalpeddar Hill (JGY). No other reported changes. Flock 300 feeding on hillside Balintore, Angus, 15 Apr (GMC). Fair Isle, 6 on 20 Oct, 9 to 25th, 8 to 27th (RHD).

Magpie *Pica pica*. Local but tending to increase Kirk as upland plantations grow (ADW); evidently increasing Aber (DGA, WM, NP); 1 Upper Cabrach, Banff, over 1300 ft in Oct suggests spread into high Forestry Commission plantations (RH); several resident Strachur area, S Arg (MJPG) (see also 4: 449, 524; 5: 65); 1 Kinlochewe, W Ross, 22 Apr (DBa).

***Nutcracker** *Nuctifraga caryocatactes*. One Lerwick, Shet, 22-23 Aug, eating sparrows, sole Scottish reflection of widespread English irruption, 4th Scottish record (DC) (5: 290).

Jay *Garrulus glandarius*. Markedly increasing Dumf, especially in un-keepered forests (JGY), common Forest of Ae (HO). N of Perth/Angus population, 3 Banchory 29 Sept, 6 Strachan 5 Dec, both N Kinc (NP). Range extension suggested by 1 Fochabers, Moray, 19 May (THJ).

***Chough** *Pyrrhocorax pyrrhocorax*. No reports on status of any of the small breeding populations.

Great Tit *Parus major*. Few comments. A few prs bred Stornoway, O Heb, where first established 1966 (WAJC). Low numbers Jan-Mar, Nov-Dec Dalry, Kirk, may indicate local scarcity, but beechmast may have attracted them elsewhere in early months (ADW).

Blue Tit *Parus caeruleus*. Bred commonly Stornoway, O Heb, where first established 1963 (WAJC). At Fife Ness 3 very pale birds appeared

in early Oct with Scandinavian migrants and stayed a week (DWO).

Coal Tit *Parus ater*. Increasing around Strathnaver, N Suth, in afforested areas (EGH). Pr or two bred Stornoway, O Heb, where established 1965 or 1966 (WAJC).

Crested Tit *Parus cristatus*. Breeding only Moray Basin, especially Spey, E Inv, as far up as Dun da Lamb above Laggan Bridge (DNW). One Clashmore Wood, Dornoch, SE Suth, 30 Mar-1 June (DMB). One on fence at head of pass over Glen Cia-aig heading from L Arkaig to L Garry is first in S Inv (DNW).

***Marsh Tit** *Parus palustris*. Two prs Yetholm, Rox, but breeding not proved 1968 (RSB). No report from Ber stronghold.

***Willow Tit** *Parus montanus*. Recorded only within Solway/Clyde range: Dumf, widespread, especially Nithsdale, with some evidence of partial winter dispersal to coastal areas where not breeding (JMCC, JMx, JKRM, JFY, JGY); Kirk, common but rather local (ADW); Wigt, certainly breeding (ADW); Clyde, no detailed account, but 1-2 in conifers Brown Carrick Hill near Ayr 7 Aug were a little W of usual range (WB).

Long-tailed Tit *Aegithalos caudatus*. No reports of depressed numbers. Continues increase E Fife (DWO); numbers at high level Midl, bred for first time (in 5 yrs) at study area Loanhead, common several areas winter 1968/69, and at Gladhouse where only recorded in winter within past 3 yrs; regular Tynninghame, E Loth, where few until 1967 (RWJS). Between Erskine woods and Langbank, Renf, 100 on 14 Feb (RCDA). A party that regularly visited a bird table at Alloway, Ayr, was blown away in the great gale of 15 Jan (JA).

Treecreeper *Certhia familiaris*. Little special comment. A few prs bred Stornoway, O Heb, where first established 1962 (WAJC). Pale Northern bird (described) caught E Yell 21 Apr (RJT). British bird Isle of May 7 Sept (GLAP).

Wren Troglodytes troglodytes. Very common and had good breeding season Kirk (ADW); completely recovered since 1953 in Dumf, with areas of very high density such as Forest of Ae (HO, JGY); good breeding season Kinross (JHS). Numbers probably slightly down Fair Isle (RHD). Movement 14 Rattray Head, Aber, 15 Oct (NE).

Dipper *Cinclus cinclus*. No special comments on breeding status. A Black-bellied Dipper *C. c. cinclus*, the usual form at Fair Isle, there from 6 Oct, another 10th and 17 Nov, 1 stayed to year end (RHD).

Mistle Thrush *Turdus viscivorus*. Probably increasing Dumf, especially in large afforested areas (JGY); increasing Altnaharra/Strathnaver, N Suth, in afforested areas (EGH); pr with young Stornoway woods 8 May, first post-war breeding O Heb (WAJC, IMcL, WMa). Autumn flocks: 30-40 Ardeonaig, Perth, 11 Sept (VMT); 35-40 Rosebery, Midl, 8 Sept, decreasing over next month (EMS, RWJS); 20 with Fieldfares at Mull of Galloway, Wigt, 18 Oct (ADW). A very few migrants Fair Isle 11 Feb-1 June, 24 Sept-24 Oct (RHD).

Fieldfare *Turdus pilaris*. Bred successfully Shet, probably on more than one island, 2nd Scottish record and first for Shet (RJT) (5: 218).

Spring: widespread movement Dumf 30 Mar, 1-16 Apr (AB, JMCD, RMcF, JFY, JGY); small passage E Fife 4-10 May (DWO); passage Isle of May, 17-18 Apr, 22 Apr, 4-6 May (JP); Fair Isle 14 Apr-31 May, especially 19-24 Apr, 5th and 15 May (RHD); Shet, small numbers 18 Apr-early May but very light passage (RJT). Last dates (and summer records): Peeb, 1 Portmore 29 June (DGA); E Loth, 3 Yellowcraigs 2 June (RSB); Isle of May, 4 from 4 June, 2 to 10th (JP); E Stir, 2 Skinflats 12 May (MH); Aber, 1 Strathbeg 12 May, 1 Old Aberdeen 27 May, 1 all summer Collieston (NE, ADKR), 1 Mar Lodge 28 June (DN-T, AW); E Inv, pr with ♂ singing Newtonmore 20 May (DNW); Ork, pr at 1967 breeding

site for a few days at end of May (EB); Fair Isle, stragglers 9-22 June (RHD).

Unprecedented early autumn build-up in N: Fair Isle, July 20th (1), 22nd (4), 26th (12), 28th (25), 31st (41), Aug 3rd (60), 8th (75), 11th (100), 14th (300), then dropping, nearly all juvs which completed moult on island instead of before migrating (RHD); Shet, arrivals from about 20 July, 'family party' Unst 22 July, Fetlar build-up July 22nd (5), 23rd (20), Aug 6th (50), 10th (300) (RJT); Ork, 2 Auskerry 8 Aug, 2 Lyde 12 Aug (EB), 2 Marwick 13 Aug, 6 S Ronaldsay 15 Aug (BC); O Heb, 1 N Uist 8 Aug (ARMcG); E Inv, 'family party' Newtonmore 26 July (per RJF), 2 nearby 4 Aug (JMa), 1 Insh 8 Aug (RAH), parties up to 6 daily Speyside from 15 Aug for 2 wks (HB, RJF, DNW); Isle of May, 2 on 2 Aug increased to 4 on 4th, 7 on 5th, 10-16 on 8-17 Aug (DJL, JP, ADW); E Loth, 2 Aberlady 14 Aug (HEMD); Midl, 1 Gladhouse 28 July (EMS). Other Aug records: Nairn, Kildrummie 29th (PF); 1 Fife Ness 29th (DWO); Isle of May, 50 daily end Aug (NJG).

Main arrival from 2 Oct, with some from early Sept: Shet, influxes about 4-6 Sept and early Oct (RJT); Fair Isle, 120 on 9 Sept, 140 on 11th, 1000 on 2 Oct (first main fall), 800 on 24 Oct, 1200 on 25th, 600 on 26th (RHD); Ork, 2000 N Ronaldsay 2 Oct, 1000 on 11-12 Oct (EB); O Heb, many Butt of Lewis 13 Oct (WAJC); W Suth, 4 Scourie 16 Sept (DMcD); W Ross, 2 Achiltibuie 17 Sept (DMcD), 5 Coulin 18 Sept (JAW); SE Suth, 26 Bonar Bridge 14 Sept (DMcD); E Inv, heavy Spey passage 2nd wk Sept, mostly over by 3rd wk Oct (DNW); Angus, 1000 Arbroath 5 Oct (MN); Kinross, from 11 Sept, mainly 5-6 Oct (AA, JHS); W Fife, 200 Kilbagie 6 Oct (TDHM); E Fife, large movement 1st wk Oct, peak 1500 Fife Ness 19th (DWO); Midl, 2 Edinburgh 11 Sept (MAMcD), 50 Moorfoots 15 Sept (WBr); E Loth, 1 Barns Ness 12 Sept (EMS, RWJS); Rox, 1000 passed Yetholm 5 Oct (RSB); Dumf, first Dumfries 26 Sept (DM), large movement 8 Oct (NSRG); Kirk, first Dalry 29 Sept (ADW).

Possibly because of juniper berry crop, some wintered Speyside 1967/68, which is unusual (RHD, RJF, DNW).

Song Thrush *Turdus philomelos*. No special comments on breeding status. Small spring passage Fair Isle 8 Mar-13 May, especially 17th and 19 Apr (RHD); a few Shet 18-28 Apr (RJT); 1 St Kilda 8th and 15 Mar (PW).

Main autumn passage Fair Isle from 10 Sept, unprecedented fall 2000 on 26 Sept, 300 on 27-30 Sept and 2 Oct, 150 on 24 Oct (RHD); Ork, 150 N Ronaldsay 26 Sept, 500 on 2 Oct, 400 on 11-12 Oct (RJW); E Inv, peak passage Speyside 1st wk Oct, still some 24th (DNW); Aber, passage Rattray Head 29 Sept, 5 Oct (NP, MW); Fife Ness, 500 passed on 19 Oct (DWO).

Redwing *Turdus musicus*. More breeding prs (about 25) known than ever before and probably well established in N Scotland; some 15 prs in one area and 4 in another not far away, of which breeding proved for 9 prs, positively identified as Scandinavian race *T. m. musicus* (anon); 3 prs nested NW Ross (RT), and 1 pr in previously used N Suth locality (HOB, EGH); in Strathspey, E Inv, 5 young in nest Badenoch district 28 May, fledged later (JMcE, DNW), one of pr disappeared from another nest (HB, RJF), and at least 2 other ♂♂ were singing late May/early June (DNW); 4 young flew from nest Stratherrick area of E Inv 2 June (LMcN, MMcN, SMcN); 2 singing some miles W of Dingwall, E Ross, 4 June (HOB).

Spring passage: Fair Isle 8 Mar-26 Apr, stragglers to 23 June (RHD); Isle of May, 17-20 Apr (JP). Late dates: 1 St Kilda 8 May (IDP); 1 Gordonstoun, Moray, 28 May, 8 June (THJ); 1 Forvie, Aber, 11 May (NP). Early return: 1 Fair Isle 14 Aug-3 Sept (RHD); 1 Insh 8 Aug (RAH), 4 Rothiemurchus 29 Aug (DNW), both E Inv. Odd birds from 5 Sept Fair

Isle (RHD), 7 Sept Isle of May (NJG), and on 11 Sept Edinburgh (MAMcD), 13 Sept Barns Ness, E Loth (MJE), 16 Sept Scourie, W Suth (DMcD). Main return from 21 Sept and especially 2 Oct thus: Shet, first about 21 Sept, many early Oct (RJT); Fair Isle, small peaks 21st and 26 Sept, mainly 2nd-3rd, 11th, 24-25 Oct (RHD); Ork, first 22 Sept (EB), N Ronaldsay peaks 2nd, 11th-12th, 24 Oct (EJW); O Heb, first Stornoway 22 Sept (WMA), many Butt of Lewis 13 Oct (WAJC); Aber, Forvie 21 Sept (NP); Angus, 1000 Arbroath 5 Oct (MN); E Stir, 2 Skinflats 5 Oct (MH); Kinross, 35 on 6 Oct (JHS); Fife Ness, 2 on 21 Sept, moving all day and into night 5 Oct, 1500 came in 19 Oct (DWO); Midl, a few Gladhouse 6 Oct (EMS, RWJS); Rox, main passage Yetholm 5 Oct (RSB); Dumf, large numbers arrived by 8 Oct (JGY).

One stayed from late Oct 1967 to early Apr 1968 in a Bearsden garden (WKR).

***Dusky Thrush** *Turdus eunomus*. One Whalsay, Shet, 24 Sept, 2nd Scottish record and first for Shet (JHSi).

Ring Ouzel *Turdus torquatus*. No reported change in breeding status. First dates: 24 Mar, 1 Garvald, Midl (WBr); 25 Mar, Scar Glen, Dumf (JMCD); 27 Mar, ♂ Rattray Head, Aber (MW); 28 Mar, in 7 Dumf localities (AB, JMCD, RMCF); 30 Mar, Speyside, E Inv (DNW). Small spring passage Fair Isle 16 Apr-7 June, 9 on 17 Apr (RHD); 30 Isle of May, 5-6 May (NGJ).

Autumn: Fair Isle, 21 Sept-9 Oct, unprecedented 165 on 26 Sept, good passage to 3 Oct, stragglers to 25 Oct (RHD); Ork, peaks 20 on 26 Sept, 12 on 2 Oct, N Ronaldsay (EJW); Isle of May, from 13 Sept, 14 on 27 Sept in SW gale (NJG). Last dates: 1 Arbroath 8 Nov (JD); very late ones Fair Isle 4th, 8th-9th, 19 Dec (RHD).

Blackbird *Turdus merula*. No reported changes in breeding status. Spring passage Rattray Head, Aber, 27 Mar (MW); large fall Fair Isle 29 Mar (RHD). Autumn: Shet, large numbers 22-27 Oct (RJT); Fair Isle, peaks 6th, 10th-14th, 20-24 Oct (RHD); Ork, peaks N Ronaldsay 2nd, 11th-12th, 24 Oct (EJW); Aber, passage Rattray Head 5th and 10 Oct (MW); E Fife, thousands coming in all day 19 Oct on wide front in E wind and fog (DWO). Usual influx of Continental birds late Oct in Dumf; winter-ringed birds continue to be recovered in Norway and Denmark, with some onward passage to Ireland (NSRG).

Wheatear *Oenanthe oenanthe*. Seemed less plentiful in summer in Kirk (ADW); numbers down Caith (DMS).

Arrival: 22 Mar, 1 Hillend, Midl (ADKR); 24 Mar, Crocketford, Kirk (DS); 26 Mar, ♂ Fair Isle (RHD); 28 Mar, 1 Parkgate and 1 Glencaple, Dumf (AFi, RG), N Berwick, E Loth (DA), 13 Arbroath, Angus (MN), widespread Kirk 28th-29th (ADW); 29 Mar, 2 (5 on 30th) Langholm, Dumf (RES), 4 Fife Ness (JARG), Tulliemet, Perth (THE), Sma' Glen, Perth (VMT), Rattray Head, Aber (MW), Spey, E Inv (HB), 1 Kinlochewe, W Ross (DBa), 2 Fair Isle (RHD); 30 Mar, Crawick Glen, Dumf (AB, JMCD, RMCF), Moor of Genoch, Wigt (RCD), 5 Yetholm, Rox (RSB), Gairloch, W Ross (ENH); 31 Mar, 7 Stornoway (IMcL) and pr Carloway, O Heb (WAJC). After snowstorm Fair Isle had 25 on 10 Apr, 50 on 15th, 250 on 17th (RHD); pr St Kilda 12 Apr, lots thereafter (HK); 50 Isle of May 21 Apr (JP); large one Fife Ness 6 Apr (NE), strong movement there 25 Apr (DWO).

Autumn: Fair Isle 17 Aug-26 Oct, 20 on 1 Oct (RHD); last Speyside 25 Oct (DNW, PAW); last Caerlaverock, Dumf, 23 Oct (JGY).

Stonechat *Saxicola torquata*. Inland Kirk population continues its recovery since 1963 (LAU, AFGW, ADW); Angus coastal territories have steadily increased in this period (GMC); Caith Oct-Dec numbers (8 localities) highest in recent years, perhaps owing to very mild weather (DMS).

Singles Fair Isle 22nd, 24th, 29-30 Mar (RHD); ♀ St Kilda 28 Mar

(PW). Other passage: 1 Fair Isle 15 May (RHD); 1 Whalsay, Shet, 21 Sept (JHSi); apparent migrants Rendall and Orphir, Ork, 2nd wk Oct (EB); 1 Isle of May 7 Oct (NJG); 1 Tynninghame, E Loth, 15 Sept (TB).

Whinchat *Saxicola rubetra*. More than usual in breeding season Buchan and Lower Deeside, Aber/Kinc (NP); extending range in new forest areas of N Suth (EGH).

First dates mainly from 20-22 Apr, one earlier and exceptional: 11 Apr, Kindrogan, Perth (VMT); 20 Apr, ♀ St Andrews, Fife (DWO); 21 Apr, 1 Aberlady, E Loth (MGW), 3 Gladhouse, Midl (EMS, RWJS); 22 Apr, Scar Glen, Dumf (JFY, JGY), Yetholm, Rox (RSB), 5 Isle of May (JADH). Also 1 Scalloway, Shet, 24 Apr (DC); 1 N Uist 29 Apr (ARMcG). Widespread Dumf by 30 Apr (JGY); mainly from 1st wk May in Perth (VMT). Passage Isle of May 22 Apr-3 June (NJG); Fair Isle 29 Apr-8 June, 10 on 10 May, 12 on 23rd (RHD); Shet influx about 10-11 May, 20 Out Skerries 12 May (RJT).

Autumn: Shet from 5 Sept, 20 Out Skerries 6th (RJT); Fair Isle 19 Aug-2 Oct, especially 29 Aug, 11-13 Sept, stragglers to 22 Oct (RHD); Fife 28 July-16 Sept, 20 Fife Ness 15 Sept (PGTB, DWO); Isle of May 24 Aug-22 Sept (NJG, BL). Another late bird, Crimond, Aber, 13 Oct (NE, MW).

Redstart *Phoenicurus phoenicurus*. Possibly less common than some years Kirk (ADW); absent from some usual E Loth sites (KSMcG); fewer than usual Altnaharra and Strathnaver, N Suth (EGH).

Early ♂ Irongrey, Dumf, 5 Apr (WA); 9 localities Dumf by 17 Apr (NSRG); early influx Shet from about 14 Apr (RJT); Ardeonaig 20 Apr, but main influx Perth from early May (VMT). Passage: Fair Isle 17 Apr-6 June, peaks 10th, 13th, 26 May (RHD); Isle of May 18 Apr-27 May, 100 on 5 May (JP); strong passage Fife Ness 4-10 May (10 on 7th) after E winds (DWO), and 5 Tentsmuir Pt 5 May (TGp); large movement Shet 10-12 May, 45 Fetlar and 20 Out Skerries on 12th (RJT).

Autumn: Fair Isle 24 Aug-29 Oct, peaks 11-12 Sept, 6th and 11 Oct (RHD); Shet, 20 Out Skerries 10 Sept, 15 Fetlar 8 Oct, last 25 Oct (RJT); Fife Ness 6 Aug-6 Oct, peak 6 on 13 Sept (DWO); Isle of May 5 Aug-25 Oct (NJG, IFS). Last: Tentsmuir Pt, Fife, 3 Nov (TGp); Rattray Head, Aber, 7 Nov (NE).

***Black Redstart** *Phoenicurus ochruros*. Recorded (about 11 spring, 14 autumn) 17 Apr-27 May, 6 Sept-30 Oct and 28 Nov: Shet, 18 Apr Fetlar (RJT), 21 Apr Whalsay (JHSi), 13 May Fetlar (RJT), 2 Whalsay 28th and 30 Oct (JHSi); Fair Isle (singles unless stated) Apr 30th, May 12th, 24th, 26th (2), 27th, Sept 6th-18th, 28th, Oct 13th, 20th, 21st, 22nd (all 3 different), 23rd (3), 24th (RHD); Aber, ♀ Old Aberdeen 17 Apr (ADKR), juv ♂ Cruden Bay 19 Oct (NP); N Kinc, ♂ Girdle Ness 28 Nov, first record (NE); Fife, single ♂♂ Fife Ness 7th and 9 May (RBH, DWO), ♀ Elie 11 May (RBH); Isle of May, 2 on 20 Oct, 1 to 23rd (IFS).

***Nightingale** *Luscinia megarhynchos*. Singles trapped Fair Isle 19th and 22 Apr (RHD); 1 Isle of May 29-30 Apr (JP).

***Bluethroat** *Cyanosylvia svecica*. Nest and eggs found Moray Basin (since revealed as E Inv) June, eggs lost to predator, only one adult seen (JJDG) (5: 220). First British breeding.

Migrants 6 May-5 June, 29 Aug-13 Oct: Shet, 1 Whalsay 12 May (JHSi); Fair Isle, 1 on 10-12 May, another 13th, 1-3 almost daily 21-31 May, 1 on 5 June, 1-3 on 19 days 29 Aug-24 Sept, 1 on 6-13 Oct (RHD); Fife Ness, 1 on 6-7 May (DWO), 1 on 14 Sept (HGp, DWO); Isle of May, 3 on 6 May (JP), 1 on 22nd and 3 others 23rd (MFMM), 1 on 12-13 Sept (GLAP), 2 on 17th (BL); E Loth, 1 Gullane Pt 16 Sept (WKR).

Robin *Erithacus rubecula*. No reported change in breeding status. Spring passage: Fair Isle 11 Apr-23 May, peak 17-19 Apr (60 on 17th) and to 27th (RHD); Shet, influx 14 Apr, small movement about 12 May

(RJT); Fife Ness, a few from 28 Apr (DWO). Autumn: Fair Isle 16 Sept-16 Nov, peaks 5th and 10-11 Oct (RHD); Shet, trickle from 14 Sept, increase about 9 Oct (RJT); Aber, evident Continental birds on coast 21 Sept and especially 5 Oct (NP); likewise Fife Ness 5-19 Oct (DWO), this and the previous racial identification being partly based on circumstances.

Grasshopper Warbler *Locustella naevia*. Reeling in a dozen places Dumf by 17 May and increasing, especially in young plantations (NSRG), in which also abundant Kirk (LAU, ADW); general throughout mainland Clyde and probably increasing (MFMM); increasing new plantations Selk (AJS); 10 prs about Yetholm, Rox (RSB). On E coast N of the Forth scattered spring/summer reports from: Fife (4) (PGTB, DWO); Perth (2) (EJ, IMcLa); Angus (6) including record of 5 reeling Fotheringham 4 July (ARB, RTB, GMC, JD, JIS, RWS); N Kinc, 1 Maryculter 27 Apr (RIM), 3 Tilquilly 20 May (NP), 1 Banchory 27 June (CO); Banff, singing ♂♂ Ben Rinnies area (SR); E Inv (2) (WAS); E Ross, singing Maryburgh 13th and 16 May (HDS); SE Suth, singing 4 areas Dornoch 28 Apr-8 Aug, first records (DMB, JMG, DMcD); Caith, 1 Reay 2nd wk May, 1 summered Thurso, first records (JG, PMcM, DMS); W Suth (1) (ARB, RTB).

Arrival: 19 Apr (an early date), 1 Isle of May (also 1 on 20th and 22nd) (JHL, JP); 20 Apr, Langholm, Dumf (ELOC); 21 Apr, Yetholm, Rox (RSB), Dirleton, E Loth (MGW), Fair Isle (RHD), Fetlar and Sumburgh, Shet (RJT); 24 Apr, Jardine Hall, Dumf (RTS), 7 Moor of Genoch, Wigt (RCD), Ormiston, E Loth (KSMcG), 1 Kinnaber, Angus (GMC, JD); 25 Apr, Selkirk (AJS), Kilconquhar, Fife (DWO). Fair Isle had singles 11 days 21 Apr-15 May, 3 on 29 Apr, 2 on 10 May (RHD); 4 Out Skerries, Shet, 2 May (RJT). Last: Fetlar 21 July (RJT); Elie, Fife, 28 July (DWO); Thurso, Caith, 12 Aug (DMS).

***Reed Warbler** *Acrocephalus scirpaceus*. Fair Isle, singles 5th-8th, 11 May, 24 Aug, 9 days in Sept, 3 Oct (RHD); Isle of May, singles 25 May (MFMM), 9 Sept (GLAP); E Loth, Reed/Marsh Warbler Aberlady 27 Aug (RFu).

***Marsh Warbler** *Acrocephalus palustris*. One Fair Isle 6 June (RHD).

Sedge Warbler *Acrocephalus schoenobaenus*. Still breeding O Heb (WAJC) and Ork (EB); numbers down Caith (DMS).

First dates (rather early): 21 Apr, Aberlady, E Loth (MGW), Fair Isle (RHD); 22 Apr, Yetholm, Rox (RSB); 23 Apr, Kilconquhar, Fife (12 on 25th, 20 on 26th) (PGTB, DWO); 24 Apr, Moor of Genoch, Wigt (RCD); 26 Apr, Kingoodie, Perth (HBo), Montrose, Angus (JD), Shet (RJT). Also in Apr in Midl (2 sites) (DGA), Isle of May (JP), E Stir (MH), Kinross (AA, JHS), E Ross (CGH), but not till 1 May in Dumf (JGY), Aber (NP). Spring passage: Isle of May 29 Apr-1 June (JP); Fair Isle 21 Apr-8 June (one 17-21 June), peak 25-31 May (RHD). Autumn: Fair Isle singles 5 Sept, 6th and 9 Oct (RHD); Isle of May 13 Aug-13 Sept (NJG). Also in Oct, 1 Forvie, Aber, 6th (NE, NP, MW).

***Icterine Warbler** *Hippolais icterina*. Records 27 May-8 June, 6 Aug-29 Sept (singles unless stated): Fair Isle, May 27th, 29th (2), 31st, June 1st, 2nd (2), 3rd, 8th, Aug 6th, 9th (2, new, 1 to 11th), Sept 6th-7th (RHD); Shet, Helendale 28 May (DC), Whalsay 20 Aug, 26th and 29 Sept (JHSi); Scourie 1 Sept, first for NW Highlands (CGC); Fife Ness 22 Aug (PGTB) and 27th (DWO).

***Booted Warbler** *Hippolais caligata*. One Fair Isle 8 Sept, 4th Scottish record (RHD).

Blackcap *Sylvia atricapilla*. Pr breeding Vicar's Bridge, W Kinross, first occurrence in county (ICM).

Arrival: 14 Apr (early date), 1 Fetlar, Shet (also 19-21 Apr) (RJT); 17 Apr, 1 Lerwick, Shet (DC); 21 Apr, ♂ Kilconquhar, Fife (DWO), Isle of May (JP); 22 Apr, ♂ Castletown, Caith (♀ 26th) (DMS); 28 Apr, 2

Lochmaben, Dumf (RTS), Edinburgh (AFL), Tulliallan, Fife (ARB, RTB). Main arrival by 2 May Dumf (JGY); noted various counties early May, and migrants Fife Ness (DWO); passage Fair Isle 29 Apr-3 June, singles 16 June, 5 July (RHD); Shet influx 11-12 May (RJT).

Early very heavy autumn passage Fair Isle, Sept 3rd (4), numbers to 8th (17), peaks 13th (25), 21st (60), 22nd (50), 23rd (40), 26th (25), 29th (25), Oct 1st-2nd (20), 9th (12), 23rd (9), stragglers to 28 Nov (RHD); with some reflection Shet (RJT) and Ork (EB, RJW), especially about 20-22 Sept; last Shet 27 Oct (RJT), Caith 9 Nov (JARG).

Many winter records, with some apparently still moving in early Dec: Dumf/Kirk, 2♂♂ Dumfries Jan-Mar (JKRM, JSe), and pr 29 Nov-11 Dec (♂ to 13th) (EKA), ♂ Dundee mid Feb (per ADW); Ayr, ♂ Hayhill 16 Nov (WB); Renf, ♂ Bridge of Weir 15th and 25 Jan (ERTC), ♂ Clarkston 30 Dec (BMSM); Lan, ♀ Bellshill 13 Dec (KCRH); Arg, ♂ Campbeltown 13 Jan (FRT); Peeb, ♂ Carllops 3rd and 6 Jan (JVBC, EG); Midl, ♂ Juniper Green 1 Jan (per RWJS), ♀ Bonnyrigg 26 Jan-5 Mar, ♂ 3 Feb (JB), ♂ Colinton 10-12 Feb (PM), ♀ Corstorphine 17 Feb-5 Mar (AMa); Fife, ♂ St Andrews 22nd and 29 Jan (RAC), ♂ Kirkcaldy 17 Nov, ♀ 15 Dec (GHB); Aber, Rattray Head 8 Dec (NE, ADKR); Banff, ♀ Jan-Feb (AFWS); Moray, ♂ Gordonstoun 7 Dec (THJ); E Inv, ♀ 3 Jan-Mar, ♂ 28 Feb-8 Mar (paired), ♀ 26th and 29 Dec, all Inverness (MMcI).

***Barred Warbler** *Sylvia nisoria*. Records 7 Aug-23 Oct: Shet, 1 Fetlar 18-21 Aug, 2 Whalsay 20 Aug, 1 Unst 16 Oct (RJT); Fair Isle, 9 Aug-29 Sept, especially 23 Aug-15 Sept, with Aug 23rd (5), 24th (5 new), 25th (3 new), 27th (4), 29th (8, 4 new), up to 3 to 15 Sept, stragglers 5 Oct (2), 23 Oct, latest ever (RHD); Ork, 1 Birsay 7-11 Aug (BC), 4-6 N Ronaldsay (singles 22nd, 23rd, 25th, 29 Sept, 2nd and 9 Oct, 2 on 26 Sept) (EJW); Fife Ness, 1 on 2 Sept (DWO), 2 on 15th (HGp); Isle of May, 6 on 2 Sept (GAP), 3 more by 10th (GLAP).

Garden Warbler *Sylvia borin*. Breeding in a few scattered sites Kinross, first occurrence (JHS); at least 14 territories Angus (GMC); nest with young Newtonmore June, first E Inv breeding (AM); nest with 5 eggs Grantown June, first breeding Moray (HM); ♂ Cullen 3 June, first for Banff (JE).

Arrival: 17 Apr (early date), Keir, Dumf (JFY); 21-22 Apr, 1 Fair Isle (RHD); 26 Apr, Banchory, N Kinc (NP); 27 Apr, Edinburgh (AMS); 29 Apr, Shet (RJT). Widespread Dumf by 5 May (NSRG). Passage: Fair Isle, 1 as above, 1 on 11th and 15 May, more 24 May-9 June (6 on 25 May, 5 on 31st, 8 on 5 June), singles 16 June, 2 July (RHD); Shet to 13 June, peak 12 May (RJT); Isle of May 11 May-4 June (AMcD, JP). Autumn: Fair Isle 16 Aug-1 Nov, mainly 25 Aug-21 Sept, 33 on 5 Sept, 35 on 8th (RHD); Shet peaks 4-6 Sept (40 Out Skerries 6th) and about 10 Sept (50 Out Skerries) (RJT); Moray, 1 Gordonstoun 22 Oct (THJ); Aber, 1 Rattray Head 13 Oct (NE, AR, MW); Fife Ness 23 Aug-13 Sept (PGTB, DWO); Isle of May 13 Aug-24 Oct (IFS, ADW); Dumf passage started by 14 Aug (NSRG).

One ringed Isle of May 14 Aug 1965 recovered near Lisbon, Portugal, 8 Aug 1968 (5: 263).

Whitethroat *Sylvia communis*. No reported changes in breeding status, but now breeds regularly Caith (DMS), and still breeds Stornoway, O Heb (WAJC).

Arrival: 16 Apr, 1 Isle of May (JP); 17 Apr, Fair Isle (RHD); 20 Apr, 1 Caerlaverock, Dumf (JGY); 21 Apr, Laurieston, Kirk (JDo, ELR); 22 Apr, Yetholm, Rox (RSB), Usan, Angus (GMC); 23 Apr, 1 N Berwick, E Loth (DA); 24 Apr, 1 Blackford Hill, Midl (7 by 28th) (RMS); 25 Apr, Lundin Links, Fife (PGTB), Caith (PMcM); 26 Apr, 2 L Heron, Wigt (ARB, RTB), Kingoodie, Perth (HBo). Widespread Dumf by 1 May (JGY). Passage: Fair Isle 17 Apr-12 June, peaks Apr 30th (9), May 10th (15), 26th (25), 27th (15), 29th (20), 31st (15) (RHD); Shet peaks 1st-2nd, 11 May

(15 Fetlar) (RJT); Ork peak 29 May (10 Auskerry) (EB); Isle of May 16 Apr-10 June (JP).

Autumn: Isle of May 14 Aug-20 Sept (NJG, BL). Later records: Fair Isle to 25 Sept (RHD); 1 Sanday, Ork, 22 Sept (EB); 1 Rattray Head, Aber, 8 Oct (NE); 1 Fetlar, Shet, 9 Oct (RJT).

One ringed Isle of May 15 May 1965 recovered France July 1967 (5: 263).

***Lesser Whitethroat** *Sylvia curruca*. No breeding record, but singing birds at Yetholm 16 June, 6th and 14 July, first for Rox (see 3: 48) (RSB), and Alloway, Ayr, 11 May-23 June (WB, MEC, SLH).

Spring 20 Apr-23 June: Isle of May, 6 between 24th and 30 Apr, 3 on 4 May, 4 on 22nd (JMSA, JP); Fife, 1 E Wemyss 28 Apr (RAC), 1 Fife Ness 6 May (DWO); Aber, 1 Newburgh 8th and 19 May (WM); Ork, 1 N Ronaldsay 1 June (EJWi); Fair Isle, small passage 20 Apr-9 June, 12 on 10 May, 7 on 15th (RHD); Shet, some May, especially 12th and after, 1 on 23 June (RJT).

Autumn 17 Aug-29 Oct: Shet, singles 17 Aug, 5th, 6th, 9 Sept (RJT); Fair Isle 23 Aug-29 Oct, 4 on 27th and 30 Aug, 6 on 18 Sept (RHD); Ork, 1 N Ronaldsay 21 Sept (EJW), 1 Rendall 10 Oct (EB); Aber, 1 Forvie 14th and 23 Sept, 6 Oct (WM, NP); Fife Ness, 1 on 8th-9th, 15 Sept (HGp, PGTB, DWO); Isle of May, 2 on 27-29 Aug, 5 ringed Sept (BL, KP, GLAP); Ber, 1 St Abbs 16 Sept (TB, EMS, RWJS); Midl, 1 Roslin 27 Aug (ADKR).

Singles of Siberian race *S. c. blythi* Fair Isle 17th and 30 Sept (RHD).

***Subalpine Warbler** *Sylvia cantillans*. One Whalsay, Shet, 22 Apr-5 May, second bird 5 May (JBr, JHSi); 1 Auskerry, Ork, 29 May (EJWi).

Willow Warbler *Phylloscopus trochilus*. Very early bird (considered acceptable by ADW, JGY) seen and heard Langholm, Dumf, 31 Mar (KB); 1 heard Ballinluig, Perth, 9 Apr (THE); noted Ardwell, Wigt, 13 Apr (RCD), St Andrews 15 Apr (JMcF), but most first dates thereafter: 17 Apr, Yetholm, Rox (RSB), L Leven (where arrivals continued and bulk in by 24th) (AA, JHS), Fair Isle (RHD); 18 Apr, widespread Dumf (NSRG), 1 Isle of May (JP), main arrival started Perth (VMT); 19 Apr, Selkirk (AJS), Muir of Ord, E Ross (DCH), Gairloch, W Ross (ENH); 20 Apr, Dalry, Kirk (ADW), 7 Moor of Genoch, Wigt (RCD), N Berwick, E Loth (DA), main arrival period E Fife (DWO), 1 Letham Grange, Angus (JD), 1 St Kilda (HK); 21 Apr, 20 Gladhouse, Midl (EMS, RWJS), many Threipmuir, Midl (TB), noted Glassel, N Kinc (DGA), Ballater, Aber (NE), Bullenie, Caith (DMS), Stornoway, O Heb (IMcL). Passage to early May in Kinross (AA, JHS); fall Fife Ness 6-7 May (30 on 7th) (DWO); Fair Isle 17 Apr-7 June, 75 on 10 May, 20-50 to 15th, 18 on 24th, stragglers to 7 July (RHD).

Autumn: Fair Isle 7 Aug-6 Oct, mostly 17 Aug-22 Sept, peaks Aug 17th (15), 25th (25), 28th-29th (30), Sept 8th and 10th (25), 19th (15) (RHD); Fife Ness, fall from 23 Aug (DWO); Isle of May, up to 50 on 25-31 Aug (KP), last 11 Oct (BU).

Northern bird *Ph. t. acredula* Fair Isle 16 June (RHD). Juv ringed Kilconquhar, Fife, 27 Aug 1967, recovered Algarve, Portugal, 19 Sept 1968 (DWO).

Chiffchaff *Phylloscopus collybita*. Nest with 4-5 young Skibo woods 5 June, first SE Suth breeding (IDP); otherwise usual thin scatter of summer records (without proof of breeding) N of main range.

Leaf-warbler, presumably a Chiffchaff, Stranraer, Wigt, 3 Mar (DS, RTS, JGY). Single birds Canonbie, Dumf, 29 Mar (RES), Caerlaverock 30 Mar (WA), Fair Isle daily 29 Mar-1 Apr (RHD); 15 Culzean, Ayr, 5 Apr (TMC); 2 Pressmennan, E Loth, 8 Apr (DGA); 2 St Kilda 9 Apr (HK); Ballinluig, Perth, 10 Apr (THE), and Kindrogan 11 Apr (VMT); but in most areas first records not till 13 Apr onwards; protracted arrival Dumf, where not widely recorded till mid May (JGY). Peak passage

Fair Isle 25 on 17 Apr, 10-20 to 23rd, last 6 June; again from 8 Sept, peaks Oct 6th (15)-11th, 23rd (10), 25th (11), stragglers Nov to 9 Dec (RHD); in Ork, 7 N Ronaldsay 6 Oct, 1-2 at Binscarth to end Noy (EB).

Wood Warbler *Phylloscopus sibilatrix*. Increasing Nithsdale, Dumf (JMx, JFY, JGY); absent from several Selk haunts, apparently not just from habitat destruction (AJS).

First dates: 27 Apr, Kenmore and Ardeonaig, Perth (VMT); 28 Apr, several Garroch, Kirk (JKRM, LAU); no other areas before 6 May. Singles Fair Isle 6 dates 22 May-3 June (RHD). Autumn: singles Fair Isle 6 dates 16-29 Aug, 8 Sept, unusual run 12-26 Sept (3 on 18th and 23rd) (RHD); Shet, singles 5 dates 1-19 Sept (DC, JHSi); Dumf, marked movement Thornhill, 7 trapped 3-12 Aug (NSRG, JFY).

***Arctic Warbler** *Phylloscopus borealis*. One Fair Isle 12-15 Aug (RHD).

***Yellow-browed Warbler** *Phylloscopus inornatus*. Birds (21), singles unless stated, 13 Sept-23 Oct: Shet (2), Sumburgh 1 Oct (PKK), Whalsay 15 Oct (JHSi); Fair Isle (11), Sept 13th, 17th-18th, 26th-29th, Oct 2nd (2), 3rd (3, 2 new), 4th, 5th (new), 6th (2), 7th (new), 23rd (RHD); Ork (6), N Ronaldsay Sept 21st, 22nd, 26th, 29th, Oct 2nd, all different (EJW), Kirkwall 3 Oct (EJWi); Fife Ness 5-6 Oct (JMcl, DWO); Isle of May 9-10 Oct (PK, DJN, BU).

***Pallas's Warbler** *Phylloscopus proregulus*. One Collieston, Aber, 22-24 Oct, 2nd Scottish record and first for Dee, part of an astonishing influx (*Brit. Birds* 61: 577) (AAn, NE, WM).

***Radde's Warbler** *Phylloscopus schwarzi*. One Isle of May 22 Oct, 2nd Scottish record (IFS).

Goldcrest *Regulus regulus*. No reported changes in breeding status. Small spring passage: Fair Isle 29 Mar-27 Apr, peak 20-21 Apr (RHD); Shet 14-24 Apr (RJT); Fife Ness 17 Apr (DWO); St Kilda, where rare, singles 8th, 9th, 16th, 28 Apr (HK, IDP). Autumn: Shet 7 Sept-15 Oct (RJT); Fair Isle 14 Sept, 2 Oct, passage 9 Oct-1 Nov, peak 9-15 Oct, late bird 11 Dec (RHD); Ork, a few N Ronaldsay from 9 Oct (EJW), Mainland 27 Oct, small group Binscarth late Nov (EB); Aber, Forvie 22 Sept-30 Oct (NE, WM, NP); Fife Ness, from 9 Sept, 6 on 5 Oct (DWO); Dumf, 40-50 Caerlaverock 16 Sept (JGY); Kirk, many Carsethorn same day (JDo).

One ringed Isle of May 24 Sept 1966 recovered Holland 19 Apr 1968 (5: 263).

***Firecrest** *Regulus ignicapillus*. One Isle of May 11-13 June (IT); 1 Seaford, Lerwick, Shet, 11 Oct (PKK).

Spotted Flycatcher *Muscicapa striata*. One pr bred Vane, Kinross, where 4 in 1967 (JHS); no other reported changes.

First dates rather spread out: 28 Apr, 1 Blackford Hill, Midl (AFL); 29 Apr, 1 L Earn, Perth (ARB, RTB); 3 May, Thornhill, Dumf (JMx); 5 May, 2 Isle of May (JP); 8 May, Old Aberdeen (ADKR, MW); 11 May, Yetholm, Rox (RSB), 1 St Kilda (RT); 12 May, Vane, Kinross (JHS), several places Shet (RJT). Widespread Dumf by 17 May (NSRG). Passage: Isle of May to 13 June (NJG); Ork, 10 Auskerry 29 May (EJWi); Fair Isle, first 15 May, mainly 23 May-13 June (RHD); Shet to 3 June (RJT).

Autumn: Shet, 3 between 23 Aug and 22 Sept (RJT); Fair Isle, a few 23 Aug-12 Oct (RHD); Isle of May 28-29 July and 27 Aug-13 Sept (NJG, GLAP). Last: Rattray Head, Aber, 24 Oct (ADKR, MW); Ladykirk, Ber, 3 Nov (KAMcK).

Pied Flycatcher *Muscicapa hypoleuca*. Impression of decrease on account of lack of nest sites Kirk (ADW), but good numbers where boxes put up Dumf and new breeding sites found Crawick Glen (WD) and Village of Ae (HO); pr summer Mugdock Wood, W Stir (TMC); none Ancrum, Rox, where several 1967 (AJS); only one report Perth, where

fluctuates (DBMcG, VMT); none Speyside, where same applies (DNW); bred Aberlour, first breeding in Banff (DB).

Only Apr record ♂ Isle of May on 18 Apr (JP). Subsequent arrival: 3 May, ♂ Glenarlie, Dumf (JMx, JGY); 4 May, passage Fair Isle till 2 June (4 on 15-16 May) (RHD); 5 May, ♀ Lochaber, Kirk (CKMcK, RJWS), 1 N Berwick, E Loth (DA), start of extensive fall after E winds E Fife with some 12 ♂♂ and 3 ♀♀ at 10 localities between 5th and 17 May (per DWO), records Isle of May to 1 June (JP), first of series of Angus records 5-19 May (GMC). Others in N: pr St Kilda 11-12 May (MJHR, RT); ♂ Coulin, W Ross, 19-20 May (ENH, JAW); 1 Caith 12 May (KH); Shet passage 10-26 May (RJT).

Autumn: Shet, small movements 24-28 Aug, from 5 Sept, 10-15 Sept (RJT); Fair Isle 16 Aug-16 Sept, peaks 25th and 28 Aug, 7 Sept, stragglers to 13 Oct (RHD); Isle of May 3 Aug to 15 on 13 Sept (NJG, GLAP); 1 N Uist 21 Aug (ARMcG), and 2 Garry, Lewis, 1 Sept (WAJC, RMcI, IMcL, WMa); ♂ Achnasheen, Ross, 24 Sept (ARo); last Rattray Head, Aber, 6 Oct (MW); 1 trapped Keir 16 Sept, first Dumf autumn bird for at least 5 yrs (JFY).

***Red-breasted Flycatcher** *Muscicapa parva*. Two spring, 19 autumn records. Single ♀♀ Fife Ness 7 May (DWO), Fair Isle 25 May (RHD). Otherwise singles (unless stated) E coast 2 Sept-13 Oct: Shet, Whalsay 29 Sept (JHSi), Sumburgh 29 Sept-1 Oct (NB, DC, PKK), Aywick 13 Oct (JN, RJT); Fair Isle 12th and 20 Sept, 11 Oct (RHD); Ork, Deerness 11 Sept (EJWi), 2 Sanday 21 Sept (EB), N Ronaldsay 2nd-3rd and 9 Oct (EJW); Aber, Forvie 21 Sept (NP), Rattray Head 22 Sept (NE, AR, MW) and 5-6 Oct (NE, JAL), Collieston 5 Oct (NP); Fife Ness 8th-10th and 14 Sept (PGTB, WJE, DWO); Isle of May 2nd (GAP) and 9-11 Sept (GLAP); Ber, first record, St Abbs Loch 14 Sept (RWJS).

Dunnock/Hedge Sparrow *Prunella modularis*. No reported changes in breeding status. Passage: Fair Isle, 1 on 19-20 Mar, a few 12 Apr-8 June, then 16 Sept-16 Nov, mainly 11-31 Oct, peaks 11th, 15th and 30th (RHD); Shet, Fetlar 20 Apr, elsewhere 27 Oct, 6th and 18 Nov (RJT); Ork, 3 N Ronaldsay between 21 Sept and 24 Oct (EJW); usual Oct influx Applegarthtown, Dumf, ringing site but no recoveries to indicate source (NSRG). In Shet 1 wintered 1967/68 Unst (FJW), 1 Mid Yell 1968/69 (RJT).

One ringed Isle of May 2 Oct 1965 recovered Belgium 11 Nov 1967 (5: 263).

***Richard's Pipit** *Anthus novaeseelandiae*. Records 8 Sept-23 Nov: Fair Isle, one 8-22 Sept, two 11 Oct, two 15-16 Oct (1 to 18th), singles 22-24 Oct, 6-7 Nov, 23 Nov (RHD); Ork, 1 N Ronaldsay 2 Oct, 1 on 26th (EJW); N Kinc, 1 Girdle Ness 19 Oct, first for Dee (ADu, AFL, MAMcD); Isle of May, singles 17th-18th and 19-21 Sept, first records (JAG, ERM). Ork records subject to acceptance by Rarities Committee.

Tree Pipit *Anthus trivialis*. Probably increasing Dumf (NSRG), but may be decreasing in parts of Kirk (ADW).

Arrival: 12 Apr (early date), 1 Roslin, Midl (ADKR); 14 Apr, 1 Blackford Hill, Midl (RMS); 17-19 Apr, 1 Fair Isle (RHD); 21 Apr, L Leven, Kinross (JHS), Ardeonaig, Perth (VMT), 2 Derry Lodge, Aber (NP); 22 Apr, 2 Old Aberdeen (ADKR); by 24 Apr, Glenarlie, Dumf (JMx). Passage: Fair Isle 10 May-8 June, peaks 10th, 12th, 14th, 31 May (RHD); Shet, from 12 May (RJT). Autumn: Shet, 1 Out Skerries 6 Sept (RJT); Fair Isle 2 Sept-10 Oct, peaks 5th-6th, 26th, 30 Sept (RHD); Ork, 1 N Ronaldsay 6 Oct (EJW).

Meadow Pipit *Anthus pratensis*. No reported changes in breeding status. Main return Yetholm, Rox, 23-30 Mar (RSB), corresponds with Fair Isle increase from 6 on 20 Mar to 45 on 29th (RHD); flock 20 St Kilda 7 May (IDP); 100 Braedownie, Angus, 9 May (GMC). Sept passage: Fair Isle from 23rd (RHD); Ork, obvious migrants Sanday 20th-

22nd (EB); Kinross, 100 on 20th-21st (JHS); Fife Ness, 400/hr 7th, 500 in field in fog 10th (DWO); Isle of May, peak 13th-25th (NJG). Usual large winter flocks (cf. *Birds of Scotland*) Caerlaverock to Annan, Dumf, littoral area (JGY).

***Red-throated Pipit** *Anthus cervinus*. One Fair Isle 15 Sept (RHD).

Rock Pipit *Anthus spinoletta*. No reported changes in breeding status. Some passage Fair Isle from 23 Aug through Sept (RHD). Singles, inland Midl, Gladhouse 13 Oct (DGA), Cobbinshaw 9 Nov (TB, EMS, RWJS).

Pied/White Wagtail *Motacilla alba*. Two White *M. a. alba*, the usual race there, had young in nest Shet 25 May (RJT); Pieds *M. a. yarrelli* continue to breed Ork and O Heb in small numbers (EB, WAJC).

Passage White: Fair Isle 17 Apr-31 May, peaks 27-29 Apr, 9-10 May (RHD); Shet 14 Apr-early May (RJT); St Kilda 23 Apr, 15 on 30th, 20 on 8 May (HK, IDP). Other dates: Midl, singles, Gladhouse 7th and 28 Apr, 5 May (DGA, EMS, RWJS), Duddingston 20 Apr, 4 May (DRA); E Stir, 10 Skinflats 28 Apr (MH); Fife, 1 Ballo 27 Apr (AMMF), 2 Fife Ness 28th and 30 Apr (DWO); Moray (first record of race), 1 Covesea 29 Apr (THJ); Inverness from 29 Apr (MR). Autumn: Shet from early Aug (RJT); Fair Isle 6 Aug-19 Oct, peaks 18th, 25th, 28 Aug, 4th and 16 Sept (RHD).

Passage Pied: 2 Fair Isle 10th-12th, 21-24 Apr, 1 on 6 May; 1 autumn 25 Sept (RHD). Widespread Dumf movement 29 Sept-17 Oct (JDo, RTS, JGY). One ringed Auchenmalg, Wigt, 9 June 1965 found dead Sherbourne, Dorset, about 7 Apr 1968 (ADF).

Grey Wagtail *Motacilla cinerea*. At least one pr continues to breed O Heb, at Stornoway (WAJC).

Passage: Ork, 4 Finstown 1st wk Aug (EJWi); E Fife, 2 in from sea Fife Ness 13 Sept, 1 Kilrenny Common same day, 1 in from sea St Monance next day, 1 Balcomie 6 Oct (DWO).

'Yellow' Wagtail *Motacilla flava*. No reported change in Clyde breeding status; no proof of breeding E Stir though family party Skinflats 29 July (TDHM).

Other Yellow *M. f. flavissima* 17 Apr-8 May: Midl, ♂ Gladhouse 5 May (DGA); Kinross, ♀ L Leven 2 May (JHS); Isle of May, 1 on 17th, 24-25 Apr (JP); Fife, ♂ Fife Ness 30 Apr (DWO); Moray, 1 Covesea 24 Apr, 7 May (THJ); St Kilda, ♂ 8 May, first record of race (IDP); Fair Isle, 1-2 on 10 days 17 Apr-1 May (RHD); Shet, ♂ 28 Apr (DC).

Grey-headed *M. f. thunbergi*: Shet, 2 Scatness 10 May (DC, RJT), 2 Whalsay 12 May (JHSi); Fair Isle, 1-3 between 21st and 30 May (RHD).

Blue-headed *M. f. flava*: Shet, 1 Out Skerries 2 May (RJT); Fair Isle, small passage 26 Apr-5 June, singles probably this race 9 Aug, 3 Sept, 5 Oct (RHD); Lan, ♂ (with ♀ of species) Hamilton 4 Aug (DCS).

Race unspecified. Spring: I Heb, ♀ Tiree 5 June (MJE), first on island for many years (JGr); Midl, ♀ Edinburgh 4 May (AFL); Isle of May 22-28 Apr, 25-26 May (JMSA, JP); Angus, 1 Nether Balgray and 1 between Isla and Prosen glens 15 Apr (GMC); Caith, 1 Sandside 12 May (DGs), 1 Castletown 16 May (DMS); Ork, 1 Start Pt 4 June (EJWi). Autumn: Shet, 1 Out Skerries 6 Sept (RJT); Moray, 1 Covesea 19 Sept (THJ); Aber, 3 Rattray 7 Sept (MW); Angus, 1 Kirkton of Glenisla 1 Aug (AN); Isle of May, 1 on 8 Sept (GLAP); E Loth, 1 Aberlady 24 Aug (DCS); Wigt, 2 Luce Bay, late Aug (WHM).

***Citrine Wagtail** *Motacilla citreola*. One Isle of May 20 Sept, first record (JAG, ERM).

Waxwing *Bombycilla garrulus*. Substantial invasion winter 1967/68 (reports of 300+ observers summarised by MJE), widespread except in N and W (cf. 4: 546); earliest 30 Stonehaven, Kinc, late Sept 1967;

small numbers second half Oct (Rothiemurchus 19th, Brechin 24th, Duns 25th), but most arriving and dispersing Nov and Dec; stragglers to Apr and a few into May; last 1 L Garten 31 May (JAMcE); mostly small numbers but frequently 20-30, 4 reports of 60 (max. 68 Boat of Garten Dec); largest concentration 300-1000 (taken as 600 in table) Speyside, E Inv, Jan, possibly owing to heavy crop of juniper berries (DNW); the table shows the number of birds in each faunal area month by month (and the number of reports).

Faunal area	Total birds (and reports)	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
N Isles	170+ (12)		37	130+		4				
N Coast	50+ (15)			50+						
Moray	930 (76)		7	73	320	750	100+	40	10	3
Dee	210 (22)	30	30	140	53	16	65	14		
Tay	650 (86)		8	385	87	180	66	7	30	
Forth	800+(145)		12	410	148	135	220	15	3	1
Tweed	115 (18)		3	86	24	8				
O Heb	50+ (5)			50+						
NW High	12 (3)			9		3				
Arg/I Heb	21 (5)			8	3	10				
Clyde	600+(110)		1	194	232	101	98	67	2	
Solway	250 (33)			16	49	116	110	10	2	1
	3858 (530)	30	98	1551	916	1323	659	153	47	5

No invasion in autumn 1968, 45 reports of about 160 birds in all (notes of 35 observers summarised by MJE), mostly scattered N Isles and E coast, but 1 report Stornoway, 1 W Ross, 1 Glasgow and 3 Solway; mostly Oct and Nov, 4 Dec records; earliest 5 Ae, Dumf, 23 Sept (HO), and 20 Braemore Lodge, W Ross, 27 Sept (per MR); first Oct dates 11th Stornoway, 14th Fetlar, 17th Fair Isle; max. 20 as above, 16 Dores, E Inv, 16 Nov.

***Great Grey Shrike** *Lanius excubitor*. Recorded (singles unless stated) to 8 June and from 24 Sept (mainly Oct). Spring (about 38): Kirk, Carsphairn Jan (IWA), sites near Dalry 1 Feb (GAF), 26 Feb (LAU), early Apr (THa), Cairn Edward Forest Feb-31 Mar (ADW); Rox, St Boswells 3 Jan (ADKR), Gattonside 12-20 Mar (AMW); Peeb, Neidpath Castle 25 Mar (AMW); Lan, Motherwell 26 Dec 1967-6 Mar (KCRH); Dunb, Endrick mouth 21 Feb (WKR); N Arg, Taynuilt Jan (NGMcG), 2 Kentra Bay, Ardnamurchan, 7 Apr (SMG-R); Perth, Glen Artney 17 Mar (RMR); Angus, R Tarf Feb (GMC); Moray, Fochabers 25 Dec 1967-late Mar (RH); E Inv, L Garten 28 Mar-5 Apr (HB, RJF), L Morlich 7 Apr (SR); E Ross, Strathpeffer 14 Feb (HDS), 3 Garve/L Luichart 1 Mar (DBa), Dingwall throughout winter to 23 Mar (HDS), Achanalt 24 Mar (JAW), Contin 6 Apr (DCH); W Ross, Kinlochewe 2 Jan-end Mar (DBa), Plockton 20 Feb (JSu), Gairloch 25 Mar (ENH), Glen Torridon wintered to 9 Apr (JAW); SE Suth, 3 mls W of Dornoch 12 Jan, 17 Feb, 9 Mar (DMcD); N Suth, Tongue 11 Feb (RHD); Caith, Helshetter 31 Mar (JFa); Fair Isle 11-12 Apr, 24-25 Apr, 23 May (RHD); Shet, 2 Sumburgh 15 Apr (GDJ), Unst 8 June (per RJT).

Autumn (about 33): Shet, Unst 12 Oct (MS), Yell 13 Oct (RJT), Fetlar 23 Oct (TT); Fair Isle, Oct 3rd, 11th (5), 12th (2), 14th-15th, 16th-17th (another), Nov 6th (2), 17th-20th (RHD); Ork, Stenness 13 Oct (JSc), Hoy 16 Oct (per EB), N Ronaldsay 9th and 17 Oct (EJW); Aber, Forvie 5 Oct (NP), Meikle L 23 Oct (AD), Balmedie 23 Oct (ADKR), Aberdeen 17 Nov (DJ); N Kinc, Banchory 22 Oct (BS), Strachan 15 Nov, 5 Dec (NP); Angus, Invermark 24 Nov, Lintrathen Dec (GMC); Fife, Cleish Hills 19 Oct, 2 Nov (per TDHM); Isle of May 8-9 Oct (PK, DJN, BU); E Loth, Tynninghame 27 Oct (EMS); Ber, Grantshouse 3 Nov (JMS); Rox,

St Boswells 17 Nov (DRG); Dunb, Glen Fruin 23 Oct (JH); Dumf, Bridge of Ae 24 Sept (HO).

***Woodchat Shrike** *Lanius senator*. One Foula, Shet, 29-30 Apr, 5 May (JGH); ad Fair Isle 4-8 June (RHD); 1 Whalsay, Shet, 10 Sept (JHSi), subject to acceptance by Rarities Committee; imm Fair Isle 18 Sept (RHD).

***Red-backed Shrike** *Lanius cristatus*. Passage, singles unless stated, 5 May-13 June, 22 Aug-29 Sept. Spring: Shet, Unst 8 dates 11 May-8 June (2 on 29 May) (WCJ, MS, RJT, FJW), Whalsay 3 on 28 May (JHSi), Mainland 29 May, 31 May, 1 June (DC, DH, RJT), Fetlar 2 June (TJ-F); Fair Isle, record spring 10 May-13 June, peaks May 14th (3), 22nd (4), 23rd (8), 25th, 27th and 29th (7), June 2nd (4) (RHD); Ork, Stronsay 30 May, Sanday 1 June, 3 N Ronaldsay 1 June (EB, EJWi); SE Suth, Dornoch 30 May (DMcD); E Ross, Munloch 3 June (ACC); Aber, Rattray Head 11 June (MW); Isle of May 5-7 May (JP).

Autumn: Shet 10 Sept (JHSi); Fair Isle 22 Aug, 3-5 Sept (RHD); Ork, Stenness and Tankerness 14-15 Sept (EB, EJWi); W Ross, Gairloch 30 Aug (RAW), Torridon 23-29 Sept (JAW); Isle of May 26-29 Aug (GAP), 1 Sept (DCG).

Starling *Sturnus vulgaris*. Fewer than usual bred Fair Isle (RHD). Passage late Mar and Apr Fair Isle (RHD); influx E Fife 2-8 Nov (DWO).

Angus roost of about a million birds used for third winter running (GMC); enormous winter roost Dunscore, Dumf (JMcC, BST, JGY); 5000-10,000 at Gladhouse island roost, Midl, 29 June (DGA). Birds from winter roost at Elie, Fife, recovered in summer in Norway, Sweden and Finland (DWO).

***Rose-coloured Starling** *Sturnus roseus*. Ad trapped Fair Isle 23 May-1 June (judged an escape), imm 23-25 Aug (RHD); 1 Iona, N Arg, 9 July-2 Aug (JMcf, JDS, RALS, DEW).

***Hawfinch** *Coccothraustes coccothraustes*. No nests reported, but no reports from breeding areas in SE counties and Drumlanrig/Thornhill part of Dumf. Elsewhere singles: Kinmount, Dumf, 7 July (JGY); Saltoun Wood, E Loth, 12 June (HMa); Corstorphine Hill, Midl, 10th and 19 Feb (AMa); Doune, Perth, 27 May (DSB); Errol, Perth, mid July (JFi); Dunblane, Perth, 27 Oct (BT).

Greenfinch *Chloris chloris*. No reported changes in breeding status: ♀ building Altnaharra, N Suth, 2 June (EGH).

Isle of May, 50 on 2 Apr (DCG); Fair Isle, ♂ 19-21 Apr, small passage 11 Oct-9 Dec (RHD); Shet (now rare, though breeds Ork), 1 Fetlar 25 July (RJT), 1 Unst 15 Oct (MS).

Goldfinch *Carduelis carduelis*. Breeding numbers increased slightly E Fife (DWO); numbers good Midl (RWJS); nest Belhelvie, Aber, is only one known in area in recent years (NP).

Unusual numbers in N: Banff, 4 Aberlour 5 Apr, 2 on 10th (DB); Moray, 1 Elgin 19 Jan, 4 Kinloss 3 Feb (THJ); E Inv, 12 Longman 16 Jan (MJE, JMcG), 4 on 25 Feb (GC); E Ross, 1 Tore from 22 Mar (MKMcD-D); W Ross, 1 Shieldaig, Gairloch, 10 Mar (ENH); SE Suth, 3 Dornoch 3 Feb, 1 on 14 Dec (DMcD); Caith, 2 Thurso and 2 Lybster 19 Feb (DMS), 1 Reay 9 Apr (JG); O Heb, 3 N Uist 7 Feb (DGA, DJ, IN), 1 Stornoway 23 May (JF); Ork, 2 Mainland 30 Apr (EJWi), dozen N Ronaldsay late Apr (KGW); Fair Isle, 1 on 5-8 June (RHD); Shet, 2 Lerwick 28-29 May (DC), 2 Helendale 1 June (JWt), 1 Whalsay 4 June (JHSi), 1 Sumburgh 12 June (DC). Unusual numbers Apr, Isle of May, 15 days 1 Apr-2 May (8 on 2 Apr, 20 NW on 3rd) (DCG, NJG, JP), 2 on 28 May (JP); also 1 on 23-25 Oct (IFS).

Flocks S Scotland: S Arg, 20 Crarae 9 Mar (MJE); Midl, 40 Outerston 26 Oct (EHa); E Loth, 20 N Berwick 4 May (DA); Rox, 60 about Yetholm Sept after good season (RSB); Dumf, local dispersal by 25 Aug when 30-40 Castledykes (JGY).

Siskin *Carduelis spinus*. No reported changes in breeding status. At least 12 singing in territories Dumf (WM, HO); 2 prs Altnaharra, N Suth, in summer (EGH).

Flock 200 Newcastleton, Rox, 24 Mar (KB per JGY). Spring passage: Fair Isle, 1 on 14th and 19 Apr (RHD); Shet, 2 Unst 22 Apr (MS). Autumn, mainly 8-21 Sept, also mid Oct and mid Nov: Shet, 9 Out Skerries 11 Sept (RJT), 6 Bigton 15 Sept (DC); Fair Isle 8-21 Sept (19 on 12th, 25 on 17th), 4-26 Oct (14 on 11th) (RHD); Ork, 2 Toab 12 Sept, 3 Orphir 7 Oct (EJWi), 7 N Ronaldsay 1st wk Oct (EJW); Caith, Thurso 22 Oct (PMcM); Aber, 2 Rattray Head 16 Nov (NE), 2 Newburgh 17 Nov (ADKR); Perth, 6 Kingoodie 17 Nov (HBo); Kinross, mainly 21 Sept (6)-23 Oct (JHS); Fife Ness 9-15 Sept (25 on 12th-13th), 10 flew S 19 Oct (PGTB, DWO), also 10 Elie 12 Oct (DWO); Isle of May 10 Sept (5)-21 Oct (NJG, GLAP); Midl, 4 Roslin 4 Sept (ADKR).

Linnet *Carduelis cannabina*. Pr laid Isle of May (NJG); no other changes reported.

Beyond breeding areas: Fair Isle, 5 on 8 Jan, passage 16 Apr-8 June, 1 on 19 Nov (RHD); Shet, 1 Fetlar 3 June (RJT); O Heb, 1 Balmore and 1 Balranald, N Uist, 7 Feb (DGA, DJ, IN), 1 Stornoway 23 May (JF), 16 Nov (MFMM).

Twite *Carduelis flavirostris*. No reported changes in breeding status. Autumn/winter flocks: Fair Isle, 150 on 29 Aug, 117 on 20 Sept, most gone by mid Nov (RHD); O Heb, 1500 (including 2 flocks of 500) noted, without any special search, on stubble in N Uist in a single day in early Feb (DGA, DJ); Perth, where now very local, 18 Devil's Elbow 6 Aug (GMC); E Loth, 15 Aberlady 20 Dec, 17 on 24th (DJ); E Stir, up to 100 in winter Skinflats (MH); N Arg, 132 Seil Island 30 Sept, 250 on 5 Oct, fewer 18 Oct (MPMcM); Dumf, 50 Glencaple 25 Nov (JMcGr), increased to 250 by 6 Dec (when another 250 Kenneth Bank and 25 Caerlaverock), 500-550 in area 14-20 Dec, but only parties up to 25 by end of month (JGY).

Some evidence of poisoning by seed dressings Fair Isle (RHD).

Redpoll *Carduelis flammea*. Lesser Redpoll *C. f. disruptis* spreading into new plantations (a significant habitat elsewhere) E Fife (DWO). More in summer N Suth (Altnaharra, Borgie, L Hope, Strathnaver) than in previous 10 years (EGH); commoner W Ross (parties over 100 Gairloch) than in past 7 years (ENH).

Migrants: Shet, 1 Unst 17-24 Apr (RJT), 1 Foula 22-24 July (per RJT); Fair Isle, a few 25 Apr-11 May, 1 on 12 July, 2 on 22 July, a few 29 Sept-8 Nov (RHD); Isle of May, a few 4-24 May (JP), 9 on 30 Sept (DWO), 12 Lessers 22-23 Oct (IFS); O Heb, small flock 12 Mar (WAJC).

Mealy Redpolls *C. f. flammea*: 1 Isle of May on 23 May (MFMM); 2 Blackford Hil, Midl, 22 Dec (HEMD); and doubtless some of the northern records.

Greenland Redpoll *C. f. rostrata* trapped N Ronaldsay, Ork, 14 Oct (EJW).

***Arctic Redpoll** *Carduelis hornemanni*. Singles seen with the characteristics (of uncertain significance) of this bird: Whalsay, Shet, 19 Feb (JHSi) (5: 292); Mid Yell, Shet, 14-16 Oct (DC, ARM, RJT). The Rarities Committee no longer considers records of this debatable species unless the bird is handled.

***Serin** *Serinus canarius*. One Scalloway 17 Nov and probably a few days earlier, first for Shet (RD).

Bullfinch *Pyrrhula pyrrhula*. Breeding numbers, but not range, increased Dumf (JGY).

In the N: 1 Fair Isle 18 Jan (RHD); 1 Fetlar, Shet, 20 Apr (RJT).

Influx of obviously Northern birds *P. p. pyrrhula* from 9 Oct: Shet, unusually large influx from 9 Oct, parties in many places Oct-Nov, some well into Dec (RJT); Fair Isle, unusual numbers 9 Oct-24 Nov (1-3 on

24 dates) (RHD); Ork, 1 Kirkwall 20 Oct, 2 Binscarth 6 Nov (EJWi); Caith, 3 Wick 12 Oct (DMS, IW); Aber, ♂ Rattray Head 14 Oct (MW). A ♀ Fife Ness 6 Oct was also thought to be a Northern bird, but like most of the rest it was not caught (DWO).

***Scarlet Grosbeak** *Carpodacus erythrinus*. Spring: Ork, 1 N Ronaldsay 2 June (EJWi); Fair Isle, ♀ 25-27 May, ♀ 6 June (RHD); Shet, singing ♂ Fetlar 1-3 June (RJT, JWt). Autumn: Shet, 1 Out Skerries 11 Sept (WLNT, RJT), 2 Whalsay 14 Oct (JHSi); Fair Isle, Aug 29th (1), Sept 6th (1), 7th (3), 8th (2), 9th (1), 18th-20th (1), Oct 12th (1) (RHD). The Ork and Whalsay records are subject to acceptance by the Rarities Committee.

Crossbill *Loxia curvirostra*. No reported changes in status of Scottish residents. Winter breeding of presumed immigrants, which probably began Sept 1967, continued to May in Dumf, 17 nests found Forest of Ae (HO); a few birds also Cairn Edward Forest, Kirk, Feb-Mar (per ADW).

Small arrival July: Fair Isle, singles 6th, 12th, 15-24 July (RHD), but none Shet or Ork; E Inv, some immigrants Speyside from about mid July (DNW); Kirk, 20 L Mannoeh 17 July (RHM). Other possible immigrants: Aber, 2 Cruden Bay 4 Sept (NE), 1 Collieston 23 Oct (ADKR).

***Two-barred Crossbill** *Loxia leucoptera*. Forest of Ae, Dumf, 1 on 17 Feb, ♂ and ♀ 19th and 23 Feb; later details not received but last sighting reported 19 May (HO).

Chaffinch *Fringilla coelebs*. No reported changes in breeding status. A few wintered as far N as Fair Isle and Shet (RHD, RJT). Spring: Fair Isle, passage to 27 May (10 on 19 Apr, 6 on 16 May) (RHD); Shet, a few from 14 Apr and in May (RJT). A ♀ 8-30 July Fair Isle, passage 31 Aug (♀), 12 Sept-9 Nov (10) on 29 Sept, 25-35 on 11-13 Oct, 15 on 23-24 Oct) (RHD); a few parties Shet from 14 Oct (RJT); a few Ork in Oct (EB).

One ringed Isle of May 14 Oct 1966 recovered Norway 18 Apr 1968 (5: 263).

Brambling *Fringilla montifringilla*. N Suth, ♂ in full plumage 10 June in area of only recorded breeding (in 1920), and ♂ singing 11 June in another area of birchwoods (HOB, EGH); N Kinc, ♂ found injured Stonehaven 22 July showed no signs of captivity or of having been prevented from migrating by earlier injury (WBa).

Spring maxima: Dumf, at least 7 flocks over 100 Jan-Feb (JGY); Kirk, unusually numerous Jan, 300 Castle Douglas (WA); Rox, 300 Yetholm 2 Jan (RSB); Dunb, 100 Dumbarton 1-2 Jan, unusually many (DJL). Departure: last dates mid Apr in Peeb (ADKR), Fife (DWO), E Inv (HB, DNW); Isle of May 13 Apr-1 May (max. 12), 1 on 27 May (JP); Fair Isle 29 Mar-30 Apr, 10 May-8 June, especially 14-23 Apr (40 on 19th) (RHD); Shet, from 14 Apr (60 Fetlar 20 Apr) (RJT).

General pattern of autumn dates is given by Fair Isle, early birds 3-21 Aug (1-2), passage 6 Sept-22 Nov, especially 26 Sept-30 Oct, big peaks Oct 3rd (250), 11th-14th (up to 1300), 24th (200) (RHD); only odd birds elsewhere before 2nd wk Oct; Shet influx from about 9 Oct, reaching 600 on Fetlar (RJT); Ork peak 100-160 N Ronaldsay 10-12 Oct, 100 on 20th (EJW); E Inv, Spey passage from 10 Oct (DNW); Fife, 30 flew S at Fife Ness 19 Oct (DWO); Isle of May peak 190 on 10 Oct (BU). Winter maxima: up to 300 Portmore, Peeb, Nov-Dec (DGA, EMS, RWJS); 70 Muirkirk, Ayr, 10 Nov was unusually many (JMCL).

One ringed Isle of May 13 Oct 1962 recovered Belgium 11 Nov 1967 (5: 263).

Corn Bunting *Emberiza calandra*. Though widespread coastal breeder Dumf, has not been found breeding for 30 yrs in Upper Nithsdale, where some noted Sanquhar and Thornhill since 1963, but birds in territories probably bred both areas 1968 (WD, JFY, JGY); common low-

land breeder Wigt, but flocks 200 and 40-50 near Sandhead 3 Mar notable (DS, RTS, JGY); up to 4 singing Hoselaw L, Rox, in Mar were observer's first in area (RSB).

Passage: Fair Isle, 1 on 24 Apr, 1 on 24 Nov (RHD); Isle of May, 3 on 3 Sept (NJG).

Yellowhammer *Emberiza citrinella*. No reported changes in breeding status. Migrants: Shet, 1 Unst 30 Mar (RJT), 3 Whalsay 5 Oct (JHSi); Fair Isle, singles 22 days 15 Apr-6 June, 2-3 on 21st and 23-24 Apr, 1 on 26 Sept, up to six 11-17 Oct, one 6-17 Nov (RHD); Isle of May none (NJG); O Heb, ♂ Howmore, S Uist, 5 Feb (DGA, DJ, IN).

***Black-headed Bunting** *Emberiza melanocephala*. A ♂ trapped 17-26 Apr, considered an escape (RHD); ♂ Ardnave, Islay, 11 June (RHB, SG). There must be suspicion that birds of this species are escapes.

***Red-headed Bunting** *Emberiza bruniceps*. About 9 ♂♂ 21 Apr-10 July, presumably escapes: E Loth, Gullane 21 Apr (RL); W Ross, Anancaun, Kinlochewe, 25 June-5 July (DBa, JAW); I Heb, Rhum 26 Apr-6 May (or later) (PW); O Heb, N Uist 11 June (CHT); St Kilda, for some days prior to mid-July (per HEMD); Ork, Holm 10 May (MT-C); Fair Isle, singles 1 June-10 July, 10-12 June, 1st and 4 July (RHD). Note the distribution to N and W.

***Yellow-breasted Bunting** *Emberiza aureola*. One Fair Isle 13-18 Sept (RHD); 1 Isle of May 26 Aug (KP, GAP).

***Ortolan Bunting** *Emberiza hortulana*. Spring: Fair Isle, May 10th-14th (2), 21st (1) (RHD). Autumn: Fair Isle, Aug 25th (1), Sept 3rd-5th (1), 7th (another), 9th (another), 10th, 11th, 13th (1), 14th (2), 22nd-26th (1), 28th (1), Oct 5th (1) (RHD); Isle of May, Aug 28th (4), 29th (3), 30th (1) (KP, JP).

***Little Bunting** *Emberiza pusilla*. Singles Fair Isle 26-28 Sept, 11-14 Oct, 23-27 Oct (RHD).

Reed Bunting *Emberiza schoeniclus*. Three prs bred Inchkeith, Fife; *Birds of Scotland* gives no breeding records for Forth islands (EMS, RWJS).

Spring passage: St Kilda, where rare, 1 on 12 May (RT); Fair Isle, a few 24 Mar-30 Apr, 40 on 10 May, up to 20 until 14th, fewer to 30th, last on 5 June (RHD); Shet, considerable passage from 10 May (RJT). Autumn: Shet, small numbers 29 Sept-28 Oct (RJT); Fair Isle 24 Sept-30 Oct, mainly 6-24 Oct (20 on 6th, 10 on 23rd-24th), stragglers to 17 Nov (RHD).

***Lapland Bunting** *Calcarius lapponicus*. Records to 12 May and from 31 Aug: E Loth, 2 Aberlady 2 Jan (MAMcD), then Nov 23rd (1), Dec 8th (17), 20th (4), 22nd (6), 27th (13) (MJE, DJ, KAMcK); Isle of May, 1 on 2 Oct (ADKR); W Stir, ♂ in huge finch flock Drymen 26 Jan (TMC); Aber, 8 Bridge of Don 7 Jan, 1 Strathbeg 17 Nov (NE, ADKR); E Inv, ♂ with Twites at 1500 ft near Kingussie 23 Apr, first record (DNW); O Heb, 1 Gallan Head 31 Aug (AFJ); Ork, a few N Ronaldsay from 21 Sept (3 on 11 Oct) (EJW); Fair Isle, ♂ 1 Apr, ♂ 7 May, small numbers 31 Aug-22 Sept, 1-24 Oct (6 on 7 Sept and 3 Oct, 4 on 11 Oct) (RHD); Shet, 1 Out Skerries 2 May, 2 on 12th (RJT), 1 Mainland 22 Sept (DC, RJT), 2 Whalsay 11 Oct (JHSi), 1 Unst 28-29 Oct (MS).

Snow Bunting *Plectrophenax nivalis*. Cairngorms: ♀ with 2 fledglings 2nd wk July in corrie where pr seen previous wk; 3 in early June and singles to July in another corrie where nesting not known (DN-T, DNW); 5 ♂♂ (4 singing) elsewhere 16 June (VCW-E). W Ross: prs at 2 sites Beinn Eighe Reserve 22 June where ♂♂ singing earlier, and 2 birds thought to be juvs seen at one site 8 July (DBa).

Flocks in early months: 250 Selkirk 2 Jan (ADKR); Renf, where rare, 25 Langbank 2 Jan (GTW); E Loth, maximum only 40, Aberlady 2 Mar (KSMcG); Fife, more than usual, 350 Crail 2 Jan (JARG), 80 Anstruther

3 Jan, 120 Pittenweem 7 Jan, 100 Largoward 25 Feb (DWO); Ork, 2000 L of Skail 10 Mar (EB). Passage: odd birds N at Fife Ness 9-23 Mar (DWO); Isle of May, only 1 bird 16 Apr (JP); Fair Isle, peaks 90 on 26 Mar and 8 Apr, last 22 May (RHD); Shet, last 16 May Out Skerries, 18 May Unst (RJT).

Autumn from mid Sept: Shet, 1 Fetlar 15 Sept, 50 on 17th, usual autumn flocks up to 200 (RJT); Fair Isle, 13 on 13 Sept, peaks 80-100 on 14th, 16th, 22nd, 150 on 27 Sept, numbers not high in Oct (max. 120), 200 on 17 Nov, 250 on 28th (RHD); other first dates 15-22 Sept in Ork (EB), Aber (NE, MW), Fife (DWO), Isle of May (BL). Fewer than usual Caith to Dec (DMS); 300 Crail, Fife, from 23 Dec (JARG).

House Sparrow *Passer domesticus*. No reported changes in breeding status. Two on Isle of May on 13-14 May (AMcD).

Tree Sparrow *Passer montanus*. Continues increase and slow spread N in Dumf, breeding in two areas at Thornhill (JMx, JFY); bred Luce Bay, Wigt (RCD); still increasing Midl, as in Moorfoots, where 30 Gladhouse 11 Aug, 60 on 8 Sept, 40 on 30 Nov (DGA, EMS, RWJS); now common Morton Lochs area, Tentsmuir, Fife, and breeding (cf. 2: 159) (JD, DWO, RWS); singles caught near Dollar 7 Jan and 31 Dec (cf. *Edin. Bird Bull.* 3: 33), occupied nest above Alva 27 May, first breeding Clack (TDHM, AT); 15 Cape Wrath Hotel, Suth, 11 Feb (RHD), 21 nearby 16 Sept (NE).

In Ork, where small colony on Eday, 4 seen Auskerry 29 May (EJWi), 3 N Ronaldsay 20 Sept (EJW); Fair Isle, 1 on 30 May, up to 7 on 2-13 June, 1 on 2 Oct, 2 on 4-5 Oct (RHD); St Kilda, 1 on 17 July (HEMD, MM); Isle of May, up to 16 on 23-30 May (MFMM, JP), 4 on 23 Oct, 3 on 24th, only second autumn record there in 30 yrs, though autumn passage used to be larger than spring (IFS).

Earlier records - 1966, 1967

This section will inevitably be needed for the few records that are held over from year to year, but otherwise it will be used only for those that seem of unusual interest. Ringing recoveries, which are often reported late, will usually be given in the main list.

Manx Shearwater *Procellaria puffinus*. Up to 12 flying S at Stoer Pt 6 June 1967, first for W Suth (ARB, RTB).

Little Owl *Athene noctua*. One near Elsrickle, Biggar, 14 July 1967, first for Lan (HD).

Redwing *Turdus musicus*. Two with juv NW Ross 8 June 1967, different from breeding localities given at 5: 32 (ARB, RTB).

Grasshopper Warbler *Locustella naevia*. Singing Carron, Moray, summer 1966, few records for area (SR).

Chiffchaff *Phylloscopus collybita*. Singing ♂ Tarryblack Wood, Banff, mid June 1966, few records for area (per RH).

Review

Birds of the Atlantic Islands. Vol. 4. History of the Birds of the Cape Verde Islands. By David A. Bannerman and W. Mary Bannerman. Oliver & Boyd, Edinburgh, 1968. Pp. xxxi + 458; 20 colour and 31 monochrome plates; maps and numerous text-figures. £6.6/-.

This book concludes the remarkable work on the ornithology of the Atlantic Islands, launched by Dr Bannerman with the volume on the Canary Islands, and continued in those on the Maderian Islands and the Azores, in both of which the authorship was shared, as in the present volume, by Dr Bannerman and his wife, W. Mary Bannerman. A *History of the Birds of the Canary Islands and of the Salvages* appeared in 1963, the same year in which the last volume of Dr Bannerman's monumental *Birds of the British Isles* was published. The production of this final sumptuous book on the Cape Verde Islands after so short a lapse of time is a tribute to the scholarship, industry and determination of the authors and to the skill and application of illustrators and publisher. The name of the senior author has of course long been associated with the study of the birds of this island group—the endemic Buzzard was named *Buteo buteo bannermani* in 1919—but, characteristically, he and his wife set forth from Scotland in 1966 to make an arduous field trip to gain first-hand impressions of the living birds in their environment. Equally characteristically, they have enriched their book with impressions of far more than the birds. Readers will gain a vivid picture of human life in the islands and of the extraordinary contrast between the arid desolation of much of the landscape and the prosperous irrigated plantations, whose produce includes fine bananas and coffee, maize, sugar and tomatoes. Rain may not fall for five years at a stretch and "water, or rather the lack of it, is the greatest curse which the Cape Verde islanders have to endure."

The first part of the book includes a detailed historical survey of past ornithological studies, a short discussion of the origins of the fauna in general, a concise account of the butterflies by N. D. Ripley, and a contribution on the vegetation. The earliest references to birds by fifteenth century explorers are tantalisingly few and obscure; Dr Bannerman has perforce to leave unsolved the mystery of the alleged pigeons which were so tame and numerous that Cadamosta's crew in 1456 "seized them en masse." The most eminent nineteenth century visitor was Charles Darwin, on the Voyage of the Beagle, but the foundations of modern knowledge of the birds were laid by several later visitors, notably Capt. Boyd Alexander in 1897. A curious episode involves a certain J. G. Keulemans who, Dr Bannerman observes, can hardly have been other than the man who later became celebrated as a bird artist. Keulemans appears in the present book as a young taxidermist who accompanied Dr Dohrn to the Cape Verdes in 1865 and incurred that gentleman's displeasure by preceding him in print with an account of their finds. Recently, in 1951, Dr W. R. P. Bourne made an enterprising solo expedition, discovering a colony of a pale insular form of Purple Herons, though the specimen which he obtained was regarded at the British Museum as a bleached example of the typical race, until the intrepid Abbé de Naurois rediscovered the colony in 1963 and named the birds *bournei*. Throughout the book full acknowledgment is paid to the Abbé's recent outstanding researches on the birds of the Cape Verde Islands.

In discussing the origins of the avifauna Dr Bannerman pays tribute to Dr Robert Cushman Murphy for arguing convincingly that colonisation of the islands was far more from the Palaeartic than from the

Ethiopian region, so presenting a fascinating contrast with the butterflies, which are almost entirely African.

Before proceeding to detailed accounts of the birds under species or subspecies, the Bannermans each contribute a section on their own expedition. Both accounts are delightfully personal, Dr Bannerman's more measured descriptions being nicely balanced by the vivid and racy notes from his wife's diary. I particularly enjoyed Dr Bannerman's account of their arrival at the local inn at Ponta do Sol where, being the only guests and the staff having gone home, they were locked in at night, in company with "a family of enormous red cockroaches shaped like torpedoes" and "the most gigantic spiders". In spite of an abscess in his eye, caused by the all-pervading dust and high winds, the veteran ornithologist observes that, "a right and left at those speedy cockroaches before our lights were extinguished reassured me that there was not much wrong with my vision".

Some 300 pages of the book are allotted to an "annotated list of the birds and field notes," a compilation of the utmost thoroughness which never makes dull reading. Here, perhaps inevitably, there is often some repetition of information given in earlier sections of the book. In his account of the Greater Flamingo *Phoenicopterus ruber roseus* the author makes it clear that breeding has at no time been conclusively proved, so it is surprising, on turning to page 113, to find him saying, "It is on Sal and Boa Vista that the rosy flamingo still maintains a breeding colony". The total list of recorded species is only 105, of which 43 breed or have bred. The most remarkable of the birds peculiar to the Cape Verdes are the Razo Lark, confined to the island of Razo, and Dohrn's Cane Warbler. Traditionally, great colonies of Brown Boobies, Lowe's Frigate Birds and Red-billed Tropic Birds were a feature of the islands but, except on the most inaccessible cliffs, seabird colonies have been decimated in the past hundred years or so by the local fishermen. Birds of prey, too, have declined catastrophically through persecution—boys take the eggs and young of Ospreys and Kestrels for food. The insular form of Buzzard is close to extinction. It might at first seem surprising that the Brown-backed Raven is among the least molested birds, but it still holds a respected position as a scavenger. Unfortunately, in recent years, the beautiful White-headed Kingfisher—not a fish-eating species—has been increasingly destroyed by children. The publication of this book, in which the authors stress the urgent need for conservation measures, supported by education in the schools, must surely help the efforts already being made by the Abbé de Naurois to save the birds most in danger. The Bannermans wisely stress that, as far as the seabirds are concerned, full protection cannot be sought where protein food is manifestly in short supply for the people.

In so large a book there is a commendable absence of printing errors but on page 196 the reference to the photograph of the nest of Lowe's Frigate Bird should be to plate 7, not plate 8.

No review of this book would be complete without a discussion of the outstanding plates. Among the photographs the coloured frontispiece showing a woman carrying a live turkey on her head and a baby on her hips is a delight. So is the coloured plate of butterflies. The reproduction of the paintings by David M. Reid-Henry and P. A. Clancey achieves a very high standard. Their totally different styles keep slightly uneasy company in the same book. Those by David Henry, which are the larger number, never fall short of his own exacting standards of good drawing, meticulous detail and superb technical execution. In the striking plate of the White-headed Kingfisher and in that of the Cane Warbler he demonstrates the value of a strong sense of design in the

difficult handling of foliage and branches. The picture of the Cape Verde Islands Peregrine is among his very highest achievements. The group of Herons contains some beautiful bird painting, but to my mind the absence of luminosity in the cast shadows and the regularity of the cracks in the parched ground do not convey an authentic impression of sunlight and glare. P. A. Clancey's illustrations are very ambitious and highly coloured. I like best his Quail and Guinea-fowl among convincing vegetation. His work is least successful when he is faced with the exacting problems of painting flying birds in relation to a landscape or seascape setting. His text-drawings are technically very accomplished. The richness of C. F. Tunnicliffe's two tailpieces will catch the eye of many who only glance through the book. Taken as a whole, the illustrations greatly enhance this important work.

A. DONALD WATSON.

Request for Information

The Birds of Estuaries Enquiry. In view of the number of development proposals for estuarine areas throughout Great Britain and Ireland and the lack of reliable quantitative and comparable information on the numbers of estuary birds, a national survey of our estuaries and their bird life, to start in August 1969, is being put into operation by the joint efforts of the BTO, RSPB, IWRB Wader Working Group, Nature Conservancy and other interested bodies. It is envisaged that this enquiry will form part of an extensive ecological study of estuarine areas.

The role of ornithologists will be to provide an assessment of the waders, wildfowl and gulls, with additional information, where possible, on feeding and roosting sites. While emphasis is on the sparsely covered wader group, the Wildfowl Trust has welcomed complementary counts of wildfowl in the estuarine habitat. Gulls are often difficult to count, but ecologically important, and observers will be asked to place at least a frequency rating on the counting card. It should be stressed that this enquiry is essentially a non-breeding-season project and will not interfere with other current BTO enquiries. Monthly counts between August and April coinciding with the optimum local tidal conditions are required where the observer force allows. Where this is not possible, counts are requested as a priority in August and December.

Philip Burton (IWRB Wader Working Group) is combining the Group's existing godwit and other wader studies with the present survey and will organise the survey jointly with David Glue (BTO Populations Section), under the guidance of an Advisory Committee. Coverage for the Scottish estuaries is patchy at the moment and ornithologists who would like to help are asked to contact David E. Glue, BTO, Beech Grove, Tring, Herts, who will provide further details. It should be stressed that coverage of as many estuaries as possible is envisaged, whatever the size and considered importance of the tideland. Your full support for this important and long awaited enquiry is urgently required.

The Scottish Ornithologists' Club

ANNUAL CONFERENCE

The 22nd Annual Conference and 32nd Annual General Meeting will be held in the Hotel Dunblane Hydro, Perthshire, on 24th-26th October 1969. Bookings should be made direct with the hotels. The full programme will be given in the next issue of *Scottish Birds*. The registration fee will be 10/-, and the Annual Dinner 30/- for those not staying in the Hotel Dunblane Hydro (both to be paid on arrival).

Hotels in Dunblane

Hotel Dunblane Hydro (tel. 2551). Special Conference charge £8.0.0d, inclusive of 10% service charge, bed and all meals (except tea on Saturday afternoon) from Friday dinner to Sunday lunch, after-meal coffee, and the Annual Dinner (with wine or soft drinks). For less than a full day, bed and breakfast is 42/-, lunch 12/6 and dinner 18/6, all with additional 10% service charge. Rooms with private bathroom have a supplementary charge of 10/- per person per day.

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Prices, except for the Conference Hotel, are provisional and should be confirmed.

BRANCH MEETINGS 1969/70

Will Members please note that the dates of the first Meetings of Branches for next winter will be as follows :

September 22nd	Glasgow
23rd	Edinburgh
24th	Ayr, Dumfries and St Andrews
25th	Dundee and Stirling
29th	Aberdeen
30th	Inverness

St Andrews please note that there may be a change of location. Please contact your Branch Secretary before the Meeting for confirmation.

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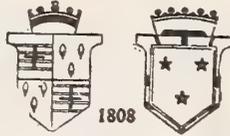
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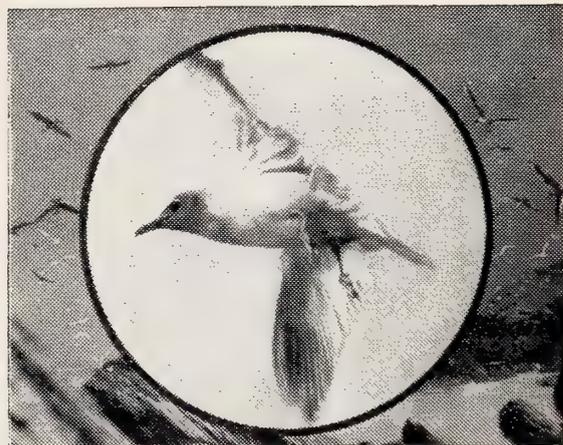
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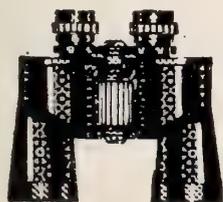
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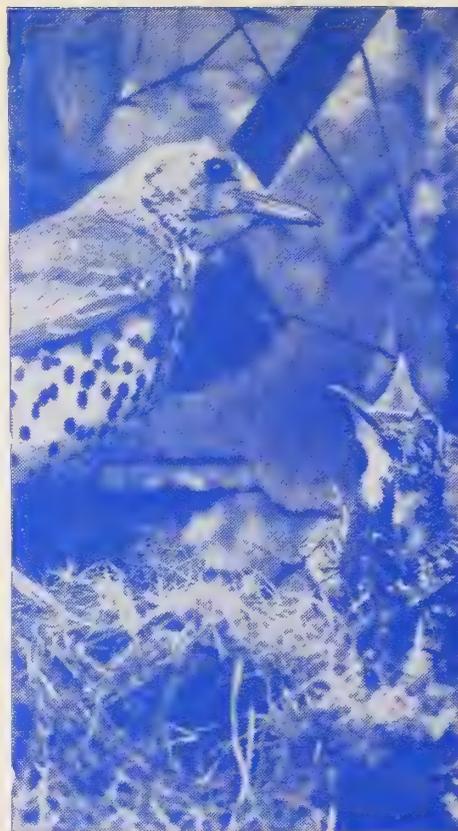
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Edited by A. T. Macmillan, 12 Abinger Gardens, Edinburgh, EH12 6DE

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Vol. 5 No. 7

Autumn 1969

Edited by A. T. Macmillan, assisted by D. G. Andrew and M. J. Everett

Editorial

New Fair Isle Bird Observatory. Through the generous support of the Highlands and Islands Development Board, the National Trust for Scotland's Wildlife Fund, the Carnegie UK Trust, the Dulverton Trust, the Pilgrim Trust and many private donors it has been possible to go ahead this year with the new bird observatory and hostel building on Fair Isle, in spite of the usual rising costs, which have increased the total needed for building and furnishing to £51,000.

Building from the ground is usually quicker than altering an existing building; even so, progress, considering the remoteness of the site, has been impressive. By the time this appears in print the new observatory, providing for up to 24 visitors in single and double rooms and dormitories, and for the warden and his family and staff to live on the premises, and with bird-ringing room, laboratory, darkroom and library included, should be virtually complete.

The objects of the observatory—scientific studies of birds and their migrations, coupled with training of ornithologists in the techniques of trapping, ringing, laboratory examination and general field observation, and the provision of a comfortable base for naturalists and island-lovers—are now assured for the future. The new buildings, opening 21 years after the observatory was founded in 1948, rank as a major Scottish contribution to European Conservation Year 1970. They also represent a substantial vote of confidence in the future of Fair Isle itself, for it cannot be said too often that the viability of the island community and the viability of the bird observatory are very much bound together; neither would find it easy to exist on its own.

In case anyone who has not yet contributed thinks it is too late to help, it may be said that a lot of money is still needed to meet the annual interest charges and to pay off the loan from the Highlands and Islands Development Board. Donations will be gratefully received at 21 Regent Terrace, Edinburgh, EH7 5BT, or for a guinea you can be a Friend of Fair Isle and have copies of the annual reports. It is aston-

ishing how many people are not yet Friends of Fair Isle, and your support really is needed. The most important bird observatory in Britain is Scottish and it is up to us to justify the faith of those who have financed the new buildings by seeing that it is soundly financed for the future. A steady annual income from Friends of Fair Isle (preferably covenanted) is the most reassuring form of support, for it shows that people not only believe in the project but are prepared to pay for it.

RSPB Appeal. We seem so often to be commending appeals for money that it is pleasant to report success, even when coupled with the rider that more is still needed. The RSPB Reserves Appeal reached its target of £100,000 in the spring. Vane Farm on Loch Leven is being developed as an educational centre. A Welsh stronghold of the Kite (now open to visitors) has been bought, and also part of the Ouse Washes where the Black-tailed Godwit (34 pairs in 1968) has bred since 1952 and the Ruff (4-5 nests in 1968) since 1966; two pairs of Black Terns also bred in the area in 1966. Anyone who rejoices in seeing such rare breeding birds in Britain, or who believes that they and their fast vanishing habitats ought to be looked after, has a duty to support this work. If you are not already a member of the RSPB, the largest popular voice for natural history in Britain with approaching 50,000 members, it may be time you asked yourself why. As Dr I. D. Pennie once told us, someone has to pay if we want to keep our birds in the face of competition from other land-users. Positive action in the creation and management of suitable habitat can achieve results, as the RSPB has shown: mere negative opposition to 'development' by other interests is unlikely to do so. Write to 17 Regent Terrace, Edinburgh, EH7 5BN, for more information.

Sound recording competition. Congratulations to Magnus Sinclair of Unst on winning the class for recordings of individual species of birds in the British Wildlife Sound Recording Competition sponsored by the makers of Scotch magnetic tape and the Wildlife Sound Recording Society. His winning entry was an early morning recording of a family of Curlews (*Brit. Birds* 62: 163).

Current literature. Recent material of Scottish interest includes:

Fair Isle Bird Observatory Report for 1968. R. H. Dennis, 1969. 68 pp. Better than ever.

Effects of reafforestation on the birds of Rhum, Scotland.

L. A. Batten & D. E. Pomeroy, 1969. *Bird Study* 16: 13-16.

The food of Cormorants and Shags in Scottish estuaries and

- coastal waters. *Marine Research* 1969, No. 1. B. B. Rae, 1969. See also D. H. Mills in *Scot. Birds* 5: 264-276.
- The census of heronries, 1962-63. J. Stafford, 1969. *Bird Study* 16: 83-88. Scottish data meagre.
- Differences in the downy young of Red and Willow Grouse and Ptarmigan. A. Watson, R. Parr & H. G. Lumsden, 1969. *Brit. Birds* 62: 150-153, pl. 27. With Scottish criteria.
- Nesting activities and brood movements of Black Grouse in Scotland. R. J. Robel, 1969. *Ibis* 111: 395-399. Studied by radio in Kincardineshire.
- The winter feeding ecology of the Redshank. J. D. Goss-Custard, 1969. *Ibis* 111: 338-356. Aberdeenshire study.
- Spring migration of the Common Gull in Britain and Ireland. J. D. R. Vernon, 1969. *Bird Study* 16: 101-107.
- Scarce migrants in Britain and Ireland during 1958-67. Part 1. Introduction, Hoopoe, Golden Oriole and Tawny Pipit. J. T. R. Sharrock, 1969. *Brit. Birds* 62: 169-189. Excellent analysis including Scotland.
- Roosts and roosting habits of the Dipper. R. Hewson, 1969. *Bird Study* 16: 89-100. From Banff.
- Some vital statistics of British Mistle Thrushes. D. W. Snow, 1969. *Bird Study* 16: 34-44. Scottish birds are particularly migratory.
- Grey Wagtail passage and population fluctuations in 1956-67. J. T. R. Sharrock, 1969. *Bird Study* 16: 17-34. With Scottish ringing data.
- Cretzschmar's Bunting on Fair Isle: new to Britain and Ireland. R. H. Dennis, 1969. *Brit. Birds* 62: 144-148, pl. 26. Present 10th-20th June 1967.

Scottish Cormorant colonies

R. W. J. SMITH

The distribution of Cormorant colonies throughout Scotland has not previously been considered in detail. Baxter & Rintoul (1953) give an account of the published Scottish records with up-to-date comment on some colonies. Many of the breeding records they quote are old ones and they say, of Cormorant and Shag, "it is surprisingly difficult to get exact information as to their distribution." Numbers and breeding sites in Shetland have been detailed by Venables & Venables (1955); the colonies and population of Orkney Cormorants are discussed in a recent paper by Balfour, Anderson & Dunnet (1967); and Mills (1965) has listed some of the Scottish breeding colonies.



FIG. 1. Distribution and size of Cormorant colonies in Scotland. Symbols: circle 1-20 nests, square 21-50 nests, triangle 51-125 nests, star 200-450 nests; crosses mark colonies used since 1920 but now sporadic or extinct.

Distribution

Some 3000 pairs of Cormorants nest in Scotland. Fig. 1 maps the distribution of breeding sites and emphasises the dependence of the species on sheltered waters. The Scottish population may, for convenience, be divided into seven regional areas. Of the three island groups: Orkney has 600 pairs; Shetland with less shelter holds 400 pairs; and in the more exposed Outer Hebrides the number is only 150 pairs. In the four Scottish mainland regions: 800 pairs are concentrated within 60 miles to the north of the Sutors of Cromarty; the recently established Forth colony has 240 pairs (and is increasing every year); there are 600 pairs scattered along 50 miles of the Solway coast; and in the northwest a scattering of small colonies, perhaps totalling 100-150 pairs, is based on the more sheltered inlets.

Size of colonies

The term 'colony' is one which has various concepts (see *e.g.* Coulson 1963). As considered here it means any group, or groups, of birds which breed within a restricted area. This may be one island or an island group, one cliff-face or a several-mile stretch of cliff. In some instances the division into 'colonies' is an arbitrary one.

The Ord of Caithness, with 450 pairs, is the biggest colony in Scotland—and in the British Isles. This figure does not include some 20 nests at Berriedale, about 1½ miles north of the two-mile stretch of the Ord breeding cliff, which may well be an integral part of the larger breeding group. Most Scottish Cormorants nest in big colonies, the seven largest holding over 1900 pairs, about two-thirds of the total. These colonies, all of 200 or more pairs, are, taking the largest first, Ord of Caithness, Mochrum, Sutors of Cromarty, Muckle Roe, Lamb, Holm of Boray and Taing Skerry, and Calf of Eday. Solitary nests are rather uncommon and few pairs breed regularly in this way.

Table 1. Size (number of nests) and site of colonies

	1-20	21-50	51-125	200-450	Total
Mainland cliff	8	1	1½	3½	14
Small island	9	12	2½	3½	27
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	17	13	4	7	41

Note 'Mainland cliff' includes cliffs on large islands, and 'small island' includes steel erections.

Site

The Cormorant is catholic in the choice of a breeding site. Two important factors are the proximity of water, and

relative freedom from disturbance. There is possibly a preference for small islands in sheltered bays but, in the absence of these, Cormorants will nest on high mainland cliffs, on freshwater islets, or on trees. There are several old records of tree-nesting colonies in Scotland, though these have all been shot out (Baxter & Rintoul 1953). Of the several recorded freshwater nesting colonies only a small one in North Uist and a large one at Mochrum survive. In the Solway, two steel erections standing in shallow water have been colonised.

The height above water level at which Cormorants will nest varies from practically zero to 450 ft. The latter (at Berriedale Ness) is exceptional and most sites are below 150 ft. At Mochrum some of the nests are at the water's edge, with the eggs only some six inches above water level. This is only possible on a freshwater loch, but, even so, some of the nests must be swamped in rough weather.

In an established and undisturbed colony birds nest, if possible, in close-packed groups. At the Ord of Caithness in 1967 there were about 15 such tight groupings over a 2-mile stretch of coast. These compact groups have a generally white-washed appearance that makes them as obvious from a distance as a Kittiwake or Gannet colony. In the most dense part of the colony at Mochrum in 1967 the nests were spaced at about 3 ft centres. On a cliff site the birds usually nest on an open area, such as a rock spine or broad ledge, which makes them easily visible to the human observer. Nests are very seldom if ever under an overhang, a site much favoured by Shags. When both these species are breeding on the same cliff the Cormorants usually nest at a higher level than the Shags.

Cormorant colonies may move between two or more regular sites, as in the Summer Isles (Darling 1940) or in Orkney (Balfour, Anderson & Dunnet 1967). The latter paper also mentions local shifts of at least part of the colony. Such movements of a few yards are not spectacular but are probably more usual than a movement of several miles. The concentration of nests on the Lamb obviously changes from year to year, and this is even more noticeable at the Ord of Caithness, where different parts of the cliff are used in successive years.

Status

Any comment on status must necessarily be generalised. There are too few past counts available for comparison with recent ones.

On the Lamb there has been a spectacular rise in numbers

since the first breeding in 1957. There was an earlier increase in the Farnes population and it is probable that the Forth birds are derived from there. After the initial striking rises, which must have represented fresh arrivals, the rate of increase has settled in recent years at about 10% per annum.

There has almost certainly been an increase in the north-east region since Harvie-Brown's day. The "considerable numbers" on Dunnet Head have gone but more than 500 pairs now breed between there and the long-established North and South Sutors colony. At the North Sutor, where shooting has stopped along with the bounty, there was a sharp increase in numbers between 1966 and 1967. The situation at the South Sutor in 1966 is not known, however, and some of this increase may merely represent a shift from there.

Some of the colonies in the Solway have long been persecuted by fishing interests. Despite this, breeding numbers are high, although it is impossible to know whether they are anywhere near the optimum level. There is little evidence to indicate whether there has been any significant change in the total breeding population over the past 100 years. At Mochrum, where odd counts have been made over 60 years, Stuart (1948) gives the yearly average of breeding birds as 200-220 pairs. Recently there have been 300 or more pairs, an increase of some 50% in this colony.

The northwest region is the only one where there has been a definite decrease in breeding numbers. There is active antagonism from some of the salmon fishing interests, but this may not be the only factor involved in the decline. The Summer Isles colony of about 100 pairs has apparently practically disappeared in the last 20 years. The birds at Treshnish Point have gone—although they may yet be found in Ardnamurchan. In the Badcalls there has been a big decrease since Harvie-Brown saw about 160 pairs there in 1903. This area is the one most difficult to cover, so it is possible that there may be uncharted colonies to redress the balance.

In Shetland Venables & Venables (1955) say that "this species is now considerably less common [than] in the 1880s and 1890s." Cormorants were apparently much more widely distributed in those days, but there is little numerical data for comparison with present numbers. The contraction in the breeding range from the more exposed islands may have involved a drastic fall in breeding numbers but, alternatively, it is possible that there has been a corresponding increase at colonies on the Mainland of Shetland, and in the last decade there may have been a slight increase (R. J. Tulloch).

Numbers in Orkney have fluctuated fairly closely around

600 pairs in recent years (Balfour, Anderson & Dunnet 1967) but very little is known of the situation existing in the past.

In the Outer Hebrides the available figures suggest that numbers are increasing. However this increase is due entirely to one rapidly expanding colony. Few data are available for the remainder of the region.

Disturbance

It is difficult to assess the effects of human persecution and disturbance. These were very severe on the east coast of Britain, where all species of seabirds suffered from egg collecting and from sportsmen (Coulson 1953). Cormorant breeding numbers became very low in the Forth/Farnes sector, and the easing of repression has permitted a spectacular and continuing recovery there. Persecution was probably never so bad in the other Scottish regions, whether because colonies were not so accessible or because the human population in the area was more sparse. There has certainly been an overall increase in the Scottish breeding population in recent years, but it has been most noticeable on the east mainland coast. Whether the decrease on the west coast is due to human activities or otherwise is unknown.

Disturbance may lead to the colonisation of new sites. When one approaches the Lamb most of the adult Cormorants fly off, and any exposed eggs are heavily predated by Herring Gulls. In 1966 no young at all were reared, probably because of such untimely disturbance, and in mid July a number of adults nested on neighbouring Craigleith. It is most likely that these were failed breeders from the Lamb. On the Farnes the fishermen often land to collect Herring Gulls' eggs, and many Cormorant eggs are lost to the gulls in the process. It is possible that failed breeding there due to this and other causes could have led to the initial colonisation of the Lamb.

Counting

On the Lamb some Cormorants start laying at the beginning of May, while others (presumably young birds) do not lay until after mid June. Our experience suggests that the period 10th-15th June gives the most satisfactory count on this island. After this date many of the young birds are big enough to leave the nest and 'run' in groups, confusing the issue. Earlier visits leave too many eggs at risk to the gulls. Counts include not only nests with eggs and young but also all empty nests, as these are probably failed or late breeders. Partly built nests are noted but not included in the totals. The margin of error involved is unknown. A later visit tends to produce a lower count. At the Ord of Caithness

in 1967 D. M. Stark found 451 nests in June, while we had only 415 on 13th July, a decrease of some 8%. This factor may be taken into account when considering the total breeding population in Scotland, though it is probably unsafe to attach too much weight to differences between counts made by different observers. The most recent counts of existing colonies are summarised in table 2. There may well be several small colonies (up to about 20 nests) which have not been recorded, but it is unlikely that many larger ones have been missed.

Table 2. Counts of nests at Scottish Cormorant colonies

Scottish mainland and Hebrides	
Counted in June (1966, 1967, 1968)	1306
Counted in July (1966, 1967, 1968)	471
Counted before 1966	105
Orkney	600
Shetland	400
	<hr/>
	2882

Note No estimate included for Bulgach Island (50 pairs in 1948)

List of colonies

The main purpose of this paper is to give an up-to-date account of Scottish Cormorant colonies. In some of the old records there has been confusion between Cormorant and Shag, and only those colonies that have been occupied during the past 50 years are considered here. Records of other old colonies will be found in Baxter & Rintoul (1953).

Between 1964 and 1967 my wife and I counted many of the mainland colonies. We did not search indiscriminately for sites but were guided by the published records and the unpublished knowledge of others. Some reported sites we surveyed with negative results. These included the area near the Mull of Kintyre lighthouse, Furadh Mor east of Rudh Re, and the islands in Loch Laxford. Dr I. D. Pennie suspected that birds might breed occasionally on Glas Leacon and Garbh Eilean east of Cape Wrath but this has never been proved and we found none in July 1966. This area is now used regularly as a naval shelling target.

The colonies are listed in geographical order. The most recent count or estimate of nests is given immediately after the name of each colony. These figures are the ones used in compiling the map and tables.

KIRKCUDBRIGHTSHIRE

'Dookers Bing', Port o' Warren (13). Reported breeding here in 1902 "after being deserted during the breeding season for over a quarter of a century"; this was on the "mass of rock that lies against the shore"

(Baxter & Rintoul 1953). On 23rd May 1964 we found a single bird on this main mass of red sandstone but no sign of breeding. Further west there were 2 nests on a broad ledge of a steep 40 ft cliff. This colony was reported locally as being shot regularly with the encouragement of, and cartridges supplied by, the local river board. On 24th June 1967 there were 13 or 14 nests, several with well grown young.

Balcary Point and Hestan Island (0). "The Rev. E. T. Vernon tells us that there is a very large Cormorant colony about Balcary Point" (Baxter & Rintoul 1953). By 3rd June 1956 Cormorants "had deserted the cliffs at Balcary... in favour of the conglomerate cliffs of Orroland" where some 200 birds were established on 15th April that year (Blezard 1956). At Hestan Island, about a mile NE of Balcary Point, 4 pairs bred in 1962, the first and only breeding record (AAT). They were reported to have bred at Balcary Point that same year, but there was none in 1963 (WUF) and probably none in subsequent years. This colony was regularly disturbed.

Cliffs at Orroland (70). This is probably the place of retreat for the much persecuted Balcary Point colony. The first record appears to be that of Blezard (1956), quoted above, who saw about 200 birds (presumably about 100 pairs) in April 1956. The 100 ft cliff turns inland and ends at this point and is a ragged steep, conglomerate rock with broad ledges and a lot of vegetation. We found 70 nests on 24th May 1964 and a similar number on 24th June 1967. The nests were 40 ft-90 ft above the water. There is apparently little disturbance here.

Meikle Ross (12). "Cormorants nested on Little Ross in 1833 and in 1920 Begg refers to the colonies of Cormorants there" (Baxter & Rintoul 1953). Mr Poland, who was the official boatman to the lighthouse, informs me that in his experience they never did breed on Little Ross Island but only on the Big Ross cliffs. They were not nesting on Little Ross in 1967 (JGY). On 24th May 1964 there were 18 adults, but only 7 nests, near the western end of the Meikle Ross cliffs, where the rocks are less steep. They were obviously much disturbed, with eggs seen in only one nest, and several large stones thrown into others. In 1967 entry to the area was being discouraged and there was a bull running in the fields. On 24th June we found 11 nests, 6 at the original site and 5 on small niches in the vertical face of the steep cliff. In 1968 there were 12 nests (RHM).

WIGTOWNSHIRE

Rigg Bay, near Garlieston (108). During the last war three experimental Mulberry Harbour erections were built in Rigg Bay. The two largest of these were later removed, leaving one, known locally as the 'hippo'. It is a steel structure with a solid top some 12 yds x 7 yds standing on girders about 30 ft above the water at low tide and perhaps $\frac{1}{2}$ mile out from the shore. It can be reached on foot at exceptionally low tides. Cormorants have bred here for a number of years: J. Lears counted 160 occupied nests in 1959 and there were 38 in 1965 (all per RHM). On 3rd June 1967 we found 61 nests, most of them round the edge, with the corners and outriggers holding the largest young, but with 2 empty nests on top of the centre winch. On 100 yds of the low cliffs opposite the hippo there were 47 nests in June 1967 (RHM). The cliffs are steep and very broken and guarded at the top by a dense jungle of nettles and scrub. The nests were on broad sloping ledges and outjutting rocks. This colony is an old one. The *Gallovidian* of 1901 tells of "the rugged rocks and precipitous cliffs which are the haunt of the Cormorant and sea-mew" (Simpson 1901 per RHM). It should be stressed that the Shag is a rare bird here and most unlikely to be the species referred to. There is very little disturbance of either group.

Burrow Head (10). In 1967 a local lad reported that Cormorants were

nesting here. On 15th June 8 nests were seen in a compact group with 2 single nests $\frac{1}{2}$ mile and 1 mile away (RHM). The previous history of this group is unknown.

Castle Loch, Mochrum (300). An ancient and celebrated site on small low rocky islets on a freshwater loch about 2 miles from the sea. This colony was in existence in 1790 and probably in 1663. Stuart (1948) suggests that the yearly average of breeding birds between 1909 and 1947 was 200-220 pairs. In 1963, 1964 and 1965 there were about 214, 215 and 214 nests respectively, all with eggs, on the big islet (RHM). On 3rd June 1967 we found some 300 nests (202, 16 and 75 nests on the three islets, including about 50 without eggs or young) and some 25 half-built or newly started nests. The biggest chicks on the third (eastern) islet were about a week older than the oldest on the big islet. On 30th June 1968 a minimum of 47 nests was seen on some islets at the other end of the loch where neither RHM nor we had seen them in previous years. No count was made of the main colony. The Cormorants on this loch have been afforded a considerable degree of protection for many years.

Piltanton Estuary (29). This is a similar site to the 'hippo' in Rigg Bay but without the solid top. Six nests were built in 1967 (RCD, JGY). On 9th July 1968 there were 29 nests (including 9 with unfledged young) and 59 fledged juveniles (RCD). This appears to be a very recent colonisation.

Scar Rocks (10). Probably an old site. In 1939 F. C. R. Jourdain found 87-90 pairs, including 71 nests with eggs or young. On 24th June 1943 A. B. Duncan got 50 pairs. Gannets first bred here in 1939 and there were 40-50 nests in 1943 (McWilliam 1945). This increase has continued and we found nearly 300 Gannet nests on 27th June 1964. The local boatman who took us out said that the Gannets were "pushing the Cormorants off the rock". We saw only 10 Cormorant nests on this visit. They were on a slope above the sheer south cliff and well below the Gannet colony, which was apparently spreading downwards from the topmost parts of the rock. Some photographs of the top of the rock taken in 1942 (McWilliam 1942) show Cormorant, Shag and Gannet all nesting near the top. The Gannets have taken over this area completely. There were 18 nests on 17th June 1967 and 10 on 9th June 1968 (RHM). There is very little human disturbance.

Mull of Galloway (13). This may be a new site, probably colonised during the period when Cormorant numbers were dropping on the Scars. ADW has supplied the following counts for the cliff about $\frac{1}{2}$ mile west of the lighthouse: 31st July 1955, several birds but nests not noted; 10th July 1959, 4 nests; 19th August 1961, 6-7 pairs; 16th July 1962, about 6 pairs; 31st May 1965, D. Ratcliffe went down cliff and counted 12 nests. On 28th June 1964 we found a compact colony of 18 nests; there were 14 on 25th June 1967 and 13 on 29th June 1968. They were mainly on a broad sloping ledge of the sheer 150 ft cliff and roughly 30 ft from the top. Difficulty of access will prevent much disturbance.

AYRSHIRE

Currarie Port, near Ballantrae (28). Apparently an old site. Some 30 pairs nest here and numbers fluctuate quite a bit (JAG). There were 20+ pairs in the second half of May 1960, at least 15 pairs on a stack-like rock and at least 5 pairs scattered to the north (CEP). On 21st April 1962, 8-10 nests (4 with eggs) were seen (SR). "The main group of nests is on two adjoining rocks half-a-mile south of Currarie Port. I found 22 nests...to the north is a steep cliff and on this there were 6 more nests" on 1st June 1964 (GAR). This appears to be a relatively stable group and little disturbed.

Ailsa Craig (1). The occasional pair may have bred in the past. One

pair nested on the Barestack in 1950 (Gibson 1951). Some 1-3 pairs still nest each year (JAG).

Loch Moan (0). An old site where several hundred pairs bred in the 1880s but which suffered severe persecution by fishing interests. A solitary pair still bred in 1929 (Baxter & Rintoul 1953). There is no recent record of nesting.

BUTE

Little Cumbrae (0). Several nests were seen on the cliffs at Long Bay on 2nd June 1951 (WUF). Birds are regularly seen in this area but there is no later record of nesting (WUF, GW).

ARGYLLSHIRE

Eilean Buidhe, Loch Fyne (0). "J. F. Borland and F. D. E. Walls saw Cormorants here in 1956 and found a nest which they presumed to be Cormorant... I myself have only seen Shags and their nests here which confuses the picture" (JAG). No other information available.

Islay (6). Six nests were reported "about 4 miles west of Rhuvaal Lighthouse" at the north end of Islay in 1968 (LA per GW).

Treshnish Point, Mull (0). "It breeds on the Treshnish Islands" (Baxter & Rintoul 1953). However, in 1964 Col. Niall Rankin (pers. comm.) said "the Cormorant has never bred on the islands, only on Treshnish Point on the mainland of Mull. The colony has sadly diminished over the years since the war". "In 1892 Harvie-Brown said that of recent years it had bred on one of the high cliffs" of Mull (Baxter & Rintoul 1953). This may be an earlier reference to the same colony. On 3rd July 1967 we searched Treshnish Point in vain for Cormorants. There was none as far north as Calgary Bay or further to the south 2 miles beyond Port Haunn. This colony must have gone. Local reports suggest that there has been no human interference with the birds. Evans & Flower (1967) thought that there might be a colony on Ardnamurchan but they have no definite proof of this (WUF). If there is a colony there it might be the new location of the Treshnish birds.

INVERNESS-SHIRE

Eilean an Snidhe, Sound of Arisaig (20). An old site. "This is the largest of a small group of islets in the Sound of Arisaig... Major J. Christie Smith found up to 20 pairs there on 17th June 1964" (GW). R. A. Macdonald, a local boatman, tells me that 'snidhe' means "slime caused by bird droppings" and that Cormorants have bred there for many years; they have bred every year since 1957, except in 1963 when none was present, but they were back in 1964. He does not know of any alternative site. Numbers are relatively stable and there is no disturbance.

WESTER ROSS

Rudh Re (16). "There is, or was, a Cormorant colony on the Rudha Reidh" (SG in 1963). On 15th July 1966 we found 19 nests on the largest of several stacks lying close to the cliffs less than a mile east of the lighthouse. The nests were mainly on the flat top, with one or two on a lower spur. There were 16 nests on 6th July 1967, many with big young. There is obviously little disturbance here.

Summer Isles (2). An old colony. "The colony at Priest Island... has increased since my last visit... Mr Dobbie estimated two other colonies... both on one island, to contain about fifty nests each" (Harvie-Brown & Macpherson 1904). Fraser Darling (1947) gives "a total of nearly a hundred pairs". There was an "annual or biennial change of nesting station among the islands, involving a move of perhaps two miles each time—one year on the north and south of Priest Island, next

at Carn an Iar, then on the north cliff of Tanera Beag, and back to Priest Island again". Elsewhere (Darling 1940) he says that in 1937 there was none on Priest Island but 63 nests were counted on the western cliffs of Carn an Iar; in 1938 comparatively few nested there, most being on the west cliffs of Eilean Dubh, while a few had returned to Priest Island; by 1939 most of the birds were back on Priest Island. On 22nd July 1964 there was one definite nest, with an estimated 5 pairs at the SE corner of Tanera Beag (PG). Cormorants in breeding plumage were in this same area in June 1966 (RM). On 14th July 1966 we went round this island by boat but saw none on the cliffs and only one adult (and odd immatures) in the whole area. On 4th July 1967 there were 2 nests on a ledge under an overhang on the west side of Tanera Beag (HEB). Three days later the boatman took us round Eilean Dubh and Carn Iar and landed us on Priest Island, where we scrambled right round the island. We saw no sign of Cormorants anywhere which we certainly should have done, despite the never ceasing rain, if there had been a colony of any size on any of the islands. There has apparently been a drastic reduction in the breeding numbers in the area. Fraser Darling mentions parties shooting at seabirds round the islands during the breeding season.

SUTHERLAND

Badcall Islands (34). An old colony. In May 1903 "upon one of the inner islands...I counted over one hundred pairs flying off...and at the old spot about sixty" (Harvie-Brown & Macpherson 1904). Still breeding in 1959, 5-6 nests on Meall Earca in 1960, and 55 nests there and 4 on Meall Mor in 1961 (IDP). Breeding Meall Mearca 1964 (GW). In 1967 we saw about 20 nests there from the NE mainland in very bad visibility. In July 1968 there were 34 nests on one island out of four landed on (PC). This observer had reports of up to 200 pairs of Cormorants altogether on the islands, but there is no evidence to support this. The colony suffers from occasional persecution (IDP).

Bulgach Island (Am Balg) (?). An old site and very difficult to land on. Harvie-Brown saw "a small one on Bulgach of some eight nests which were within view" (Harvie-Brown & Macpherson 1904). Fisher & Piercy (1950) summarise the other known records. Birds were seen in breeding plumage in June 1914 but were not recorded on 7th July 1927. A colony along the top of the west-facing cliff was estimated to contain at least 50 nests on 6th July 1948. Shags had apparently occupied this site in 1927 but had been displaced by the Cormorants. The present position is unknown, although when we overlooked the island in 1966 (from some distance off) we saw no Cormorants flying about. Human disturbance is most unlikely here.

Whiten Head (0). "A very fine colony indeed close to Whiten Head on The Maiden's Rocks and on the bold cone of the headland itself, at a height of about 350 feet" (Harvie-Brown & Buckley 1887). In July 1959 there were a few on the cliffs but breeding was not proved (IRD). Odd birds, but no nests, were seen in 1960 (IDP). It is possible that some of the birds disturbed from Island Roan may breed here occasionally.

Meall Halm, Island Roan (35). No old records. On 26th June 1949 "a shooting party had been the previous day and destroyed practically all the young birds and many adults"; they were breeding in August 1958 (IDP). There were 32 nests in 1959 and 40-50 in 1962 (Downhill 1963). On 10th July 1967 we overlooked Meall Halm from Midfield nearly due west on the mainland. Although 3 miles off, the colony was clearly seen as a white splash on the top of the island and it seemed, with the telescope, that 30-35 pairs were breeding. We had local reports that boat parties occasionally went out to Island Roan, killing off the Shags "because of their predation on salmon fry", but they did not usually land on Meall Halm.

CAITHNESS

Dunnet Head (0). In 1885 "a considerable number are to be found breeding on the high ledges of the Dunnet promontory" (Harvie-Brown & Buckley 1887). There were reports of a few Cormorants here in 1965, but no proof of breeding (DMS). In July 1966 we walked the west coast to the lighthouse, seeing 3 birds (1 adult) but no evidence of nesting. A single nest was seen $\frac{1}{2}$ mile east of the light later in 1966 (DMS). In 1967 we explored this second area without success. There is probably no regular colony here.

Clyth Stacks (50). In 1964 a colony estimated at 30 pairs was found here (DMS). There is apparently no previous published record, but the local farmers say they have bred for many years and used to nest at times on the Stack of Mid-Clyth to the north. On 12th July 1967 we saw 50 nests, mostly on the small outer stack and adjacent outer side of the big Stack, but with a few on the two inner stacks. These stacks are roughly 50 ft high. The locals say they are seldom disturbed now, although eggs (of all the seabirds) were regularly collected in the old days.

Ord Of Caithness (450 and 22). On the cliffs at the Ord there was a large colony estimated at 100-200 pairs in 1960 and 1962. Still present in 1963 although "the main part of the colony suddenly shifted from a dense, compact colony to scattered sites further north" (IDP). In 1965 this same observer counted 450 nests, the colony extending north and south of the Caithness/Sutherland border. These seem to be the first references to what is obviously a well established colony. In June 1967 there were at least 451 nests (DMS). We did a repeat count on 13th July and got 415 nests. The colony was scattered over 2 miles of steep and broken cliff and, even on our two visits in 1966-67, there were many obvious changes of pitch. The individual groups in 1967 numbered mostly 20 or less (with two of 32 and one each of 72 and 73). These groups were on a variety of sites including rocky outcrops, ridges and stacks, mostly below the 100 ft level. Two miles further north there is a small group on the cliffs of **Berriedale Ness** which may be an extension of the main colony. The nests are between 300 and 450 ft up this sheer 500 ft cliff, mainly on the few broad sloping ledges. There were 8 nests in 1961 (IDP), 25 nests on 6th July 1966 and 22-23 on 13th July 1967. They are not persecuted in this area at all (IDP).

EASTER ROSS

North and South Sutors of Cromarty and Nigg (283) These colonies were mentioned by Harvie-Brown and birds "were still in numbers in 1946" on both cliffs (Baxter & Rintoul 1953). We counted about 25 nests on the cliffs SE of Castle Craig farm on the North Sutor on the evening of 4th July 1966. There were also some 200 birds (both adult and immature) roosting there. A visit on 14th July 1967 produced 82 nests on the same $\frac{1}{2}$ mile stretch of cliff. A local fisherman told us that Cormorants had been shot for the bounty until it was stopped in 1964 but that the birds were not now molested. On the South Sutor there was a compact colony breeding on a $\frac{1}{4}$ mile stretch of cliff below Gallow Hill on 15th July 1967. We counted a minimum of 201 nests. Both groups are on very steep grassy or rocky cliff, often on outcropping rocky spurs. They are probably best treated as one colony.

MORAYSHIRE

Cliffs at Covesea (0). One pair was reported nesting on the cliffs in 1962. A search in 1963 was fruitless although some non-breeding birds were present (RR).

BANFFSHIRE

Troup Head (0). A scattering of nest sites on the cliffs—say 5-20 pairs (RR in 1963). We could not locate this colony in 1966 although we walked the whole length of Troup Head. In 1967 both Troup Head and Pennan Head to the east were covered but no nesting birds were seen (ADKR).

EAST LOTHIAN

The Lamb and Craigleith (240). First bred in 1957 when there were 5 nests (Waterston 1957). Since then there has been an increase to 240 in 1968. Until 1966 all the nests were on the sloping top of the 70 ft Lamb, although birds were seen resting on Craigleith above the 150 ft sheer east face. The 1966 breeding season on the Lamb was disastrous, with most of the eggs taken by gulls. At the end of July J. W. Gibb found about 50 nests with eggs on Craigleith (per MJE) and on 6th August we saw 30 nests with eggs and 2 newly hatched chicks there.

Table 3 gives the breeding numbers on the Farnes (mainly North Wamses and Megstone) from 1885, and the corresponding numbers on the Lamb since breeding began in 1957.

Table 3. Cormorant nests on the Farnes and the Lamb

	1885	1895	1910	1934	1946	1947	1949/50	1951	1952	1953	1955	1956
Farnes	40-50	80-100	157	200	250	300	200-300	200	356	307	140	190
	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Farnes	300	194	?	?	190	129	167	193	204	200	220	?
Lamb	5	8	44	65	108	109	111	?	177	193	220	240

The Farnes figures (extracted from Watt (1951) and *Trans. Nat. Hist. Soc. Northumberland, Durham and Newcastle-upon-Tyne*) are incomplete because in some years there were heavy losses due to nest robbing or to storms which washed away part or all of the colony. Prior to 1959 the most meaningful counts are the pre-1940 ones and those of 1946, 1947, 1952, 1953 and 1957. These suggest that numbers built up over a long period till some 300-350 pairs were trying to breed annually. The lack of information for the crucial years 1959 and 1960 is followed by reasonably complete and accurate counts from 1961 onwards. These show a drop in breeding numbers at the Farnes while those at the Lamb were building up. The partial recovery at the Farnes to 220 pairs in 1967 brought the total Farnes/Lamb population to 440 pairs. 1968 figures from the Farnes are not available but one may perhaps expect the increase in the combined totals to continue. An interesting problem is to say whether the two colonies are entirely separate entities or whether there is any significant interchange of birds between them.

BERWICKSHIRE

Cockburnspath (0). There are odd records of single nests on the cliffs at St Abbs and to the north of Burnmouth (Baxter & Rintoul 1953), but no recent record of breeding. In 1967 there was a bird sitting on eggs on the cliffs south of Cockburnspath (DRP).

OUTER HEBRIDES

Loch an Tomain, North Uist (4). An inland colony on fresh water, some $\frac{1}{2}$ mile from the sea, which has been in existence for at least 20 years, during which period the numbers have declined (JWC). On 30th May 1967 there were 11 birds present and 4 nests with eggs (GPS).

Stockay, Monach or Heisker Islands (20). Possibly an old colony but

few definite records. "A few breed on Stockay" (Allan 1955). On 29th May 1962 there were 20-25 nests on this eastermost island of the Monachs. Some were empty and others contained from eggs to almost fully fledged young (SR). There is probably little disturbance.

Causamul, North Uist (70). An islet off Aird an Runair, Balranald Reserve. "There were about 70 nests on 15th June 1967—60 on a 'main area' at the east end, and a further 10 around the summit cairn. The nests contained a mixture of eggs and young. From all accounts it appears that this colony has been quite sharply expanding for a number of years—probably at the expense of Puffin, Fulmar, Eider, etc. which also breed there" (GPS). No Cormorants were recorded here in July 1939 (Freeman 1940).

Spuir Rock (between Pabbay and Boreray) (10). They have nested here since the second world war and were still breeding in the early fifties (JWC). "I have found nests...but these were obscured by Shags...in the early sixties—this rock is very easily swamped in rough seas" (MR).

Bearasay, Loch Roag, Lewis (26). Robson & Wills (1963) "counted 26 nests in such condition as to suggest recent use" in the first week of August 1962. The nesting area was "along the edge of the eastern cliff".

ORKNEY

Little Pentland Skerry (15). A low bare rocky skerry NE of Caithness. There are no old records of breeding. Twenty pairs were estimated in 1962; 15 pairs bred in 1968 (per DMS).

Horse of Copinsay (25). A 50 ft stack. In 1962, 20-30 pairs were estimated nesting on the flat top. There are no old records of breeding.

Holm of Boray and Taing Skerry (200). The former is a low, small, narrow, elongated island, and the latter a small stone-shingle islet. They are $\frac{3}{4}$ mile apart and constitute a single colony. There were no Cormorants here in the 1890s and the period when colonisation took place is unknown. The first record of breeding is of 180 pairs at the Holm in 1959. Since then between 200 and 220 pairs have bred at the two sites. From 1960 to 1962 the main group was at Taing Skerry. In 1963 the bulk of the colony moved to the Holm and this was still the stronghold in 1966.

The Brough of Stronsay (20). A 100 ft stack off the cliffs of Burgh Head, Stronsay. This colony has been in existence for many years although not apparently in the 1880s. Some 20 pairs were estimated for the years 1959-63.

Muckle Green Holm (82). This colony was known in 1935. On 20th July 1961 82 nests were counted, of which 41 had eggs, 2 had small chicks and 39 had large young, the majority of which could fly. The nests are on the 40 ft cliffs of this 100 acre island.

Calf of Eday (200). An old colony which was in existence in the 1880s. Some 200 pairs breed on the 100 ft cliffs of this 400 acre island. It was first counted in 1956 when there were 220 pairs.

Seal Skerry (50). An old colony on a low, bare, rocky skerry off North Ronaldsay. There were 50 nests with eggs in July 1892. Numbers were estimated at around 40 pairs in 1963-64, and 50 nests were counted in 1965.

SHETLAND

The Muckle Holm, off St Ninians Isle (22). Venables & Venables (1955) mention a small colony here. They say (pers. comm.) that there were 30+ nests in 1953, 18 nests in 1958 and 22+ nests in 1959.

Gaada Stacks off Vaila (10). Venables & Venables (1955) mention a

small colony here. In late August 1966 it had obviously been used that year and the boatman said there were "aye big Skarfs on it in summer" (RJT).

Bard Head, Bressay (7). Occupied in Raeburn's time (1880s-1890s) with 20-30 pairs in 1951 (Venables & Venables 1955). There was a colony of 7 nests near the Giant's Head on 3rd July 1964; similar numbers were seen in July 1966 on the clifftop about 250 ft above the sea (RJT).

Clett Stack, near Silwick (40). On 7th July 1964 there were an estimated 40 nests on this stack—possibly 100 ft high (RJT).

West Coast of Muckle Roe (250). "Raeburn found about 120 pairs in 1895, all in the vicinity of Grusterwick, whereas... in 1952... the colony now extends from Grusterwick to the Erne Stack and has increased to about 237 pairs" (Venables & Venables 1955). A colony recorded by Raeburn on the Lang Head of Mangester, 2 miles to the north, was not occupied in 1952 (Venables & Venables 1955), nor in 1964 (RJT). On 26th June 1964 there were about 250 nests from Grusterwick to Erne Stack (62 on Grusterwick, 77 on Swabie Stack 'shore station', about 60 on the 120 ft Swabie Stack and about 50 on Erne Stack) (RJT).

Cliffs near Braewick (35). "The St Magnus Bay colony on and around the Heads of Grocken and Braewick was... 'occupied from time immemorial'... but we are told that only a few pairs breed there now" (Venables & Venables 1955). In 1958 or 1959 there were at least 56 nests—28 on the big stack (the Runk) and 28 on the nearby razor-back peninsula on the mainland (WK). There were probably at least 35 nests on 18th July 1964—about 60 young on the 'Runk' and about 25 young on the stack to the north; a number of spent .22 shells on the razor-back suggest there may have been some disturbance of this colony (RJT).

East cliffs of Fethaland (0). A small colony recorded by Venables & Venables (1955) but no birds seen in 1964 (RJT).

Ramna Stacks (35). "Occupied in Raeburn's time". "In 1952 we estimated (from the sea) slightly under 100 pairs, mostly on Fladda" (Venables & Venables 1955). In 1961 there were probably under 50 pairs (DW). A rough estimate of 30-40 nests was made on 8th July 1964, and similar numbers were seen on two stacks about 100 ft high on 21st June 1966 (RJT).

Acknowledgments

I am indebted to a great many people for information about colonies, for counts made on one or several occasions and for negative reports. R. J. Tulloch has supplied most of the recent data on Shetland. The Orkney material has been abstracted almost entirely from Balfour, Anderson & Dunnet (1967). I should like to record my appreciation of the help given by the following and to apologise for the trouble I have occasionally caused them; where relevant their initials are included in the text. A. F. Airey, L. Anderson, T. Bagenal, H. E. Beaumont, Dr J. W. Campbell, P. Catchpole, R. C. Dickson, the late I. R. Downhill, M. J. Everett, Miss W. U. Flower, Dr J. A. Gibson, Seton Gordon, P. Goodlad, M. Henderson, T. Johnson-Ferguson, W. Kay, Lt.-Col. W. M. Logan-Home, R. A. Macdonald, Cmdr. W. I. L. MacEwan, Cmdr. R. H. Miller, R. Moat, C. E. Palmar, Dr I. D. Pennie,

G. Poland, Dr D. R. Potts, A. D. K. Ramsay, the late Col. N. Rankin, G. A. Richards, Dr R. Richter, E. L. Roberts, S. Roberts, M. Robson (MR), Dr M. Rusk, G. P. Simmons, D. M. Stark, Mrs A. A. Taylor, G. Waterston, Dr A. Watson, A. D. Watson, D. Wilson, J. G. Young. Members of Edinburgh Natural History Society assisted with the counts on the Lamb.

Summary

Some 3000 pairs of Cormorants breed in Scotland, about two-thirds of them in the seven largest colonies. The main concentrations are in the southwest and from Easter Ross to Shetland, with one expanding colony in the Forth and smaller ones in the northwest and Outer Hebrides. Details are given of the history, physical characteristics and disturbance of the colonies.

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Short Notes

Fulmars collide in mid-air

In the middle of January 1969, the Fulmars having returned to their colony near my home in Skye, I observed a head-on collision between two of them. Both birds apparently received knock-out blows, and they fell to the surface of the sea 100 feet beneath. No lasting injury apparently resulted, for both birds recovered and flew away.

SETON GORDON.

A raptorial mystery

On 27th May 1968 J. G. Young and I found a dead adult ♀ Hen Harrier on a moorland hill; it was a bird which I had ringed as a nestling in this same area on 22nd June 1965. It was lying face downwards with wings outspread and had been dead only a few days; a wound on the breast was the only obvious injury. Close by the body we found a large pellet and also the upper part of the plucked wing and breast-bone of a Snipe, and about 20 yards away we came upon the despoiled nest of a Red Grouse, with ten well incubated eggs, mostly bitten through and the contents eaten, and a trail of feathers leading to the bitten-off wing of a female grouse. We were at first uncertain whether all these finds were linked, but concluded, from the bitten-off wing especially, that the raid on the grouse nest had been the work of a fox—a view later shared by Ernest Blezard.

I sent the strangely assorted remains to EB, who wrote that the pellet was very similar to those of Golden Eagles he had worked on. The size (95 x 35 mm) tallied and prey remains in the pellet included blue hare fur and rib fragments, and feathers and assorted bones from Red Grouse. He also confirmed identification of the Snipe remains, adding that a predator had been responsible for biting away the keel of the sternum.

From the beginning I had wondered whether the harrier could have been struck down by an eagle, as I had watched a pair of harriers diving closely at a pair of eagles over the same hill a week before, and have often seen similar behaviour when an eagle was passing near a harrier's nest. I sent the harrier remains to Dr Ian Prestt, who commented that there was no sign of any obvious disease or accidental injury and that no parasites were present. He also remarked that

the wound superficially resembled a bullet hole, but that there was no exit hole and that, while it was difficult to be certain, it was reasonable to assume that this wound could have been caused by a talon.

The evidence certainly suggests that a Golden Eagle struck down the harrier while sparring with it, perhaps while the harrier was carrying a Snipe, a fairly frequent prey species. The plundered grouse nest was doubtless no more than a red herring!

A. DONALD WATSON.

Goshawk in East Lothian

On 31st March 1969 at Aberlady Bay a sudden excited flushing of waders on the tide line drew my attention to a large raptor, which I identified as a Goshawk, evidently an immature female.

It was flying in tight circles about 100 feet up, with alternate periods of gliding and a few fast wingbeats. It was very large—much larger than Carrion Crows in the air at the same time—with a silhouette intermediate between Buzzard and Sparrowhawk, with which I am quite familiar, but easily recognisable as a hawk rather than a buzzard or harrier. The wings were very broad, rounded and fingered, longer and broader than a Sparrowhawk's; the tail, shorter in proportion than a Sparrowhawk's, was long and thin, except when fanned during soaring, when it appeared very broad. The bird was dark brown above, and pale buff, heavily streaked with darker markings, below; the vent area was paler but not conspicuously white; one broad terminal band and two or three narrower ones could be seen under the tail; no head pattern was visible against the sky. The bird flew west over the bay, gaining height and wheeling occasionally till lost from sight.

M. A. MACDONALD.

(This is the first record for East Lothian. We are publishing it in full, not so much on account of the rarity of the species but as an illustration of the minimum sort of supporting detail required to confirm records of the Goshawk. We find it difficult to get absolutely convincing accounts of Goshawks, and feel obliged to reject a higher proportion of reports than of any other species for lack of certainty that the birds are not just large female Sparrowhawks, which can be most deceptive in open country. It is almost essential to have some direct comparison of size with another large bird, such as the Carrion Crows mentioned here.—ED.)

Kites in West Sutherland and Kinross-shire

At 9.20 a.m. on 19th March 1969 I saw two Hooded Crows mobbing a Kite above the village of Scourie in West Sutherland. It was in silhouette, but during two minutes' observation its sharply angled wings and deeply forked tail were clearly seen. The identification was amply confirmed half an hour later when the Kite, again pursued by a Crow, left a rock by the road $\frac{1}{2}$ mile east of the village and flew low round me about 100 yards away. With x10 binoculars details were obvious: the distinctive white patches under the wings, the bright chestnut tail, and the whitish head. I watched it for about 10 minutes, flapping about in the high winds, before it disappeared into hilly ground behind the village. This observation was made at the end of a week of uninterrupted easterly gales. I know the species quite well from birdwatching abroad.

BAXTER COOPER.

Whilst carrying out a Common Bird Census on Vane Farm Reserve, Kinross-shire, at 0820 hrs GMT on 26th April 1969 I was distracted by the mobbing call of Jackdaws, two of which were chasing a large bird of prey near the ridge of Benarty Hills. Without the aid of binoculars it appeared to be a harrier. However, on sighting it with my binoculars I saw that the long tail was deeply forked, and immediately identified it as a Kite. The wings were now seen to be broader than a Hen Harrier's, and angled, with the primaries fingered, as shown on a sketch supplied to the editor. No colours were discernible as I was low down the hillside looking at the bird against a bright cloudy sky. It was in view for about a minute.

J. H. SWAN.

(Though once a common breeding bird the Kite has been satisfactorily recorded in Scotland only twice in the last 50 years (since 1920)—one captured North Kincardineshire 18th April 1929 (*Scot. Nat.* 1929: 180) and one seen Aberdeenshire 13th February 1958 (*Scot. Birds* 1: 11). In recent years there have been odd scattered reports of raptors that were thought to be Kites, but it has not been possible to establish any of them with certainty.—Ed.)

Dotterel notes from the Cairngorms

It is readily understandable why the Dotterel is one of the lesser studied of British breeding birds. Its nesting grounds lie in terrain that is difficult to search thoroughly, in Britain being confined mainly to flattish mountain tops and gently sloping ridges in the Scottish Highlands at alti-

tudes above about 2500 ft. The long distances involved, frequent bad weather at the breeding grounds, the cryptic plumage of the species, and the habit of incubating birds of sitting very tightly on eggs—these add up to a combination of factors heavily weighted against an observer. In addition the species is rather rare in Britain. Desmond Nethersole-Thompson, who is the British authority on Dotterel and at present writing a monograph on the species, considers that the British breeding population now numbers only about 60 to 80 pairs in normal years. Consequently new information on the species is rarely obtained, so that the following notes on one unusual nest may be of interest.

On 15th June 1968 I visited an extensive high plateau of the Cairngorms on which in earlier years I had found several Dotterel nests. After some searching I located a pair of the birds and watched them for about two hours while they fed, preened, or stood about apparently doing nothing, although in fact they were watching me closely as I sat on a rock some 80 yards from them. They then moved one at a time, in a furtive scuttling way and stopping frequently to see if I was following, up across a gentle slope, passing about 50 yards from me, and disappeared from sight over a slight rise in the plateau. This behaviour strongly suggested that they were returning to a nest, so I hurried to the higher ground to keep them in view. I failed to spot the cock but was surprised to observe three hens fighting, buffeting one another quite fiercely with outspread wings. On seeing me the hens stopped fighting and tried to lead me away from the spot, scattering and uttering distraction calls as they ran off. I did not follow, but remained motionless watching their movements. Eventually, after some running to and fro among the low hummocks, tussocks and boulders, all three took up stationary but quite separate watchful stances some 100 yards from me and made no further move while I stood there. Suspecting that I must be fairly near the nest and that the birds would not venture towards it while I remained in sight, I left the immediate vicinity and commenced a systematic search of the plateau.

The nest was eventually found at a height of about 3950 ft. It was in a fairly typical site for the Cairngorms, close beside a stone in the middle of a patch of withered sedge and rush, and contained only one egg. Withdrawing about 50 yards I sat down, and within a few minutes a male Dotterel appeared and ran up to the nest, closely escorted by a hen. As the cock bird settled on the egg a second hen approached quite near but was quickly chased away by the first hen, which appeared to be the mate of the sitting cock. I then saw the third hen about 60 yards away. The second hen

joined it and the two fed for a short time; but then the second hen stopped feeding and made repeated approaches towards the nest, coming to less than 20 yards from it. Each time the owning hen chased the intruder away while the third stood watching from 50 yards off.

After photographing the single egg I left the hill. At that date I thought that the intruder hen was anxious to mate with the cock bird, for on both this hill and on another much vaster plateau which I had searched a week earlier cock Dotterel were definitely scarce; but subsequent events showed I was probably mistaken. On 29th June I returned to the nest and was astonished to find the cock sitting on four eggs. There is only one previous British record of a Dotterel nest with four eggs, and DN-T, who has corresponded with the author of that record, tells me privately that all four eggs were similar and appeared to have been laid by the same hen; the record therefore is almost certainly of a true clutch of four. The *Handbook* gives the usual clutch in Britain as three, occasionally two, with four rarely recorded in Europe, while the latest (1968) edition of the *Popular Handbook* still repeats the *Handbook* figures without qualification.

I measured the eggs, made a written description, and photographed them (plate 27). Even to the unaided eye one egg was obviously different from the other three. It was smaller, measuring 38 x 26 mm (smaller than the minimum quoted in the *Handbook*), but a typical Dotterel egg, being of a dull olive-green ground-colour spotted with small brown spots and blotches. The other three measured 42 x 27 mm, 41½ x 28 mm, and 43 x 27 mm, were pale blue in ground-colour and were more heavily spotted and blotched with brown and black. They had obviously been laid by the same hen, and there could be no doubt but that here was a standard-sized clutch of three with a fourth egg laid in the same nest by a different hen. Examination of photographs taken on the different dates later showed that the first egg had been one of the standard-sized clutch. I also realised that the strange behaviour of the intruder hen could be interpreted by assuming that she was the layer of the odd egg and that she was anxious to lay it while I was watching.

The ground-colour of the three similar eggs was also extremely unusual. They were a very pale, washed-out blue, rather paler than normal eggs of the Wheatear, and of a type I had never seen before. DN-T has visited well over 100 nests of the Dotterel and has several times seen single blue eggs in nests containing the normal types, but never a complete clutch. One of his correspondents however found a

complete clutch of pale blue ground-coloured eggs in 1967, while Dr Bryan Nelson told me some years ago that in the mid 1950s he found a clutch with blue ground-colour. Clutches of this colour type would therefore seem to be very rare.

More was to be forthcoming from this intriguing nest. I had notified Dr Adam Watson, of the Nature Conservancy Mountain and Moorland Ecology Station, of this site and of events at it; and that I thought the eggs would hatch about 12th or 13th July. Dr Watson visited the nest on 11th July and found that the young had hatched and were already many yards away from the nest; the incubation period therefore had been 24 days or less. Very few records exist of such short incubation periods for this species, 25-27½ days being normal. A very uncommon feature was that all four eggshells were left in the nest depression, instead of several or all being removed as is customary. In addition Dr Watson found the broad end of one shell tucked tightly into the broad end of another, as happens frequently with the eggshells of farmyard hens. I have never seen this with Dotterel eggs.

Finally, I must acknowledge my thanks to DN-T for reading a draft of these notes, for saving me from making several errors, and for providing me with additional information, some of which I have incorporated.

ALEX TEWNION.

Common Sandpiper devoured by Common Gull

On 16th July 1968 among the Common Gulls clamouring for scraps by a loch in the Spey valley, Inverness-shire, we noticed one carrying a large object in its beak, from which grass trailed. It landed in a field 200 yards away before returning, dropping onto the water of the loch, no distance from our tent.

We were surprised to see that the object was in fact a small wader, which the gull proceeded to smack vigorously into the water, in much the same manner that Song Thrushes smash snails against stones. The wader, a Common Sandpiper, was struggling, stretching out one wing and thrashing its legs. However, the Common Gull was relentless in its attack and did not release the grip of its bill. The beating sessions were interrupted with periods of attempted drowning, when the sandpiper was forced under the water for many seconds. Eventually the bedraggled bird succumbed. The gull then began a crushing process, opening and forcefully closing its mandibles, at the same jerking the body so that every part of the corpse received this treatment.



PLATE 24. Matt Forrester (see page 401)

Photograph by Tom Weir



PLATES 25-26. Some unusual nests.

*Photographs by Alan Jamieson (Starlings)
and William S. Paton*

Black-headed Gull about to incubate two eggs and a tennis ball, Horse Island, Ayrshire.

Young Starlings on 48 lb. nest, 7 ft x 4 ft x 4 ft high, in a four-year-old canteen attic at Back, Lewis, 1968; access was by a 2½ inch hole at the apex of the gable.





Two hen Blackbirds which had lost previous clutches in separate nests incubating six uniform-coloured eggs in a shared nest; both hens (one a very aggressive bird) and the single cock were later seen feeding small young in the nest, Kilmarnock, Ayrshire, June 1965.

Common Gull at tree nest 20 ft from road and 15 ft from water, Loch Lomond, June 1965; the site, used at least since 1962, is near a favourite stopping place for motorists where gulls hang about looking for titbits.





PLATE 27. Dotterel at nest in Grampians, June 1967. *Photograph by N. Picozzi*

Dotterel nest with four eggs; the top left was the odd one described in the text (see page 381) and the bottom left was the first laid.

Photograph by Alex Tewnion



The ensuing swallowing action was quite remarkable; with some considerable difficulty the sandpiper and some entangled grass slipped down the gull's gullet. When swallowing proved impossible it would be ejected and the 'chewing' action renewed. At last only a few feathers, a leg and some grass were visible, but at this point other Common Gulls began mobbing the gull. It was chased to distant fields and there forced to disgorge its prey, letting the body drop into the hay. In the *mêlée* that followed we were unable to see what resulted; but one gull flew back to the water's edge with grass hanging from its beak. Here it drank, removed the grass, then returned to the colony on the far side of the loch.

Although we did not actually witness the capture there seemed little doubt that the Common Sandpiper (possibly an immature) was snatched up in the nearby meadows, which would explain the attached grass. Certainly the vigorous attempts to break free were not the actions of an ailing bird; although this does not preclude the possibility that it had been previously injured.

G. M. S. EASY, M. T. BARNES.

Probable Scandinavian Herring Gull at Aberdeen

On 19th January 1969 I spent about an hour watching a yellow-legged Herring Gull in a mixed flock of about 50 gulls at Bridge of Don, Aberdeen.

The bird was identical to nearby Herring Gulls in size, build and general behaviour, but showed several differences in plumage. Its pure white, unstreaked head made it easy to find with the naked eye, although some of the other Herring Gulls present had only sparsely streaked heads. The bill appeared slightly brighter yellow with a more noticeable red spot. Its back and wings were slightly darker than those of a Common Gull, and noticeably darker than those of the other Herring Gulls, and this too made for quick recognition. The legs and feet were dull yellow, not as bright as those of a Lesser Black-backed Gull, but distinctly yellow and not merely pale flesh or ivory as in many Herring Gulls.

I considered that this bird showed the characteristics of a Scandinavian Herring Gull *L. a. omissus*.

M. A. MACDONALD.

(This note has been shown to Prof. M. F. M. Meiklejohn, who comments, "It answers very well to *omissus* in my opinion. The Siberian forms would be noticeably larger than *argentatus*. I think the brighter yellow of the beak may be significant. Looking at Mediterranean Herring Gulls *L. a.*

michahellis in April 1969 I thought their beaks yellower than in our race: the beaks also seemed bigger, but this may have been caused by the brighter colour."—Ed.)

Caspian Tern on Loch Lomond—a new Scottish bird

On the evening of 7th August 1968, at the mouth of the Endrick, Miss C. Allan and I found a Caspian Tern sitting on a sandbank. We watched it for about 20 minutes, and then it flew 200 yards along the sandbank before flying out over the water. It was seen in both Stirlingshire and Dunbartonshire.

At rest, it was a long bird, larger than nearby Black-headed and Common Gulls, with a noticeable black cap and white forehead and a long, thick red bill. The legs were black, and it stood higher than other terns. The back was pale grey, with the long grey wings appearing to show black primaries; however, when the bird flew I saw that only the undersides of the primaries were black. In flight the forked tail was visible.

Once it dipped down to the water, as if drinking, and later we saw it plunge in rather clumsily. At one point it was seen almost alongside an Osprey. It finally returned to the sandbank, and was still there when we left.

M. FORRESTER.

Little Owl in Lanarkshire

On the evening of 14th July 1967, near Elsrickle, I spent about 45 minutes watching a Little Owl taking food in a field adjacent to the road. It flew frequently into a group of trees on the other side of the road and moved through them, calling occasionally. The behaviour was much like that I have seen near nests, but the date makes breeding unlikely (the Little Owl has been a May breeder where I have known it).

H. DICKINSON.

(This note amplifies the brief details already given (*Scot. Birds* 5: 356) of the first Little Owl in Lanarkshire.—Ed.)

Alpine Swift in Argyllshire

On 6th July 1968 I saw an Alpine Swift on the sea cliffs between Kilchoan and Ardnamurchan Point. I was attracted to this bird by its large size and the speed of its flight, and as it flew past me several times I was able to see the plumage

features quite clearly, especially the grey-brown upperparts and white belly.

F. C. BEST.

(This is the first record of this species in the Argyll faunal area.—ED.)

Roller on Islay

On 29th September 1968 my eldest son and I saw a Roller at Cladville Farm, Portnahaven, where the bird had been seen earlier by Mr and Mrs Glover and J. Bain. We were able to get to within 20 yards of the bird as it sat on a fence post, but unfortunately it was then frightened away by the arrival of the farmer's dog. It was not seen in the area again.

It resembled a small crow, especially about the head, and we noted a black bill, a brown line running through the eye, a light brown back and yellow legs. On being disturbed it flew rather like a pigeon before gliding into the next field. The brilliant blue underparts and wings, the latter with dark tips, were not obvious until the bird was seen in flight.

A. M. TAIT.

(This is the first record for the Inner Hebrides.—ED.)

Shetland Wren in Aberdeenshire

On 13th January 1968 I found a Shetland Wren *Troglodytes t. zetlandicus* dead beside the road near Newburgh. I preserved the specimen in formalin and compared it with skins in the British Museum before removing the head for a study of skulls. The bird was larger and darker than the mainland Wren and had very large feet. I made the total length 106½ mm, wing 48 mm, tail 34 mm, bill 12½ mm, and tarsus 20 mm.

HILARY KING.

(We sent the body to K. Williamson, who has studied island forms of the Wren, and after comparison with skins he reported that it was undoubtedly the dark Shetland form and that white spots on the coverts suggested a bird of the year. Though Shetland Wrens are rare even at Fair Isle (*Fair Isle Bird Obs. Bull.* 1(9): 37)—the local birds being distinct—post-juvenile dispersal to Aberdeenshire (with or without assisted passage) is quite possible. Wrens apparently of the Norwegian population have occurred in a number of autumns at Fair Isle, and there is no reason to think that the Aberdeenshire bird was not a genuine migrant.—ED.)

Dusky Thrushes in Shetland

On 24th September 1968, while I was driving towards the north end of Whalsay, I saw what I at first took to be a Redwing running through the grass at the roadside. I stopped and looked at it from about 70 yards through 12 x 50 binoculars, and as the bird stood still could just see its head, neck and upper back. I immediately realised it was not a Redwing when I saw that the prominent markings above and below the eye were white rather than buff. Within seconds the bird moved into full view, caught a slug, broke it up and ate the pieces, and at that point I noticed chestnut on the closed wing. As it flew along the road, settling again 50 yards further on, I saw chestnut on the wings and brownish-chestnut on the rump.

I then drove slowly along until I was about 50 yards from the bird, when it again began running and then stopped to break up and eat another slug. This time I had an excellent view and was able to make a rough sketch and note the main plumage features, which included a dark breast-band, whitish chin and throat, and brown streaks on the flanks and lower belly. I thought that it appeared slimmer than a Redwing. I then flushed the bird and noted that it showed a buffish chestnut underwing, more like that of a Song Thrush than a Redwing. After consulting the *Field Guide* I was now sure that this bird was a Dusky Thrush.

My detailed description is as follows:

Forehead, crown, nape and hind neck dark brown, feathers of hind neck edged ash-grey; very prominent white eyestripe from lores over eye to back of head; lores and ear coverts black-brown, very dark in contrast to eyestripe and cheeks; cheeks, sides of throat and sides of neck creamy white, with a few dark spots on sides of throat and neck; mantle and scapulars dark brown, edged ash-grey, scapulars with shade of chestnut; back and rump brownish, much chestnut on rump noticeable when flying away; upper tail-coverts and tail brown; lesser coverts brownish, edged ash-grey; median and greater coverts chestnut, edged ash-grey; primary coverts brownish-chestnut; secondaries chestnut fading to brownish on inner feathers; primaries brown; under wing-coverts and axillaries buffish-chestnut; rest of underwing light brownish, chin and throat creamy white; centre breast and belly whitish; breast spotted black-brown forming noticeable breast-band from shoulder to shoulder, dense at sides and very faint in centre; sides and flanks spotted rusty/black; bill black-brown; legs and feet brown.

I later telephoned R. J. Tulloch, and he and Dennis Coutts arrived on Whalsay the following day. In spite of an extensive search the bird was not seen again.

JOHN H. SIMPSON.

(This is the second Scottish and fourth British record of this Asian thrush. The first Scottish bird was a first-winter

female, trapped on Fair Isle in October 1961 (*Fair Isle Bird Obs. Bull.* 4: 209). This bird has not been described fully, and R. H. Dennis has kindly supplied the following notes from the observatory records.—ED.)

A Dusky Thrush was discovered near the Haa on Fair Isle on the morning of 18th October 1961. It was briefly seen in the same area that afternoon but next day had moved to the northern part of the island where it was finally caught at dusk in the Vaadal trap. It was taken to the Bird Observatory to be ringed, and as it was already dark was roosted overnight in the bird-room. It was released next morning and spent the day near the Observatory; it was last seen on 21st near the Vatstrass Burn.

Peter Davis wrote in the log for 18th October that "in the field it was a handsome, if sober-coloured bird, reminiscent at first glance of a large, pale-looking Redwing, with a similar but more conspicuously marked head pattern. The upperparts were of a drabber olive-brown than a Redwing's, slightly more rufous on the rump and upper tail-coverts, the tail dark brown, the underwing rufous, and there was a long rufous-buff wing-patch made by the edgings of the greater coverts and secondaries. The breast had a double gorget of close streaking with finer streaks between and the throat was clear creamy-buff between two clear blackish chin-stripes (under the moustaches). The flanks also were well streaked with blackish colour and washed greyish-brown, the belly creamy white and the under tail-coverts prominently white at the sides."

A full laboratory description is filed at the Observatory and is as follows:

Entire upperparts, forehead to upper tail-coverts, greyish-olive brown, with very slightly paler edges to each feather giving a mottled appearance; feathers of crown and forehead with dark brown centres also; rump slightly warmer colour than rest with red-chestnut centres hidden by tips and fringes; supercilium long, rather broad, whitish washed grey-brown; lores, ear coverts and cheeks uniform grey-brown; moustachial streak broad, whiter than supercilium, speckled brown; malar stripe below formed by blackish-brown tips to white feathers, curving round to sides of neck and merging into sides of spotted gorget; centre of chin and small area at centre of throat (between chin stripes) creamy white; below this an extensive dark rusty-brown pectoral band obscured by long whitish fringes of feathers, most of which had small dark notches at tip; some greyish-buff suffusion of white fringes on lower part of gorget; belly pure white; under tail-coverts rusty-brown with very broad white tips and edges to feathers, more white than rusty; flanks showing mainly white, blotched rusty and black with grey-brown wash, especially towards rear; flight feathers and greater coverts all dark brown with paler outer fringes, whitish on primaries, rusty-buff on secondaries and tertials; corresponding greater coverts similar, those of secondaries with fairly clear whitish tips; tertials also tipped whitish; median and lesser coverts

greyish-olive brown with rather paler fringes, lessers very much as mantle; underwing warm chestnut wash, paler than Redwing; tail dark brown, all feathers with rusty edging near base only, narrow whitish edging on rest; bill dark horn, turning yellowish at base of lower mandible; legs dark red-brown; eye dark brown. Aged and sexed as 1st-year female. Weight, 84.2 gms. Measurements: wing 128 mm; bill 22.5 mm; tarsus 34 mm; tail 90 mm. 3rd primary longest, 2nd 4 mm, 4th 2 mm, 5th 8 mm, 6th 19 mm, 7th 26 mm and 8th 30 mm shorter; 3rd, 4th and 5th emarginated on outer webs; 1st primary minute, 9 mm shorter than primary coverts.

ROY H. DENNIS.

Subalpine Warblers in Shetland and Orkney

On 22nd April 1968 John Bruce telephoned to describe a warbler he had seen in his garden at Skaw, Whalsay. I was on the scene within half an hour and eventually found the bird feeding in a disused cabbage patch overrun with reeds and dockens and surrounded by a drystone wall.

I watched it for some time through 12 x 50 binoculars at about 25 yards range and identified it as a Subalpine Warbler, apparently a male. I saw all the characteristic plumage features and took full field notes.

I could not find the bird during the next few days, but saw it—or a similar bird—about two miles from the first locality on 30th April and daily until 5th May; on one occasion it was watched at close range from an open window and several other people saw it. The bird was very active and kept flitting from bush to bush, sometimes down amongst the grass and rhubarb, and sometimes climbing along a drystone wall and feeding amongst the lichen on the stones. It frequently cocked its tail like a Wren, especially when feeding on the stones.

On 5th May I saw another Subalpine Warbler in a different part of the island. This was probably a female, being a duller bird with only a faint moustachial stripe.

JOHN H. SIMPSON.

(Full field notes have been supplied. There are several previous spring records of this species from Shetland and Fair Isle.—Ed.)

I watched a Subalpine Warbler for about ten minutes, at ranges down to five yards, on Auskerry on 29th May 1968. Its most striking feature was the pinkish chin, throat, breast and belly, reminiscent of a Dartford Warbler. In size and shape it was much like a Whitethroat, though the tail was often cocked in Dartford Warbler fashion.

Apart from the pinkish underparts mentioned above, plumage details were: blue-grey head and nape, less blue

on the back and rump; clearly defined white chin-stripe; brown wings with no chestnut visible; longish brown, slightly notched tail, with outer feathers showing white; the pink or vinous on the underparts noticeably paler on belly; pale flesh-coloured legs; pink eyes.

E. J. WILLIAMS.

Pallas's Warbler in Aberdeenshire

On the afternoon of 22nd October 1968 I found a small phylloscopine warbler in a clump of willows in Collieston churchyard, Aberdeenshire. Its prominent supercilium attracted my attention, and at first I thought it was a Yellow-browed Warbler, but then I glimpsed a crown stripe and, a little later, a yellow rump, and tentatively identified it as a Pallas's Warbler. After making some notes I glanced quickly at the *Field Guide* and my suspicions were confirmed, so I telephoned W. Murray at Culterty Field Station, Newburgh.

When I returned, the bird had moved to a taller clump of trees 50 yards away, and when WM and A. Anderson arrived shortly afterwards we had excellent views of it in bright sunshine. WM and AA left soon afterwards, but I continued to watch the bird until it moved to another clump of trees. Later that afternoon WM and I found the bird again in the original willows, and after some time caught it in a mistnet. It was then taken to Culterty where it was measured, ringed, photographed and examined in detail. WM released it at Collieston next morning. During this time the bird was also seen again by AA, and by Mr and Mrs A. Robb and family, D. Lloyd and M. Gorman. A. D. K. Ramsay and A. W. Diamond saw it later on the morning of 23rd, and J. A. Love, W. M. Morrison and I had excellent views of it during the afternoon. It was last seen by WM on 24th.

The bird was extremely active throughout all periods of observation, frequently hovering with rapidly moving wings while picking insects from the undersides of leaves, and occasionally sallying forth like a flycatcher. It preferred the tops and edges of trees, 10 to 15 feet above ground, but often came much lower. It readily left what little undergrowth was available, and while feeding incessantly in several clumps of trees flew freely across 30 yards or so from one clump to the next. On 23rd it perched on a telegraph wire before disappearing over the roof of a house, and when we found it again in a garden 100 yards away it was seen briefly on the ground.

A Goldcrest was present for some of the time, affording a good comparison, and the warbler appeared very slightly

larger. The abundance of yellow stripes and bars was very striking, and the yellow rump was very clear when the bird flew or was hovering. It was only heard calling once, shortly after discovery—a short, soft *hweep*, disyllabic but slurred.

The bird's lively behaviour and the weather situation suggested that it had been present for a few days, although AR and family did not see it in the area on 20th. Strong westerlies prevailed over northern Europe prior to 22nd, but on 18th there was a belt of high pressure from Norway to Austria, producing calm clear conditions with an occlusion moving slowly northeast into the North Sea preceded by light southeast winds. The bird may well have arrived at this time.

The following plumage description is based on our detailed notes:

Crown dark green; yellow crown stripe, bill to nape; prominent bright yellow supercilium, bill to nape; eyestripe and lores greenish-black, broader near nape, stripes not meeting at nape; nape, mantle and back green with slight olive wash; square-shaped yellow rump patch; upper tail-coverts green; tail square ended, feathers with pointed tips, grey suffused green, outer webs bright green; primaries and secondaries as tail feathers, with pointed tips, less so in first four primaries; greater coverts dark grey, outer webs fringed green, tips broadly edged pale yellow forming prominent wing bar; primary coverts as greater, but no yellow tips; median coverts grey, tipped pale yellow, forming less prominent wing bar; lesser coverts grey tipped green; bastard wing yellow; tips of outer webs of tertials pale yellow, forming small V when seen from above, apex towards tail; axillaries and under wing-coverts pale yellow; chin, throat and belly white suffused very pale yellow; breast white with pale grey wash—lack of yellow noticeable in field; flanks and under tail-coverts very pale yellow; bill dark brown, pale horn at base of lower mandible; legs and claws brown, 'ankles' and soles of feet yellow-brown; eye black; lower part of orbital ring bright yellow. Wing 47 mm; bill 10 mm; tarsus 16 mm; tail 36 mm; 4th and 5th primaries longest and equal; 2nd and 8th 7 mm, 3rd 1 mm, 6th 2 mm, 7th 4.5 mm and 9th 8 mm shorter; 10th not measured; 3rd to 6th emarginated, 6th only slightly.

N. ELKINS.

(This is the second Scottish record of this warbler, which breeds in coniferous and mixed forests in central Asia. The first was seen on Fair Isle on 11th October 1966 (*Scot. Birds* 4: 454). At that time it was mentioned that this species was becoming more frequent in late autumn in England. No fewer than 18 Pallas's Warblers were recorded in the British Isles in the last fortnight of October 1968, an unprecedented invasion in view of the total of only 21 previous records (*Brit. Birds* 61: 577). An interesting paper, "Reversed migration as the cause of westward vagrancy in four *Phylloscopus* warblers," by J. Rabøl (*Brit. Birds* 62: 89-92) includes discussion of this species.—ED.)

Radde's Warbler on Isle of May

On 22nd October 1968 John Stewart found a large warbler with a conspicuous eyestripe at Ruff Green on the Isle of May. Later, G. R. Ekins and I found the bird again among nettles in this area, and saw that it appeared brownish with a long cream eyestripe bordered with dark brown. We erected a mistnet and caught the bird shortly afterwards.

Along with JS, Paul Harland and E. C. Harker we examined the bird in the hand. It was plump and lively, but we released it as soon as possible after photography and detailed examination. In general appearance it was a large phylloscopine, olive-green above with a brown crown, a long cream supercilium and a dark line through the eye, and white below with yellow streaks and buff flanks, orange-buff under tail-coverts and very pale legs.

The following detailed description was made:

Crown to nape brownish-olive, browner above supercilium; supercilium cream with orange tinge, extending to nape, slightly reflexed to rear in some attitudes; dark stripe through eye to nape; ear coverts dark brown, slightly speckled paler; whole upperparts olive green, tail and wing feathers with greenish fringes; if rump was lighter, only to very slight degree; chin, throat and belly white with faint lemon streaking; flanks yellow-buff with some faint orange streaks; under tail-coverts bright orange-buff; under wing-coverts very pale buff with orange-buff fringe distally from carpal joint. Upper mandible horn, lower mandible flesh colour; palate pale yellow; floor of mouth orange-yellow; four dark rictal bristles, proximal third lighter; large dark eye, lower eyelid pale cream; pale sandy legs and feet, yellow on sole of feet. Calls: in the hand, a sharp *tic*; in the field, a whiplash *quip*, *quip*—like small Quail but nasal in tone. Wing 65 mm; tail 50 mm; tarsus 25 mm; bill 15 mm from skull, 8 mm from feathers; 1st primary 11 mm longer than primary coverts; 4th primary longest, 5th almost as long; 2nd and 9th 9 mm, 3rd and 6th 1 mm, 7th 3 mm, 8th 5.5 mm, 10th 10 mm shorter; scallop-shaped notch on inner web of 2nd primary at about tip of 1st; 3rd to 6th emarginated.

The weather had been westerly since an easterly gale on 19th October, and we thought that the bird could well have been on the island for three days.

IAN F. STEWART.

(There is one previous record of this Asiatic species, also from the Isle of May (*Scot. Birds* 2: 367). All seven British records to the end of 1967 (1968 data not known) were in October (*Brit. Birds* 60: 327).—ED.)

Firecrests on Isle of May and in Shetland

At 1900 hours GMT on 11th June 1968 I drove the Low Trap on the Isle of May with P. Hayward and to our great surprise we found we had captured a Firecrest. It showed clearly the characteristics of the species, including uniform reddish-

orange centre of crown, white superciliary and black eye-stripe; and the golden tinge at the sides of the neck was striking. Southeast winds during the night, with thick mist before dawn, may have been responsible for the bird's presence. It was last seen on 13th June.

IAIN TAYLOR.

On 11th October 1968 on the southern side of Seafield, near Lerwick, Shetland, I had close views of a Firecrest. In size and appearance it was similar to a Goldcrest, but the upper-parts, particularly the back and rump, were a brighter green, and it had a bright white eyestripe. It did not call. I have seen many Firecrests in the south of England and in Spain, and I am also familiar with the species in the hand.

PETER K. KINNEAR.

(This is the same area of Shetland where a Firecrest was present between 11th June and 27th September 1965. These are the sixth and seventh Scottish records. Single birds have also been recorded on the Isle of May on 30th September-3rd October 1959, 22nd September 1960 and 7th October 1966, and in Orkney on 13th September 1967 (*Scot. Birds* 1: 153, 357; 4: 99, 356; 5: 224). This pattern corresponds with the establishment of a small population in Hampshire from 1961 (breeding first proved 1962) (*Brit. Birds* 59: 240).—ED.)

Pied Wagtails feeding on floating hay bales

On 13th September 1968 I was amused by the activities of a party of seven or eight Pied Wagtails beside the Tweed at Kelso. The river was in heavy spate, and there was a constant passage of bales of hay floating downstream.

As soon as a bale appeared upstream, the birds flew towards it and fought for possession, the successful bird driving off intruders. On several occasions three bales, each with a wagtail aboard, were visible. The birds floated perhaps $\frac{1}{4}$ mile downstream on the bales, feeding on insects, which must have been numerous on the dry upper surfaces, before flying back to the starting point to await the next bale.

R. S. BAILLIE.

Rose-coloured Starling on Iona

On 11th July 1968, while on a brief visit to Iona, my wife and I had excellent views of a Rose-coloured Starling which was feeding with six Starlings. Mrs D. E. Walters of the St

Columba Hotel, Iona, first saw this bird on 9th or 10th July, and it was last seen on 2nd August.

R. A. L. SUTTON.

(A full description has been submitted. We have also had details from Miss J. McFarlane, who saw the bird on 9th July.—Ed.)

Serin in Shetland

On 17th November 1968, at Scalloway, I was watching some Chaffinches in a willow about 30 yards away when I noticed a small bird with a yellow rump fly up from some long grass.

It perched briefly on a fence about 20 yards away, and then flew to the top of a 25 ft willow where it remained in view for a few seconds before flying on to settle on a flowering currant bush. I managed to walk to within 30-35 yards of it, and watched it for about five minutes through 10 x 50 binoculars in good light. It was a stubby bird, about the size of a Willow Warbler, with a brownish-yellow head and a very short bill. The chest was streaked brown and yellow, while the rump was bright yellow and the tail black. I saw no barring on the wings, and did not see the legs and feet.

When I referred to the *Field Guide* later I identified it as a Serin, although the bird I saw looked darker on the back than that shown in the illustration.

ROBERT DUTHIE.

(This is the first Shetland record of a species which is expanding its range in northwest Europe and is appearing more and more frequently in the British Isles.—Ed.)

Black-headed Bunting in Inner Hebrides

On 11th June 1968 near Loch Ardnave, Islay, we came upon a strikingly yellow-breasted bird, and watched it through our binoculars as it sat on telephone wires and on a wall. From its black head and neck, brilliant canary-yellow throat and breast and chestnut-brown nape we had no doubt that it was a male Black-headed Bunting.

R. H. BERRY, SETON GORDON.

(Though the identification is not in doubt there must be suspicion that birds of this species, like the Red-headed Bunting, are escapes.—Ed.)

Recent News

ANDREW T. MACMILLAN

This section is not an easy one to write. The vast bulk of material digested in the Scottish Bird Report 1968 in the summer issue of *Scottish Birds* shows the problem clearly. As we have said before, it is unsatisfactory to pack Recent News with details of rarities, thereby detracting from the interest of the fuller notes which come later, but equally it is difficult to produce worthwhile comment on other topics without a great deal of effort editorially and locally. Such duplication of the year-end effort (which already stretches our available resources to the limit) does not seem justified, and does not exactly fill us with enthusiasm, so it seems inevitable that Recent News will continue to be fragmentary and insubstantial.

Of last year's irruption species, **Great Spotted Woodpeckers** were still in Caithness in January and in Orkney in April, and likewise **Bullfinches** in Shetland in February and March had probably wintered there. After being seen at sea at the end of February, very much as in 1968, the **Black-browed Albatross** returned to the Bass Rock for a third summer.

Rare breeding birds continue their merry way. **Wrynecks** have been calling in new areas and we are hopeful that they may soon be added to the Scottish breeding list. **Snowy Owls** have nested again on Fetlar (6 eggs, 5 hatched) and with the 1968 birds remaining in the islands the Shetland population has been estimated at 15. **Redwing** nests are still being found in new districts, and what seems to be another breeding **Fieldfare** is under investigation. Three pairs of **Ospreys** each had two young in July (a fourth failed to hatch its eggs), and the RSPB reported at least another 20 **Ospreys** in Scotland at the time.

We are sometimes told that we should give more space to ringing, but apart from isolated recoveries of special significance the material is better dealt with by analysis of all records for one species rather than for one ringer. Statistics of birds ringed, as opposed to those recovered (which are the important ones), are of personal rather than public interest. Nonetheless, progress of the **North Solway Ringing Group** deserves to be more widely known. By Scottish standards this is a most active group. In the first six years (to the end of 1968) 24,326 birds of 109 species were ringed, including notable totals of Grey Lag Goose (166), Sparrowhawk (67), Kestrel (95), Lapwing (923), Black-headed Gull (1269), Barn Owl (49), Swallow (1511), Wren (293), Blackbird (1522), Willow

Warbler (2144) and Crossbill (18). The group operates two ringing sites. At one near Lockerbie 516 Rooks were caught in a single trap in February and March 1969—during February 16% of the birds were first-winter, but in March, when far fewer were caught, the proportion was 72%, indicating presumably a change in the behaviour of the breeding adults.

Obituary

MATT FORRESTER

(Plate 24)

The two old ladies at Woodend Lodge on the way down to Endrick Bank called Matt Forrester the Old Faithful because he had been coming about the place so long. His record of the Caspian Tern there appears in this issue; and last year, it will be remembered, he proved the Little Ringed Plover to breed in the Clyde area—another first for Scotland—following up the investigations of his friend Donald Stalker.

Matt was 58 when he died of a tumor on 24th March 1969 after seven weeks in Glasgow Royal Infirmary. His last bit of bird news, delivered to me with excitement a few days earlier, was of three Lesser Blackbacks at his window there. He left a bundle of diaries and notebooks spanning an interest in birds going back to his boyhood in Dennistoun, when horses and sheep grazed on the green banks of the Molindinar and he combined nest-finding with fishing for 'baggies'.

I remember how he told me with glee that he could get all the volumes of Thorburn's *British Birds* out on one library ticket. I recall too his amazing zeal for early rising, whether to comb the tops of the Cairngorms for Dotterel or to see what was doing on some Hebridean island. A natural loner, he paid the SOC a big compliment by joining it, for he hated organisations of any kind; yet he was persuaded to lead club outings to Hamilton and the Endrick, whence came so many of his published records. He was also a frequent visitor to Aberlady Bay.

Matt was a butcher in Lenzie. He liked his work, even though it gave him only Sunday and a Wednesday half-day for getting out. He took a bit of knowing, but those who did get to know him found a kindly, humorous and well informed character, enthusiastic on any matter relating to the countryside. Even in the declining health of the last two years he never lost his zeal. My last trips with him were to Flanders Moss and Loch Tay, just before he went into hospital.

This is not the place to talk of him as a mountaineer, which was his passion until the war. We explored the High-

lands together, in summer and winter, always combining climbing with birding. The drive that he put into hard routes was transferred to ornithology when he was demobbed, and future trips we did were usually focussed on birds.

Craggy-faced and ginger-haired, he served in the Scots Guards during the war, fighting and getting wounded in Tunisia—with the compensation of birds on migration over the desert and on the shores. Then came Anzio and capture by the Germans when only a few of the Battalion were left defending a position they had taken and waiting for relief which never came.

But the Army did him a good turn: on his release from Germany it posted him to the Solway, where he devoted himself to intensive birding. It was the mainstay of his life ever afterwards. He was a bachelor, and come Sundays and holidays he was away to his favourite haunts. It was the countryside as much as the birds he loved. He hated being indoors even for a day.

TOM WEIR.

Reviews

Ecological Adaptations for Breeding in Birds. By David Lack. London, Methuen, 1968. Pp. xii + 409; 21 line drawings by Robert Gillmor and 24 text diagrams. 24½ x 17 cm. 84/-.

For many years now ornithologists have been amassing information about the breeding habits of birds—clutch size, egg size, egg colouration, whether a species is monogamous or polygamous, colonial or solitary, how long the hatching and fledging periods are, and the age of first breeding, to name some.

The author, in what he rightly claims is primarily a work of interpretation, has linked these apparently unrelated facts into a fascinating and convincing story to show how, taken together, they are all adaptations which enable each species to raise the greatest possible number of young. Particular emphasis is placed on interpreting the facts by making comparisons between different groups of species. Natural selection is invoked as the agency by which the various adaptations have been brought about, a point which is perhaps open to dispute, especially amongst those who favour group selection or other theories which depart from the strictly Darwinian. Throughout the book, and notably in the chapter dealing with the growth rate of Procellariiformes, attention is drawn to unsolved problems and areas where knowledge is insufficient or lacking, but this in no way minimises the wealth of data on avian breeding biology encompassed within this broadly based survey. Indeed, the eighteen appendices on breeding biology would in themselves have made this book a valuable one for the professional or serious amateur ornithologist.

It unfortunately cannot be claimed that it is an easy book to read. Though not difficult to follow in content, there is a monotony of style and overmuch use of scientific nomenclature to make it enjoyable reading. This is not helped by the layout adopted, whereby each particular ecological group of birds is given separate treatment although the same principles are being applied in each case, inevitably giving rise to much repetition. However it is to be hoped that this will not deter people, for once the effort it made the book is rewarding. The line drawings by

Robert Gillmor, which illustrate various points made by the author, combine accuracy with charm and form a delightful addition to the text. The print is very clear too.

This book is perhaps a precursor of a new type of ornithological literature, with emphasis on the wider applications of knowledge already gained. Despite the reservations made about style it is one which most people with more than a superficial interest in ornithology would find useful to have on their bookshelves, both for the information it contains and for the pointers it gives to work still to be done.

D. R. GRANT.

The Problems of Birds as Pests. Institute of Biology Symposia No. 17. Edited by R. K. Murton & E. N. Wright. London and New York, Academic Press, 1968. Pp. xiv + 254; 12 plates and 45 text figs. 22¼ x 15¼ cm. 70/- (\$9.50).

On 28th and 29th September 1967 a galaxy of professional biologists held a symposium in London. Summary papers on the problems were presented by leading workers, and each session ended in general discussion. The material has now been edited and published. Inevitably there is variation in the level of contributions and discussion from the general to the technical, and parts of the book (radar mathematics in particular) will be beyond the grasp of all but a few specialists, but most of it is well within the capacity of the amateur ornithologist.

The first day was devoted to "Birds and Aircraft." The problems centre on preventing high-speed collisions, for a 4 lb bird strikes a 600 mph aircraft like a ton weight dropped 22 ft onto an area the size of the bird. Contributions covered the identification of bird hazards (and individual birds) by radar, warning systems, bird-scaring techniques such as the broadcasting of distress calls, and modification of habitat to make airfields less attractive to birds (one should not site things so that gulls flying to and from the local rubbish tip have to cross the path of aircraft). Apart from impact damage there is a great risk to an aircraft near the ground (landing or taking-off) if one or more of its jet engines is suddenly cut out by ingesting a flock of birds. The surprise is that more people have not been killed. The dangers are greater for low-flying military aircraft than for high-cruising commercial ones. A curious muddle in the captions to photographs on pages 5-6 suggests that navigators are regularly sacrificed in the development of bird-proof windscreens.

The second day was on "Birds and Agriculture," problems more familiar to the amateur: the Rook and agriculture (a Scottish contribution from Culterty Field Station), Woodpigeons, Oystercatchers and cockles, the fouling and infestation of buildings by Starlings, House Sparrows and feral pigeons, Bullfinches and fruit buds, and the Quelea in Africa. Methods of control (including the use of stupefying bait to catch the birds), the attitude of the general public, and predator-prey relationships were discussed. There is a certain amount of repetition and cross-reference in these papers but an almost universal agreement that simply killing the pest species is usually ineffective, since only a doomed surplus is taken from the population. Man is unable to maintain sufficient killing pressure on the Woodpigeon (or, for that matter, the Red Grouse) to depress its numbers more than temporarily and he must look for more subtle ways of controlling such problem species.

A neat example of the use of biological knowledge is provided by the Bullfinch. Dr Ian Newton has shown that after winters with a good crop of ash seeds (usually every second year) damage to fruit buds is slight, since the Bullfinches do not take many until March; but when the ash crops fails, seeds of any kind suitable for the Bullfinches are ex-

hausted much earlier and the birds feed mainly on fruit buds from January to May. The solution, which works, is to concentrate on killing Bullfinches in the autumn (not the spring, when they do the damage) in the years when there is a failure of the ash crop. Thus the limited supply of seeds lasts longer and the fruit buds will be spared. No permanent change is induced in the Bullfinch population, but the damage is greatly reduced by control at the right time.

It should not be thought that this symposium was in any sense anti-bird; in fact the most heated discussion evidently arose from the suggestion for an experimental kill of cockle-eating Oystercatchers. Birdwatchers do not normally think of their subjects as pests, but pests they can certainly be at times. As an interesting summary of current thinking on some of the points of conflict between man and birds this book is well worth reading, though the price suggests a scholarly rather than a popular market for it.

ANDREW T. MACMILLAN.

The Red Book: Wildlife in Danger. By James Fisher, Noel Simon, Jack Vincent and others. Collins, London, 1969. Pp. 368; 32 colour plates, 113 monochrome drawings, endpaper maps. 25¼ x 19 cm. 70/-.

Public opinion in developed countries, where life can be more than a basic struggle for food and survival, is coming to accept that total extermination of any creature is a bad thing. Most endangered species, however, have been brought to the verge of extinction more by accident than intention, because man has not foreseen the consequences of what he is doing. It is to remedy this ignorance and to provide a basis for intelligent conservation policies that the Survival Service Commission of the International Union for Conservation of Nature publishes the sheets of its Red Data Book, on which the present volume is based. Some 300 pages are divided equally between mammals and birds, while less than 40 cover reptiles, amphibians, fishes and plants, the only other groups considered at all. Such is the present state of knowledge.

This is no dry catalogue. Fascinating asides and background information may be found in the best of the species essays, and tactful encouragement of governments too. It may come as a surprise to learn that extinction is not a problem in Europe north of the Mediterranean; of 208 mammals and birds shown on the maps, only the European bison is marked in our area. With birds especially, extinction is very much a problem of oceanic islands, where the local fauna is particularly vulnerable to introduced species, especially domestic cats, rats and goats. Habitat destruction and disturbance, and hunting for food or sport or collection or vermin control, with improved weapons and transport, are among the factors mentioned time and again. Some relict species must disappear through evolution but the evidence is that man is responsible for the loss of three species for every one that disappears from natural causes.

At times he is unbelievably pig-headed, at times quite enlightened. One may contrast the absolutely disgraceful way in which whales have been brought close to extinction with the sensible cooperation over the polar bear. The well known success stories and current worries are here: orang utan, giant panda, Arabian oryx, Néné, Californian Condor, Monkey-eating Eagle, Manchurian and Whooping Cranes, Takahé, Ivory-billed Woodpecker. Some quite common species such as the Prairie Hen have crept in, and frequent preoccupation with scarce races of species that are in no danger also weakens the impact; one cannot get very worked-up over the threat to two out of 30 races of the white-tailed deer or one of 23 races of *Microtus pennsylvanicus*, and the article on

the Wren is concerned mostly with explaining that the St Kilda and Fair Isle races are in no danger at all.

The book is attractively produced and a pleasure to own. Its illustrations are taken from such diverse sources as Audubon and Brooke Bond, but there is a complete absence of reference in either direction between them and the text. Some of the classic pictures, particularly Audubon's Whooping Crane, are not suitable for bleeding off the page, and parts of the bird have been lost in the process, to the detriment of the picture. In spite of an explanation on page 362 that the information is in the Red Data Book it is frustrating that there is no key to the numerous authorities cited in the text; after all, one buys this book instead of the Red Data Book. Another doubtful economy is in the use of very small type for the index, in contrast to the most readable fount of the main text.

In spite of these mild criticisms this is a book to be recommended. Many of the species discussed are doomed, for time is not on their side. There is no magic that will save them. But a better understanding of what is happening and greater interest on the part of the public can only do good. Here are facts, so far as we know them, and recommendations, and lessons to be learned; on a world basis. Now we may see ourselves in perspective and know why species breeding on the edge of their range in Scotland, but widespread elsewhere, are less important than the faunas of the Seychelles or the Galapagos.

ANDREW T. MACMILLAN.

The Psychology of Birds. An Interpretation of Bird Behaviour. By Harold E. Burt. Illustrated by Peter Parnall. London, Collier-Macmillan, 1968 (Copyright, New York, 1967). Pp. 242; 11 full-page line drawings. 20½ x 14 cm. 55/-.

In the first chapter the author expresses the hope that he may stimulate the interest of the more general reader in the fascinating behaviour of birds, and make him aware of what is going on around him. In his enthusiasm he has tried to cram too much information about all aspects of bird behaviour into the book, and tends to give too many examples in abbreviated form. The material is presented like a series of expanded lecture notes, and I found it difficult to maintain interest. The author hops from one piece of information to another, and the text does not maintain the necessary stimulus which might encourage one to read on. The style, with numerous side headings and short sections, would have been more suited to a reference book. There is also too much repetition. On the other hand the text is cross-referenced to the bibliography, where the 'confirmed' ornithologist may find many works to interest him.

Dr Burt is a retired professor of human psychology and, taking his cue from this, in his last chapter he discusses individual differences in behaviour in a single species, a subject which, apart from aggressiveness, has received relatively little study compared with differences between species. It is a pity that he has not taken steps to study such variation himself experimentally. Indeed, in this complicated subject, he has drawn upon the work of many others but there is no reference to his own work in the bibliography. Applying knowledge of human psychology to bird studies could throw light upon bird behavioural mechanisms, but it is also fraught with dangers if not done with caution. Unfortunately the author has not always applied this caution and many of his interpretations of behavioural responses are questionable and unduly anthropomorphic.

N. C. MORGAN.

A Regional Guide to the Birds of Scotland. By W. Kenneth Richmond. London, Constable, 1968. Pp. 252; 55 photographs, 15 maps. 17 x 11¼ cm. 25/-.

The avowed aim of this book is to help the amateur birdwatcher to spend his time in Scotland more usefully and enjoyably than he might otherwise do. The author goes on to say that the professional ornithologist does not need this assistance, but this is being unduly modest. There can be few ornithologists, amateur or professional, who know the whole of Scotland so intimately that they can afford to scorn the assistance which this handy little book has to offer.

It commences with a list and brief description of the reserves, field study centres and ornithological societies in Scotland, with a useful select bibliography. For the main part of the book, the author divides Scotland into twelve regions, corresponding roughly with the familiar faunal areas. For each region he provides a description of the main habitats and comments on the status of the more interesting birds in each habitat. There is a great deal of useful information as to the most productive birdwatching localities and the best ways of working them and this is often supplemented by well drawn diagrams. These chapters vary considerably in quality. Those dealing with southern and central Scotland are excellent, and it is only occasionally that one is inspired to query some point of detail. For instance, is it really the case that the Wood Warbler is a typical bird of the highland pinewoods, and surely it is an overstatement to say that all four skuas are regularly recorded at Grangemouth, and that Temminck's Stint can be "expected" in the same area?

As he moves further afield, the author is obviously able to draw less on his personal experience and the results are less happy. One may guess that the author is least familiar with the Outer Hebrides, for this chapter contains a number of misstatements. The implication that Long-tailed Tit, Blackcap and Chiffchaff breed in Stornoway woods is not supported by any evidence known to this reviewer, though Chiffchaff may well be proved to do so before long. The large non-breeding Mute Swan population on Loch Bee is referred to as though it was a breeding colony, and the machair country of South Uist is too intensively farmed to be "thronged" with geese in winter, nor does it hold "impressive" herds of Whooper Swans as the author would have us believe.

The photographs illustrate 52 species, most of which can claim to be typically Scottish though one or two exotics, such as Cream-coloured Courser, have strayed in. Many of these photographs are not of the first quality, but they do nevertheless represent an impressive achievement as the work of one spare-time photographer. The maps have been imaginatively selected, although one must regret in a work of this kind that both the maps showing Scotland as a whole are cut short in the middle of Orkney. This is all the more galling because one of these maps shows the whole of England. Any right-minded birdwatcher would willingly sacrifice the whole of England for the sake of seeing Shetland in its proper perspective! But it is only on points of detail that one would try to fault this book. In general it can be thoroughly recommended, and to anyone visiting Scotland for the first time it can be fairly described as indispensable.

DOUGAL G. ANDREW.

Catalogus Faunae Graeciae. Edited by A. Kanellis. Part 2. Aves. By W. Bauer, O. v. Helversen, M. Hodge & J. Martens. German with English introduction, summary and index. Thessaloniki (Salonica, Greece), 1969. Pp. 203 + errata leaf; 2 maps. 24¼ x 17¼ cm. Paperback, DM 17.50 from Willy Bauer, 6 Frankfurt am Main, Schneckenhofstrasse, Federal Republic of Germany.

As a step towards a comprehensive work on the birds of Greece this checklist deals with 228 breeding species, 21 more which have bred or may do so, and 131 migrants and winter visitors. Though the text is in German the species are named in English and Latin as well, and translations of the principal terms and place names used in the systematic list are inserted in the English version of the introduction. Unfortunately there is no separate alphabetical list of these terms, so one must either construct one's own or memorise them.

The main text consists of summaries of status and seasonal abundance for each species, within the limits of available information; some parts of Greece are ornithologically quite unexplored and others have been rarely visited. The authors divide the country into eleven mainland and island regions for these summaries and give references and a full bibliography.

Greece is one of the most exciting places in Europe for a British ornithologist, and some of the species found there penetrate no nearer to Britain. Even in the context of a scientific catalogue, however, the authors feel compelled to call attention to the terrifying impoverishment of the avifauna in the past 25 years, through deforestation and drainage of swampy lowlands and river deltas. One must hope that this publication will provide impetus towards conservation of some of these vanishing habitats.

ANDREW T. MACMILLAN.

Ducks, Geese and Swans. Instructions to Young Ornithologists series No. 7. By John Welman. London, Museum Press (Brompton Library), 1968. Pp. 124; 8 plates (16 photographs), 29 figures. 21¼ x 14 cm. 20/-.

This book "attempts an all-round approach" to the subject of wild-fowl. Since the author includes in this remit all the world's swans, geese and ducks he sets himself a rather formidable task. Some 30 pages are devoted to general background topics, such as classification, structure and migration. Forty-six European wildfowl species are dealt with in a mere 40 pages and brief descriptions of a further 98 species (subspecies are ignored) are packed into the remaining 30 pages. Eight of the black-and-white plates illustrate British species (including the introduced Canada Goose and Mandarin Duck) and the text figures include line drawings of another 13.

In the general chapters a good deal of varied information is presented in an interesting and readable manner although certain topics, and especially habitats and feeding habits, receive scant attention. Despite a reference in chapter 1 to the amount of data on wildfowl ecology and distribution now available, little use has in fact been made of this material by the author. Particularly obvious indications of this neglect are the omission of *Wildfowl in Great Britain* from the bibliography on page 119, the absence of any mention of moult-migration in Shelduck, and the misleadingly inaccurate statements made about several of the European swans and geese.

Since this book is presumably intended for young ornithologists in this country, the inclusion of scrappy descriptions and distribution notes on non-European species seems pointless, particularly when this information (complete with coloured illustrations) is already available

in an inexpensive volume. The space occupied by these notes could have been used to much better advantage for expanding the descriptions of the British species; giving some account of recent wildfowl research; and providing more suggestions for lines of study which the young ornithologist might usefully pursue.

VALERIE M. THOM.

The Island. By Ronald [M.] Lockley. Illustrated by C. F. Tunnicliffe. Deutsch, London, 1969. Pp. 192; 10 line drawings, endpaper maps. 20 $\frac{3}{4}$ x 13 $\frac{3}{4}$ cm. 30/-.

R. M. Lockley has been writing about Skokholm for many years, and his books have been frequently reprinted, so that much of the material here is familiar, though now incorporating more recent notes from the island. But this is not intended as a deeply scientific book. It tells the pre-war tale of his life on this small Pembrokeshire island 30 to 40 years ago (yes, 40 years ago) and of his pioneer studies of Manx Shearwater, Puffin and other auks, Storm Petrel and rabbit.

The style is easy, and evocative of the charm of small islands at their best, and the writing is complemented by C. F. Tunnicliffe's delightful vignettes of birds and mammals and the island scene. Altogether an enjoyable book to read in bed or on a wet afternoon.

ANDREW T. MACMILLAN.

Enquiries

BTO Ornithological Atlas 1968-72. Thanks to the enthusiasm and hard work of Regional Organisers during the past winter and early spring it is hoped that 1969 will have seen extensive coverage in all populated parts of Scotland. During the late summer a considerable number of very useful reports has been received from visitors to the remoter areas of the west and north Highlands. It would be much appreciated if any outstanding 1969 records are sent as soon as possible to local organisers or to Mr Headlam. There will again be an exhibit at the SOC Conference, showing, as far as possible, the additional coverage in 1969.

Some 1968 cards had still not been received by late summer 1969, when Dr Sharrock had already completed preliminary work on the available 1968 records. Since there is no further need to seek species already recorded breeding in any particular square, it is most important, to avoid unnecessary paperwork and duplication of fieldwork later, that records should be sent in as soon as possible after the end of each breeding season.

Sincere thanks are due to Regional Organisers and Recorders and to those helping them, especially those who have managed to make Atlas records in addition to the arduous task of censusing seabirds for Operation Seafarer 1969.

C. G. HEADLAM, Scottish Coordinator
Foulis Mains, Evanton, Ross-shire.

The Scottish Ornithologists' Club

TWENTYSECOND ANNUAL CONFERENCE HOTEL DUNBLANE HYDRO, PERTHSHIRE

24th to 26th October 1969

Friday 24th October

- 5 to 7.30 p.m. Conference Office in the Hotel Dunblane Hydro opens
and 8 to 9 p.m. for members and guests to register and collect name
cards and Annual Dinner tickets.
- 6.15 p.m. Meeting of Council.
- 8.30 to 9.30 p.m. FILM AND SLIDE PROGRAMME in the Ballroom.
At 9.30 p.m. details of excursions on Saturday after-
noon will be given.
- 10 p.m. Meeting of Local Recorders.
- 9.30 p.m. to Lounges open for informal discussions and refreshments
midnight (late licence).

Saturday 25th October

- 8.45 to 9.15 a.m. Conference Office opens for registration.
- 9.20 a.m. Official Opening of Conference in the Ballroom.
ADDRESS OF WELCOME by Mrs S. H. Maclachlan,
J.P., Lady Provost of Dunblane.
- 9.30 a.m. LECTURE, "Recent changes in the environment and
some of their effects on British Birds" by Dr N. W.
Moore, Ph.D., M.A. (Head of Toxic Chemicals and Wild-
life Section, Monks Wood Experimental Station), fol-
lowed by a discussion.
- 11 a.m. INTERVAL for coffee and biscuits.
- 11.30 a.m. LECTURE, "The Heron and pollution," by Ian Prestt
(Toxic Chemicals and Wildlife Section, Monks Wood
Experimental Station), followed by a discussion.
- 1 p.m. INTERVAL for lunch.
- 2 p.m. EXCURSIONS by private cars leaving the Conference
Hotel car park. Details will be posted on the Confer-
ence notice board.
- 2.30 p.m. MEETING of members of the R.S.P.B. in the Ballroom,
to which all members of the Club and their guests are
invited.
- 6 p.m. 33rd ANNUAL GENERAL MEETING OF THE CLUB
in the Ballroom.
BUSINESS :
(1) Apologies for absence.
(2) Approval of Minutes of 32nd Annual General Meet-
ing of the Club held in Dunblane on 26th October
1968 (see *Scottish Birds* 5 : 238).
(3) Report of Council for Session 32.
(4) Approval of Accounts for Session 32.
(5) Appointment of Auditor.
(6) Election of new Office Bearers and Members of
Council.

The Council recommends the following elections :

A. Donald Watson as President of the Club to succeed Dr W. J. Eggeling who is due to retire having completed his three year term of office.

George Waterston as Vice-President to succeed A. Donald Watson.

Dr I. T. Draper and J. MacGeoch as new Members of Council to replace H. A. Maxwell and R. T. Smith who are due to retire by rotation.

- (7) Consideration of the following proposed amendment to the Constitution recommended by Council :

That under 3. MEMBERSHIP (e) "... The Annual Subscription shall be 25s; or 7s 6d in the case of Members who are under 21 years of age, ... Married couples shall be eligible for joint Membership at an Annual Subscription of 40s, ...", the subscription rates be altered from "25s; or 7s 6d" and "40s" to "40s; or 10s" and "60s" (Life Membership rates remain unaltered).

- (8) Any other competent business.

7.30 for 8 p.m. ANNUAL DINNER in the Diningroom of the Hotel Dunblane Hydro (dress informal).

Sunday 26th October

- 9.30 a.m. LECTURE, "Birds of the world : the conservation outlook," by Sir Hugh Elliott Bt., O.B.E., M.A. (Secretary of the Ecology Commission, International Union for the Conservation of Nature).
- 10.45 a.m. INTERVAL for coffee and biscuits.
- 11.15 a.m. PROGRAMME OF FILMS.
- 1 p.m. INTERVAL for lunch.
- 2 p.m. EXCURSIONS (informal), leaving Conference Hotel car park.

Conference Office

Outwith registration hours the Conference Office will also be open at intervals during the weekend for members to see the exhibits. A wide selection of new books from the S.O.C. Bird Bookshop will be displayed for purchase or orders. R.S.P.B. literature, Christmas cards, garden bird equipment and gramophone records will be on sale, and also a selection of B.T.O. literature and Christmas cards. A display of paintings by wild-life artists will be on sale in the Exhibition Room.

Film and Slide Programme

The programme from 8.30 to 9.30 p.m. on Friday evening is intended to give members and guests an opportunity of showing 2" x 2" slides or 16 mm films. These must however be submitted beforehand to the Conference Film Committee, and should be sent, by 10th October at the latest, to the Club Secretary, 21 Regent Terrace, Edinburgh EH7 5BT. The slides should be titled and sent with brief notes on what will be said about them, to enable the Committee to make a selection and to form a good programme. It will not be possible to show material which has not been received by this date.

INFORMATION

- (1) **Hotel Reservations.** All reservations must be made direct. Owing to the shortage of single rooms, members are urged to make arrangements to share a room with a friend.
- (2) **Conference Post Card.** It is essential that members intending to be present should complete the enclosed printed post card and send it to the Club Secretary not later than 20th October. Because of limited seating accommodation, the Council regrets that members may invite only one guest each to the Annual Dinner.
- (3) **Registration.** Everyone attending the Conference must register on arrival (10s each) at the Conference Office (for opening times, see Programme). Members attending only the Annual General Meeting do not require to pay the registration fee, which covers morning coffees and incidental expenses.
- (4) **Annual Dinner.** Tickets for the Annual Dinner (price 30s inclusive of red or white wine or fruit cup, and of gratuities) should be purchased when registering. Members and guests staying in the Conference Hotel pay for the Annual Dinner in their inclusive hotel account, but must obtain a dinner ticket from the Conference Office as all tickets will be collected at the Annual Dinner. No payment should be made in advance to the office in Edinburgh.
- (5) **Other Meals.** Dinner on Friday evening is served in the Conference Hotel from 6.30 to 9 p.m. Non-residents will be able to obtain lunch on Saturday or Sunday (12s 6d) by prior arrangement with the Hotel Reception desk.
- (6) **Swimming Pool.** The indoor swimming pool in the Conference Hotel will be available during the weekend at no extra charge.
- (7) **Excursions.** Members are asked to provide cars if possible and to fill their passenger seats; to avoid congestion in the car park the minimum number of cars will be used. Members wishing to go out on their own are particularly asked not to go out in advance of the led excursions to avoid disturbing the birds.

Hotels in Dunblane

Hotel Dunblane Hydro (Tel. 2551). Special Conference charge £8.0.0d, inclusive of 10% service charge, bed and all meals (except tea on Saturday afternoon) from Friday dinner to Sunday lunch, after-meal coffee, and the Annual Dinner (with wine or soft drinks). For less than a full day, bed and breakfast is 42s, lunch 12s 6d and dinner 18s 6d, all with additional 10% service charge. Rooms with private bathroom have a supplementary charge of 10s per person per day.

Stirling Arms Hotel (Tel. 2156). Bed and breakfast from 28s 6d to 30s.

Schiehallion Hotel, Doune Road (Tel. 3141). B & B from 22s 6d to 27s 6d.

Neuk Private Hotel, Doune Road (Tel. 2150). B & B from 23s to 25s.

Ardleighton Hotel (near Hotel Dunblane Hydro gates) (Tel. 2273). B & B from 25s to 27s 6d.

Hotels in Bridge of Allan

Allan Water Hotel (Tel. 2293). B & B from 45s to 62s 6d.

Royal Hotel (Tel. 2284). B & B 47s 6d.

Prices except for the Conference Hotel are provisional and should be confirmed.

DUNDEE BRANCH WINTER EXCURSIONS

Sunday 5th October 1969 VANE FARM RESERVE.

Sunday 9th November LINRATHEN LOCH and BACKWATER DAM.

Sunday 7th December TENTSMUIR.

Sunday 11th January 1970 EASTHAVEN.

Sunday 8th February KILCONQUHAR LOCH and ELIE.

Sunday 22nd March STORMONT LOCH and the FIVE LOCHS.

Sunday 26th April RESCOBIE and BALGAVIES LOCHS.

All excursions leave City Square, Dundee, at 10 a.m. by private cars. Those requiring transport should contact the Branch Secretary, Miss Jenny Stirling, 21 Johnston Avenue, Dundee.

SUBSCRIPTIONS, COVENANTS AND BANKER'S ORDERS

Your subscription for the new session is now due and should be sent at once with the enclosed form to the Club Secretary or paid to the Branch Secretaries. The Winter number of the journal will only be sent to paid-up subscribers.

If you pay income tax at the full rate and have not already signed a seven-year Deed of Covenant, this is a way you can help the Club funds at no extra cost to yourself, as the tax we are allowed to reclaim on a subscription of 25s is nearly 18s. If only 50% of our members signed Covenants the Club would gain an annual income of about £775, which could be used to give increased services through the journal and other publications, Conferences and lectures, and in many other ways. May we invite you to use the enclosed form, which should be sent on completion to the Secretary, who will forward a Certificate of Deduction of Tax for signature each year.

A Banker's Order is enclosed for the use of members who find this a more convenient way of paying the annual subscription, and it will also help to lessen the administrative work in the Club office; this should be returned to the Secretary and not to the Bank.

EDINBURGH BRANCH MEETINGS

Members please note—ALL meetings of the Branch will start at 7.30 p.m.

THE SCOTTISH ORNITHOLOGISTS' CLUB

THE Scottish Ornithologists' Club was founded in 1936 and membership is open to all interested in Scottish ornithology. Meetings are held during the winter months in Aberdeen, Ayr, Dumfries, Dundee, Edinburgh, Glasgow, Inverness, St Andrews, Stirling and elsewhere at which lectures by prominent ornithologists are given and films exhibited. Exhibitions are organised in the summer to places of ornithological interest.

The aims and objects of the Club are to (a) encourage and direct the study of Scottish Ornithology in all its branches; (b) co-ordinate the efforts of Scottish Ornithologists and encourage co-operation between field and indoor worker; (c) encourage ornithological research in Scotland in co-operation with other organisations; (d) hold meetings at centres to be arranged at which Lectures are given, films exhibited, and discussions held; and (e) publish or arrange for the publication of statistics and information with regard to Scottish Ornithology.

There are no entry fees for Membership. The Annual subscription is 25/-; or 7/6 in the case of Members under twenty-one years of age or in the case of University undergraduates who satisfy the Council of their status as such at the time at which their subscriptions fall due in any year. The Life subscription is £50. Joint membership is available to married couples at an Annual subscription of 40/-, or a Life subscription of £75. "Scottish Birds" is issued free to members but Joint members will receive only one copy between them.

The affairs of the Club are controlled by a Council composed of the Hon. Presidents, the President, the Vice-President, the Hon. Treasurer, the Editor of "Scottish Birds," the Hon. Treasurer of the House Fabric Fund, one Representative of each Branch Committee appointed annually by the Branch, and ten other Members of the Club elected at an Annual General Meeting. Two of the last named retire annually by rotation and shall not be eligible for re-election for one year.

A Scottish Bird Records' Committee, appointed by the Council, produce an annual Report on "Ornithological Changes in Scotland."

An official tie in dark green, navy or maroon terylene, embroidered with small crested tits in white, can be obtained by Members only from the Club Secretary, at a cost of 17s 6d. A brooch in silver and blue is also available to Members, price 3s 6d, from the Club Secretary or from Hon. Branch Secretaries.

The Club-room and Library at 21 Regent Terrace, Edinburgh EH7 5BT, will be available to Members during office hours, and on Wednesday evenings from 7 to 10 p.m. during the winter months. Members may use the Reference Library, and there is a small duplicate section, consisting of standard reference books and important journals which can be lent to students and others wishing to read a particular subject. A lending section for junior Members, which is shared with the Young Ornithologists' Club, is also available.

Forms of application for Membership, copy of the Club Constitution, and other literature is obtainable from the Club Secretary, Major A. D. Peirse-Duncombe, Scottish Centre for Ornithology and Bird Protection, 21 Regent Terrace, Edinburgh EH7 5BT. (Tel. 031 556 - 6042).

NOTICE TO CONTRIBUTORS

1. General notes (not of sufficient importance to be published on their own as Short Notes) should be sent to the appropriate local recorders for inclusion in their summary for the annual Scottish Bird Report, not to the editor. A list of local recorders is published from time to time, but in cases of doubt the editor will be glad to forward notes to the right person. All other material should be sent to the editor, Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12. Attention to the following points greatly simplifies the work of producing the journal and is much appreciated.

2. If not sent earlier, all general notes for January to October each year should be sent to the local recorders early in November, and any for November and December should be sent at the beginning of January. In addition, local recorders will be glad to have brief reports on matters of special current interest at the end of March, June, September and December for the journal. All other material should of course be sent as soon as it is ready.

3. All contributions should be on one side of the paper only. Papers, especially, should be typed if possible, with double spacing. Proofs will normally be sent to authors of papers, but not of shorter items. Such proofs should be returned without delay. If alterations are made at this stage it may be necessary to ask the author to bear the cost.

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

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

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

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

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

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

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

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

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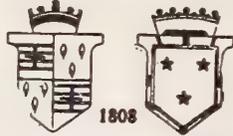
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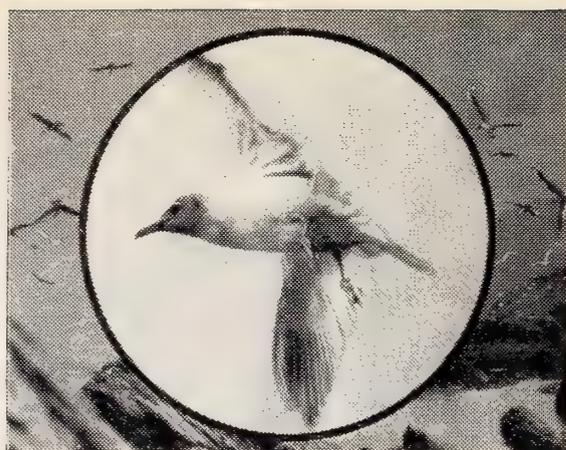
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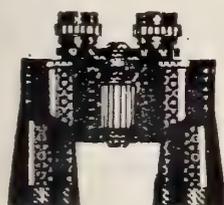
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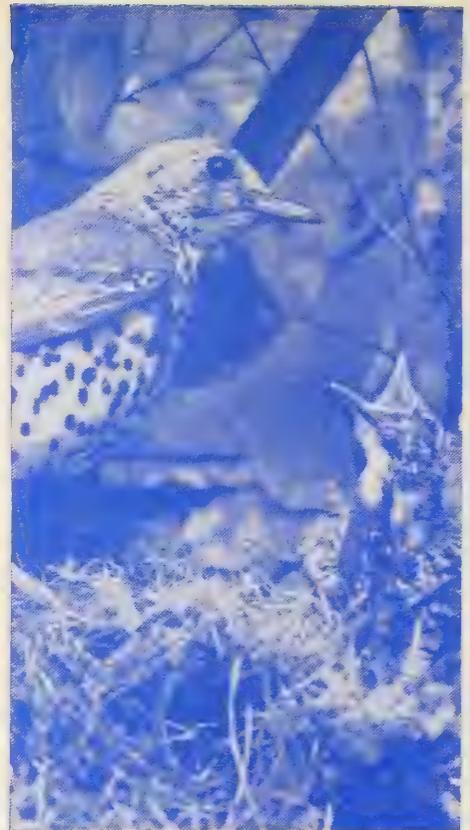
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Edited by A. T. Macmillan, 12 Abinger Gardens, Edinburgh, EH12 6DE
Assisted by D. G. Andrew
Business Editor Major A. D. Peirse-Duncombe, Scottish Ornithologists' Club, 21 Regent Terrace, Edinburgh, EH7 5BT (tel. 031-556 6042)

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SCOTTISH BIRDS

THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB



Vol. 5 No. 8

Winter 1969

Edited by A. T. Macmillan, assisted by D. G. Andrew

Editorial

New Fair Isle Bird Observatory. We have already reported on the building of a new bird observatory on Fair Isle and commended the appeal for funds to support the project.

On 18th October 1969 a light aeroplane shuttled to and from Sumburgh with official guests for the opening ceremony, performed by Lord Wemyss, Chairman of the National Trust for Scotland. Thereafter the fog came down and stranded them on the island, as if to prove that air travel is not always the most convenient, even if it is now quite a feature of life on the island, with Loganair making nearly 100 flights in and out this summer. Inscribed pewter tankards were presented to the warden, Roy Dennis, and his wife Marina to mark this important event.

The new buildings stand ready to receive you. There are four single and four double bedrooms, and two six-berth dormitories for the young at heart. Bedding is provided, and meals on a self-service basis; all you have to do is make your bed, tidy your room (no dishwashing) and enjoy yourself. You can charter an aeroplane and travel in comfort. So book now for 1970.

Some pictures are included in this issue (plates 28-31), and the latest brochure may be had from 21 Regent Terrace, Edinburgh.

Seabird deaths. As we write this towards the end of October there has been a great deal of publicity in the press and on radio and television about a wreck of seabirds on the west coast. The largest numbers have been in Ayrshire, but there are reports from as far apart as Inverness-shire, north Wales, the Isle of Man and Northern Ireland. A total approaching 10,000 is mentioned, 60% Guillemots, with smaller numbers of Cormorants, Shags, Puffins, Gannets, Razorbills and other species. The birds mainly came ashore with gales in the last week of September 1969 and were in a weak and emaciated condition. Oil pollution was responsible for only some

of the deaths, and the underlying causes of the wreck are being sought now. Mould, gales and food shortage have been suggested, but analyses have revealed startling residues of a possible new environmental pollutant in bodies from Ayrshire and north Wales. This is a widely used group of industrial chemicals called polychlorinated biphenyls (PCBs for short) of which we may well be hearing more. All records and information about the wreck are urgently required and should be sent to A. G. Stewart, Branahue, 31 St Andrew's Avenue, Prestwick, Ayrshire.

ECY 1970. Natural history organisations all over the country are completing their plans for European Conservation Year 1970. Readers in the Edinburgh area will be interested in a series of films on the general theme of "Nature and Man." These are being shown by Chris Mylne, Publicity Officer of the Scottish Wildlife Trust, in association with the Edinburgh Film Guild, at 3 Randolph Crescent, Edinburgh. Admission is by ticket (less than 20/- for the series) from the Film Guild. The titles are "Man the Despoiler" (12 Feb), "Man the Preserver" (26 Feb), "Scottish Wildlife Problems" (12 Mar), "Water and Wildlife" (26 Mar), "The Forest Habitat" (9 Apr), and "Man's World" (23 Apr).

Scottish Bird Report 1969. There can be no need to remind contributors that all notes for the first ten months of 1969 should by now be in the hands of local recorders; those for November and December should follow very early in January. Please try not to be the one who holds thing up by sending his notes late; there is all too little time to process them anyway. And if you also double-check the dates of your observations you will indeed be doubly blessed.

There is one change in the list of local recorders, John Edelsten having now taken on Nairn, Moray and Banff, and the full list is:

- Shetland (except Fair Isle)** R. J. Tulloch, Reafirth, Mid Yell, Shetland.
Fair Isle R. H. Dennis, Bird Observatory, Fair Isle, Shetland.
Orkney E. Balfour, Isbister House, Rendall, Orkney.
Outer Hebrides (except St Kilda) W. A. J. Cunningham, Aros, 10 Barony Square, Stornoway, Isle of Lewis.
St Kilda Dr I. D. Pennie, Bonhard Place, Bo'ness, West Lothian.
Caithness D. M. Stark, 2 Harland Road, Castletown, Thurso, Caithness.
Sutherland, Ross-shire (except Black Isle) D. Macdonald, Elmbank, Dornoch, Sutherland.
Inverness-shire (within 18 miles of Inverness), Ross-shire (Black Isle only) Dr Maeve Rusk, Arniston, 51 Old Edinburgh Road, Inverness.
Inverness-shire (mainland more than 18 miles from Inverness) Hon. D. N. Weir, English Charlie's, Rothiemurchus, Aviemore, Inverness-shire.
Nairnshire, Morayshire, Banffshire J. Edelsten, 14 South High Street, Portsoy, Banffshire.
Aberdeenshire, North Kincardineshire N. Picozzi, Nature Conservancy,

- Blackhall, Banchory, Kincardineshire, AB3 3PS, and W. Murray, Culterty Field Station, Newburgh, Aberdeenshire, AB4 OAA.
- South Kincardineshire, Angus** G. M. Crichton, 23 Church Street, Brechin, Angus.
- Perthshire** Miss V. M. Thom, 19 Braeside Gardens, Perth.
- Kinross-shire** J. H. Swan, Vane Farm Reserve, Kinross.
- Isle of May** Miss N. J. Gordon, Nature Conservancy, 12 Hope Terrace, Edinburgh EH9 2AS.
- Fife (east of A90)** D. W. Oliver, 4 Lawview Cottages, Abercrombie, St Monance, Fife.
- Fife (west of A90), Clackmannanshire, East Stirlingshire** T. D. H. Merrie, West Faerwood, Stirling Road, Dollar, Clackmannanshire.
- West Lothian** Dr T. C. Smout, 19 South Gillsland Road, Edinburgh EH10 5DE.
- Forth Islands (except May), Midlothian** R. W. J. Smith, 33 Hunter Terrace, Loanhead, Midlothian.
- East Lothian, Berwickshire** K. S. Macgregor, 16 Merchiston Avenue, Edinburgh EH10 4NY.
- Peeblesshire, Roxburghshire, Selkirkshire** A. J. Smith, Glenview, Selkirk.
- Clyde faunal area, North Argyllshire, Skye, Inner Hebrides** Prof. M. F. M. Meiklejohn, 16 Athole Gardens, Glasgow W2.
- Dumfriesshire** J. G. Young, Benvannoch, Glencaple, Dumfriesshire.
- Kirkcudbrightshire, Wigtownshire** A. D. Watson, Barone, Dalry, Castle Douglas, Kirkcudbrightshire.

Boundaries are shown in 'The Birds of Scotland'. Note that Skye and the Hebrides are treated separately from the counties in which they lie.

Brain drain. We are indeed sorry to lose another fine assistant editor down the high road to England. It is little more than a year since we welcomed Mike Everett to *Scottish Birds* but in that time his advice and assistance, particularly with Short Notes, have been most welcome and valuable. We send him our good wishes in his new RSPB job as assistant reserves manager.

Index Ornithologorum. The editor of *The Ring* is planning to publish an index of the professional and amateur ornithologists of the world. Entries, in English, should be sent to him at the Laboratory of Ornithology, Sienkiewicza 21, Wroclaw, Poland, with an International Postal Reply Coupon, giving surname, other names, year of birth (optional), title, positions held (including editorships, memberships), principal interest in ornithology, address, titles of your most important ornithological publications if you are an author, and saying whether you will buy a copy of the index at a reasonable price. The editor is anxious that the index should embrace as many ornithologists as possible.

Current literature. Recent Scottish material includes:

- Preliminary counts of birds in central Highland pine woods.
A. Watson, 1969. *Bird Study* 16: 158-163.
- Little Gulls in Scotland. J. R. Furse, 1967. *Sea Swallow* 19: 18-26.

BTO Ornithological Atlas 1968-72

By the time of the SOC Annual Conference at Dunblane it was clear that the promise of a nationwide contribution during 1969 had been fulfilled. Out of a total of just under 1100 10-km squares in Scotland and the Islands, we got good cover for about 200 in 1968 and for over 320 more by the end of October 1969. The true figure for 1969 will be much higher when late cards are all in, including records from two major counties not available for Dunblane. In addition a great deal has been added for squares partly covered in 1968, and much work has been done on little-visited islands and remote coastlines during Operation Seafarer. The real achievement in 1969 is significantly higher than could be shown at Dunblane under the description "square cover good."

This has been done by all sorts of people, by enthusiasts from the Northern and Western Isles to remotest Galloway and the Borders, and by local effort from Skye to the populated and more closely organised areas of Central and Eastern Scotland, as well as by visitors from south of the Border. All these contributions, and the amount of work done in the field and in writing up records, are deeply appreciated.

With the experience gained during 1969 it will be found comparatively easy to get a lot more done in coming seasons with little more use of time and effort, as those who started in 1967 (pilot scheme) and 1968, in Scotland and elsewhere, will know. Time will be needed in 1972, and preferably 1971, to record difficult species and to cover remoter areas (even in one's home square). With so many common species to deal with we must aim to record all these, at least in home squares, during 1970. This will allow time during the winter 1970/71 to assess the gaps in coverage, and species difficult to record, so that the information can be passed back before the summer of 1971. This may appear to be an ambitious target for 1970, but it seems quite realistic to those aware of the full picture.

The sheer number of records makes a good deal of paperwork for Regional Organisers and Recorders. This can be cut to the minimum if people look a little harder, walk a little further, or even wait a few minutes longer to record proved breeding behaviour rather than "present in possible breeding habitat." This expression of "regard for your next astern," and sending in records promptly at the end of the summer, will make a lot of difference to those who have taken on responsibilities for recording or organising cover on a regional basis.

Foulis Mains, Evanton, Ross-shire.

C. G. HEADLAM.

Wintering duck in Scotland 1962-68

VALERIE M. THOM

Introduction

Regular counts of wildfowl in Britain were started in 1948 to assess the status and distribution of the various species and to determine whether any were in need of protection. Much of the material collected by 1962 was used in the Nature Conservancy Monograph *Wildfowl in Great Britain*, the first comprehensive review to be based on recorded figures. Earlier publications, of which Berry's *Status and Distribution of Wild Geese and Wild Duck in Scotland* and Baxter & Rintoul's *Birds of Scotland* are the most important, had depended, in the absence of factual information, on subjective assessments of numbers.

Wildfowl in Great Britain consisted largely of detailed reports on individual waters. It is not proposed to repeat these here but rather to review present knowledge of wintering duck in Scotland and to draw attention to those areas and species which most require further investigation. The data obtained during 1962-68 have therefore been used (1) to determine the distribution of the different species, (2) to follow the variations in numbers which occur both within the winter season and from year to year, and (3) as a basis for ecological discussion.

This paper is of necessity based on *recorded* facts and figures. Many Scottish ornithologists will have data which supplement or contradict some of the statements made. It is hoped that these people will be encouraged to make such information available so that it may be put on permanent record and used to fill in further details in the picture of Scotland's wintering duck.

Material, methods and limitations

The Wildfowl Count Scheme is based on regular mid-monthly counts, from September to March, on a wide range of waters. Additional counts, at irregular intervals, are also made at less important or less accessible sites. Within the scheme, attention is concentrated, through a system of 'priority counts', on those waters known to carry large numbers of duck (more than 500 Mallard, 750 Wigeon, 300 Teal, 200 Tufted Duck or 200 Pochard). Since 1967 all January counts have been included in the International Wildfowl Censuses and a special effort has been made to ensure widespread observer-cover during January.

In the period 1962-68 regular counts were made on more

Table 1. Distribution of Wildfowl Counts in Scotland 1962-68

	Counted regularly (at least two seasons)		Counted occasionally		Total
	Fresh waters	Tidal waters	Fresh waters	Tidal waters	
Solway	19	7	6	3	35
Border	3	0	31	0	34
Clyde	22	12	38	13	85
Tay-Forth	60	12	71	19	162
North	18	21	34	10	83
Orkney-Shetland	15	2	6	9	32
	137	54	186	54	431

Summary

Counted regularly 191, occasionally 240
Freshwater 323, tidal 108

than 190 Scottish waters (fresh and tidal) and occasional counts on a further 240 (table 1). The first section of this paper is based largely on these counts but also includes records published in *Scottish Birds* and elsewhere. Reference to earlier records is made only where no recent information is available or where conditions have changed markedly. The figures used for examining seasonal and annual changes are drawn mainly from the priority count waters, while the ecological discussion uses both priority count and International Census data. The priority count data have previously been used only to examine annual changes in numbers, and as yet no detailed analysis of the International Census data has been published.

The validity of any survey of status and distribution depends upon the adequacy of observer-cover throughout the area under review. In Scotland considerable variations in coverage occur and these are discussed below in relation to the geographical regions. The reliability of the actual counts varies between observers and species (Atkinson-Willes 1963, p. 5) and also between habitats (e.g. small waters are more accurately counted than large ones, and open waters than those surrounded by marsh). Sea ducks present particular problems, since satisfactory counts can only be made when there is good light, a calm sea and preferably a high tide—a combination which is unlikely to occur on very many of the 'official' count dates. Even when these conditions do exist, estimates of large flocks well offshore may be very inaccurate (Milne 1965). These considerations, together with the fact that many sea ducks frequent the more inaccessible coasts and islands of the north and west, result in the information for this group being much less complete than for other species.

Although the main periods of immigration, passage and emigration are covered by the Wildfowl Count season, some arrivals take place before September and some departures after mid March. Since counts made outwith the winter are rarely reported these movements are inadequately documented and cannot be included in an examination of seasonal changes in numbers.

In Scotland, wintering flocks of some species include both native and foreign birds, and passage migrants may also occur. As it is not possible to distinguish between these groups, the counts indicate only the relative numbers of a species present at different times and do not reflect changes in the proportion of native to immigrant birds. The interpretation of annual fluctuations in numbers is consequently very difficult, if not impossible.

Scottish wildfowl habitats

In section 1 of this paper, species distribution is discussed in relation to the geographical regions shown in fig. 1. The regions, most of which include two or more faunal areas, are those used by the Wildfowl Trust in analysis of the International Census data. The principal habitats, the extent of observer-cover in 1962-68, and the species for which each region was important during this period are described below.

Solway. The tidal waters of the Solway Firth provide the most important habitat in this region, which has few fresh waters carrying large numbers of duck. Numerous small wetlands exist in both agricultural and moorland areas and most of these probably hold Mallard and Teal. The proportion of these species counted is therefore likely to be lower in Solway than in eastern Scotland, where small resorts are relatively less important. Observer-cover in Solway has improved in recent years but is still far from complete. This region holds the largest Pintail flock in Scotland and is also important for Teal, Wigeon and Shelduck.

Border. There are no estuaries and few major freshwater sites in this region, which consequently holds comparatively few duck. Regular observer-cover is confined to one site, and some wetlands of local importance are not at present counted.

Clyde. Although there are numerous lochs and reservoirs in Clyde, many are situated in moorland or mountainous districts and comparatively few are known to hold large numbers of duck. The river itself is of only minor importance, possibly owing to heavy industrial pollution and a limited shallow-water area. This region has not been well covered by observers in the past and additional counts made during the International Censuses have already drawn attention to

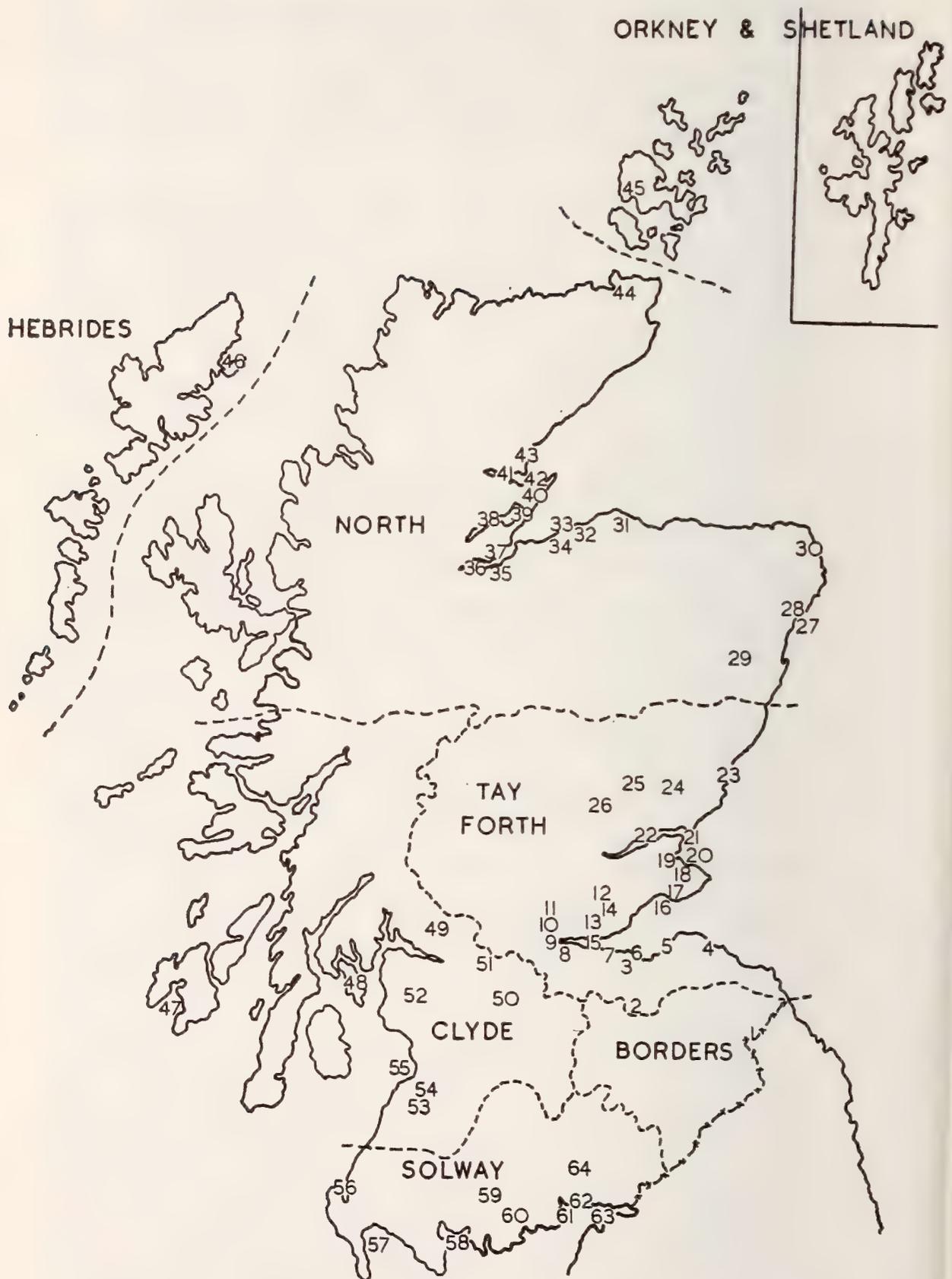


FIG. 1. Wildfowl count regions and sites in Scotland. In the key opposite 'priority count' sites are denoted by capitals.

several locally important sites which had previously been overlooked. During the period under review no wildfowl concentrations of national importance were recorded in Clyde.

Tay-Forth. This region contains a large proportion of Scotland's best wildfowl habitats—shallow, eutrophic lochs, tidal mudflats and estuarine waters with abundant animal life—and the greatest density of wildfowl. Regular counts are made at nearly all major sites and many minor ones. Important concentrations of Mallard, Teal, Pintail, Shoveler, Scaup, Tufted Duck, Pochard, Goldeneye, Velvet and Common Scoter, Eider, Red-breasted Merganser and Shelduck occur there, the assemblies of Scaup, Pochard and Eider being the largest in Britain.

North. Much of the country north of the Highland Line is mountainous, with lochs which, because they are either very

-
- | | |
|--|---|
| 1 HIRSEL | 33 Culbin Bar |
| 2 MOORFOOT RESERVOIRS
(Gladhouse-Rosebery-Edgelaw-
Portmore) | 34 LOCHS LOY and CRAN |
| 3 DUDDINGSTON and LOCHEND | 35 LONGMAN BAY |
| 4 TYNINGHAME ESTUARY | 36 SOUTH BEAULY FIRTH |
| 5 ABERLADY BAY | 37 Munlochy Bay |
| 6 SEAFIELD | 38 Cromarty Firth |
| 7 ALMOND ESTUARY | 39 Nigg Bay |
| 8 LINLITHGOW LOCH | 40 LOCH EYE |
| 9 GRANGEMOUTH-KINCARDINE
BRIDGE | 41 SKIBO ESTUARY |
| 10 TULLIBODY-KENNET PANS | 42 WHITENESS |
| 11 GARTMORN DAM | 43 LOCH FLEET |
| 12 LOCH LEVEN | 44 LOCHS HEILEN and ST JOHNS |
| 13 LOCH FITTY and Town Loch | 45 LOCHS HARRAY, STENNESS
and BOARDHOUSE |
| 14 LOCH ORE | 46 Broad Bay |
| 15 CULTNESS | 47 Loch Indaal |
| 16 Largo Bay | 48 LOCHS ASCOG, GREENAN and
'AMBRISBEG' |
| 17 KILCONQUHAR LOCH | 49 ENDRICK MOUTH |
| 18 CAMERON RESERVOIR | 50 HAMILTON LOW PARKS |
| 19 EDEN ESTUARY | 51 LENZIE LOCH |
| 20 St Andrews Bay | 52 CASTLE SEMPLÉ and BARR
LOCHS |
| 21 Mouth of R. Tay | 53 SHANKSTON, BARN SHEAN
and CROOT |
| 22 INVERGOWRIE BAY | 54 MARTNAHAM, SNIPE and
FERGUS |
| 23 MONTROSE BASIN | 55 Ayr Bay |
| 24 FORFAR LOCHS
(Forfar-Rescobie-Balgavies) | 56 Loch Ryan |
| 25 LINRATHEN and KINNORDY | 57 Luce Bay |
| 26 BLAIRGOWRIE LOCHS
(Stormont-Marlee-Clunie) | 58 WIGTOWN BAY |
| 27 YTHAN ESTUARY | 59 LOCH KEN |
| 28 SLAINS LOCHS | 60 CARLINGWARK |
| 29 LOCH OF SKENE | 61 Carse Bay |
| 30 LOCH OF STRATHBEG | 62 CAERLAVEROCK |
| 31 LOCH SPYNIE | 63 Priestsie Bank |
| 32 FINDHORN BAY | 64 CASTLE, HIGHTAE and KIRK
LOCHS |

large and deep, or shallow and acid, are little used by wild-fowl. Large gatherings of duck are therefore confined to the coastal belt, especially the farmland of east Aberdeenshire and the shores of the Moray Firth. Observer-cover in this region has improved recently but there are still many stretches of the north and west coasts about which little is known. The area holds important gatherings of Mallard, Wigeon (in autumn), Pintail, Goldeneye, Red-breasted Merganser and Goosander.

Orkney and Shetland. Many of Orkney's freshwater and brackish lochs are surrounded by farmland and carry substantial numbers of duck. In contrast, much of Shetland is peat-covered and barren, with few fresh waters of importance. Little information is available on the wintering sea ducks of either island group but the region is probably important for Long-tailed Duck and Eider.

Outer Hebrides. This region includes large areas of both fresh and tidal water but since virtually no counts have been made for many years little is known about the current wild-fowl situation.

Section 1. Species status and distribution

The locations of the Scottish priority count waters, and of some other large concentrations of duck, are shown in fig. 1, and a general picture of species distribution *in midwinter* is given by the results of the 1968 January census summarised in table 2. It must however be emphasised that these figures are greatly influenced by the adequacy, or otherwise, of observer-cover. This is particularly so with the sea ducks, as is apparent from the small number of Eiders recorded in Orkney and Shetland. The Solway duck population is also under-represented (owing to foot-and-mouth-disease restrictions in force at the time), while the absence of any figures for the Outer Hebrides reflects a dearth of counters rather than ducks. Despite these limitations it is clear that the Tay-Forth region is the most important for both dabbling and diving ducks—a situation reflected by the density of priority count points in the area (fig. 1).

It is not possible at present to estimate total numbers of the commoner species, but some assessment of the relative abundance of the dabbling and diving ducks can be made, and a range, or maximum, for the less common species can be suggested. Mallard and Wigeon are the most abundant dabbling ducks, with Teal third, appreciably less numerous. Pintail and Shoveler maxima are probably 3000-4000 and 2000 respectively, while Gadwall seldom exceed 150-200. Diving ducks are less numerous as a group than the dabblers, and Scaup is by far the most abundant diving species. Tufted

Table 2. Numbers and distribution of duck counted in Scotland mid-January 1968

The number of sites counted in each region is given in parenthesis

	Solway (23)	Border (25)	Clyde (81)	Tay-Forth (124)	North (75)	Orkney- Shetland (18)	Total (346)
Dabbling Ducks							
Mallard	2807	1032	6095	27827	10689	1417	49867
Teal	652	219	1188	1033	2471	172	5735
Gadwall	2	—	—	1	2	—	5
Wigeon	4430	70	2563	6141	15372	1910	30486
Pintail	427	2	14	250	469	—	1162
Shoveler	18	4	19	10	4	—	55
	8336	1327	9879	35262	29007	3499	87310
Diving Ducks							
Scaup	711	—	129	21223	78	111	22252
Tufted Duck	117	26	1346	3680	818	572	6559
Pochard	50	23	575	6066	275	567	7556
Goldeneye	112	50	860	2963	661	174	4820
	990	99	2910	33932	1832	1424	41187
Sea Ducks							
Long-tailed	—	—	—	360	65	69	494
Velvet Scoter	—	—	—	2623	321	5	2949
Common Scoter	14	—	16	3666	595	—	4291
Eider	—	—	1457	4974	2014	21	8466
	14	—	1473	11623	2995	95	16200
Sawbills							
Merganser	31	—	161	298	48	6	544
Goosander	23	8	29	38	102	—	200
Smew	2	—	1	1	—	—	4
	56	8	191	337	150	6	748
Shelduck	343	—	618	2113	596	—	3670

Duck, Pochard and Goldeneye numbers are much smaller and of roughly similar size. Data on the sawbills and sea ducks are too incomplete to allow a worthwhile assessment to be made.

In the summaries of species distribution which follow, the statements regarding the origin of foreign birds are based on the ringing evidence tabulated in appendix 1.

Mallard *Anas platyrhynchos*.

Wintering flocks of Mallard include native birds, in substantial numbers, and immigrants from Scandinavia, the Continent and Iceland. This species occurs on a larger proportion of Scottish waters, and in a greater variety of habitats,

than any other, and is numerically the most abundant. There are comparatively few very large concentrations, however, and widely scattered smaller flocks contribute largely to the total.

The eastern half of the country holds most of the wintering Mallard and the five inland sites known to carry more than 1000 for several consecutive months all lie within 30 miles of the east coast. The most important resort is the Loch of Strathbeg, which has often held 2000-4000 Mallard (with a peak of 6500 in December 1965). Lintrathen Reservoir carries between 2000 and 3500 (with a peak of 4000 in January 1966), and the limited information for Loch Leven suggests a winter level of 1500-3500. The only other fresh waters where more than 1000 Mallard are recorded regularly are the Gladhouse-Rosebery-Edgelaw-Portmore group of reservoirs and the Forfar-Rescobie-Balgavies lochs. Sites which occasionally carry this number include, in the east, Kilconquhar Loch, Cameron Reservoir, Loch of Skene, Carsebreck and Drummond Pond; in the north, Lochs Harray, Stenness, Heilen and St John's, Watten and Eye; and in the west, the Bute lochs—both Loch Greenan and the "Ambrisbeg" complex of Quien, Fad and Dhu. Counts of Mallard on mainland lochs in western Scotland have seldom exceeded 500.

Less information is available for estuarine and coastal waters than for inland resorts. Estuaries are important in hard weather, and maximum numbers were generally recorded between December and February (at many inland sites, numbers reach their peak in October or, more often, November). Flocks of over 1000 Mallard occur in most seasons at Invergowrie Bay, the Eden Estuary and the Almond Estuary, and occasionally on the Carron-Avon foreshore of the River Forth. Large flocks formerly visited the Grangemouth-Alloa stretch further upstream, but numbers there have decreased progressively since 1963 (see section 3). Counts from other estuarine sites (Aberlady Bay, Tynninghame Estuary, Montrose Basin, Ythan Estuary, Beaully, Cromarty and Dornoch Firths, and several points on the Solway) are generally of less than 500 birds, though totals of over 1000 sometimes occur.

Flocks of Mallard seen off rocky coasts are presumably roosting or resting. Counts are not often made at such sites (since they are frequently difficult or unrewarding) but they can be useful in indicating the numbers which feed in adjoining landward areas, and are probably most worthwhile in districts where safe inland roosts are scarce in relation to available feeding grounds. Such conditions occur in Aberdeenshire, Angus, East Lothian and Fife (where 1700 Mallard were recorded off Boarhills and 2500 off Methil in January

1968), and contrast with the situation in southwest Scotland, where the many seldom-disturbed pools and bogs provide both feeding and resting grounds for numerous small flocks of Mallard and Teal.

Teal *Anas crecca*

Both native birds and visitors, from Iceland, Scandinavia and the Continent, are represented in the wintering flocks of this species, which shows a marked onward passage, to the south and west, in midwinter. Teal are probably the least accurately counted of the dabbling ducks, owing to their liking for cover and their tendency to occur in small parties on minor wetlands. In Scotland, flocks of less than 250 birds make up the bulk of the counted population, and large gatherings are recorded only occasionally, in most cases when drought, or frost, has driven the Teal into an exposed situation.

Large flocks formerly visited the Tullibody Island-Kennet Pans stretch of the Forth, but numbers there have dwindled from a peak of 4390 in November 1962 to a maximum of less than 300 in 1967-68 (see section 3). The only other resort where a flock of over 1000 Teal has been recorded during the last six seasons is Caerlaverock in the southwest (1700 in January 1967).

In the north, counts of 250-500 are frequently recorded from the shores of the various firths, and from the larger freshwater lochs. Flocks of this size occur less often in the Tay-Forth region, where, except for Loch Leven (500-1000) and the upper Forth (300-550), counts rarely exceed 250. In Clyde too, large flocks are uncommon and are regularly recorded only at the Endrick mouth; in Solway numbers are probably substantial but flocks are generally small; in Shetland Teal are scarce; and in Orkney the lochs of Harray and Stenness are the only waters where more than 100 are noted at all frequently.

Gadwall *Anas strepera*

This species, which breeds at Loch Leven (25-40 pairs) and occasionally elsewhere, is the scarcest of the dabbling ducks. No foreign-ringed birds have yet been recorded in Scotland.

In 1962-68 Gadwall occurred frequently at Cameron Reservoir, Kilconquhar Loch and Loch Ore, and less often on Lochs Gelly and Fitty (all in Fife), suggesting that birds disperse in various directions from the Loch Leven colony. Elsewhere on the mainland this species is scarce and irregular, and few have been recorded recently in Kincardineshire and Kirkcubrightshire, where small numbers formerly occurred regularly. There are some records from the Outer Hebrides and these may involve either local breeders or Icelandic birds (some of which have been recovered in Ireland).

Wigeon Anas penelope

Wintering flocks of Wigeon consist largely of immigrants, many of Icelandic origin but also including birds from Scandinavia and the USSR. The native population is comparatively small. In contrast to Mallard and Teal, a large proportion of the Wigeon occur in comparatively few large flocks mainly on the northern estuaries.

Flocks of 3000-5000 Wigeon have been recorded in many of the bays around the Cromarty, Beauly and Moray Firths, and in autumn 15,000-18,000 probably frequent the Cromarty Firth alone. Substantial numbers also occur on Lochs Eye, Spynie and Strathbeg, and on the Slains group near Newburgh, at all of which flocks occasionally exceeded 1000.

Wigeon are much scarcer in Tay-Forth, where the Eden Estuary (maximum 750) and Montrose Basin (maximum 2000) are the only tidal waters of importance. In this region fresh waters hold a larger proportion of the birds than elsewhere, with Loch Leven and Lintrathen Reservoir carrying about 1000 and several other inland sites around 500.

In Solway, tidal resorts again hold the biggest numbers of Wigeon, and flocks of more than 1000 are recorded at Caerlaverock, Wigtown Bay and Loch Ryan. Flocks of this size also occur, though less regularly, on Lochs Ken, Kinder, Soulseat and Magillie. Smaller flocks are usual in Clyde, Loch Greenan in Bute and a stretch of the Ayrshire coast near Hunterston being the only areas where more than 1000 have been counted. In Orkney, at Lochs Harray, Stenness and Tankerness, flocks generally contain less than 500 birds, while in Shetland only small numbers are recorded.

Pintail Anas acuta

Virtually all wintering Pintail are immigrants, since only scattered pairs breed in Scotland. Ringing evidence suggests that many of the visitors come from Iceland.

All the important Scottish Pintail waters are estuaries, with extensive mudflats exposed at low tide and covered by shallow water at high tide. Many fresh waters are visited occasionally by small groups of Pintail but not many are used either regularly or by more than a few birds. Exceptions include Loch Ken (25-50 regularly and a maximum of 170 in December 1967), Hamilton Low Parks (maximum 45) and the Bute lochs (20-30). A record of 256 on Lochs Soulseat and Magillie presumably refers to birds from the nearby Luce Bay.

By far the largest gatherings of Pintail occur in the Solway Firth (maximum recorded 2300 in November 1967), where Carse Bay and Southernness, Wigtown Bay and Luce Bay are particularly favoured spots. The flocks move regularly about

the estuary, and only coordinated counts along extensive stretches of shore can produce reliable estimates of the numbers present.

Substantial flocks of Pintail are also recorded on the Grangemouth-Tullibody Island stretch of the Forth (maximum 440 in December 1963) and in the Moray Firth area, where numbers have reached 340 at Longman Bay, and 380 at Nigg Bay and Edderton Sands in Cromarty. Other tidal resorts used regularly by this species are Montrose Basin (maximum 150) and the Eden Estuary. Flocks of up to 100 Pintail occurred on the Eden in the 1950s but recent counts there have not exceeded 40.

Shoveler Spatula clypeata

The numbers of native Shoveler are small, and wintering flocks consist largely of immigrants from the Continent, and possibly also from Scandinavia. This species, which shows a strong preference for shallow, eutrophic waters, has a limited distribution in Scotland, where it is mainly an autumn passage migrant. Fewer than 20 of the counted waters are visited regularly by any number of Shoveler, and flocks seldom exceed 100.

Strathbeg, with a September-October maximum of 140 in 1967, is the only important resort in the north. In Tay the Forfar lochs, Kinnordy, Stormont and Morton Lochs are all regular haunts, and small numbers of Shoveler sometimes overwinter on these waters. A substantial late-summer influx has been recorded recently at Kilconquhar Loch (maximum 250 in August 1964) and large autumn flocks have also occurred at Loch Leven (maximum 400 in October 1966). Numbers on Cameron Reservoir and Duddingston Loch rarely exceed 50, while the flocks which used the Eden Estuary in the 1950s have apparently ceased to visit the area.

In the west during 1962-68, regular counts of more than 25 Shoveler were made only on Lochs Lomond, Castle Semple and Barr, and Ken. There is an isolated record of 100 on Loch Rutton in October 1962, but there have been no recent reports of any numbers in Wigtown Bay or Hamilton Low Parks, where flocks of over 100 were recorded in the 1950s.

Scaup Aythya marila

The Scaup wintering off Scottish coasts are largely, perhaps entirely, of Icelandic origin, apart from the few native birds.

The assembly at Seafield, in the Firth of Forth, which has increased substantially in recent years, greatly outnumbers the smaller flocks recorded elsewhere. In the six seasons under review, peak counts at Seafield were 6000, 8500, 9500, 9500, 11,000 and 15,500 respectively, and it was estimated that 30,000 were present in December 1968. Small parties of Scaup

occur occasionally as far upriver as Grangemouth and, more frequently, off the Almond Estuary.

Recent counts from the Eden and Tay Estuaries have seldom exceeded 200-300, though there is an isolated report of 2500 in St Andrews Bay in January 1966. Few Scaup move any distance up the Tay, and 150 at Broughty Ferry early in 1963 was an unusually large number there. At the Ythan Estuary and in Findhorn Bay, Scaup occur regularly, but only in small parties, while in the Cromarty Firth slightly larger flocks have been noted (maximum 500). The brackish Loch of Stenness holds 200-400, but this species is only casual on freshwater lochs in Orkney, as elsewhere.

Reports from the Solway refer to flocks of 2200 near Southerness in February 1965, and an estimated 3000 in the Firth in 1966. Loch Ryan and the upper Firth were the most favoured areas. Records from the Clyde are sparse, but some 170 Scaup were counted at Langbank and the Helensburgh-Cardross stretch in January 1968. Little recent information is available for Islay, where flocks of up to 1500 formerly occurred, but there are reports of 800 there in November 1963, and 600 in November 1968. Elsewhere around the coast, records refer only to small numbers or irregular visitations.

Tufted Duck *Aythya fuligula*

Native birds make a substantial contribution to the wintering flocks of Tufted Duck, which also include immigrants from Iceland, Scandinavia and the Continent. In contrast to Scaup and Pochard this species occurs mainly in small to medium-sized flocks and seldom in large concentrations. Most lowland fresh waters hold Tufted Duck during at least part of the season but gatherings of over 1000 birds are rare, and flocks of 500-1000 uncommon. The largest counts are made during hard weather, when flocks of up to 2300 have been recorded on the upper Forth.

All the waters where large numbers of Tufted Duck are known to appear regularly lie on the eastern side of the country, and most are in Tay-Forth. Surprisingly the wintering population on Loch Leven, the most important breeding site for Tufted Duck in Scotland, is small. The dispersal of the large autumn population takes place in October and November (only three Tufted Ducks remained on the loch on 15th November 1967) and, since much of Loch Leven is shallow and freezes readily, midwinter numbers are controlled mainly by the weather. Recovery to the breeding-season level of about 1000 birds apparently does not start until late March or early April. Ringing and wing-tagging of Loch Leven Tufted Ducks has shown that though they disperse in all directions their main movement is a southwesterly one to N. Ireland.

In 1962-68 flocks of 200-300 Tufted Duck occurred commonly on many lochs in Tay-Forth, and at some, such as Kilconquhar Loch and Gartmorn Dam, numbers sometimes exceeded 700. When driven off fresh waters by ice, Tufted Duck gather on the Forth at Kennet Pans and on the Tay near Dundee.

In the north the lochs of Skene and Strathbeg hold the largest flocks, with numbers occasionally exceeding 750, while counts elsewhere are generally under 200. Both Harray and Stenness Lochs in Orkney carry substantial numbers of Tufted Duck, but there has been some decrease at Harray in recent years. In Clyde and Solway this species is comparatively scarce and most counts are of under 150 birds, although numbers on some of the reservoirs in Renfrewshire and Dunbartonshire occasionally reach 300-400.

Pochard Aythya ferina

Few Pochard breed in Scotland, and wintering flocks consist almost entirely of immigrants from the Continent. The distribution of this species has changed markedly since *Wildfowl in Great Britain* was published, and this change has centred on Duddingston Loch. Up to 1962 the peak count recorded at Duddingston was 2500; since then it has increased progressively to reach 8000 in December 1967. No comparable increase has taken place elsewhere in the country, and numbers in Orkney appear to be decreasing.

The build-up of the Duddingston flock is of particular interest, since Pochard do not feed there and are apparently attracted to the loch solely as an undisturbed roost. The birds leave the loch each night after dark, so that location of their nocturnal feeding grounds is difficult, but since their flight line is to the northeast perhaps they feed on the Forth. By day, flocks of several hundred have been recorded at Seafield and off the Fife coast, at Methil and Largo Bay. Pochard are generally described as vegetarian, resorting to brackish or salt water only when driven from fresh waters by ice, so this large flock, apparently feeding by choice on tidal water, deserves further study.

Even without the Duddingston flock, Tay-Forth is the most important region for Pochard in Scotland. Most lochs in the area hold Pochard at least occasionally, and flocks of more than 1000 have been recorded on Dunfermline's Town Loch, Kilconquhar and Loch Leven, while numbers have reached 250-500 on Linlithgow, Fitty, Gelly, Kinghorn and Rescobie. The possibility of movement to and fro across the Forth is suggested by the marked fluctuations in Pochard numbers which occur on Kilconquhar Loch and some of the lochs and reservoirs around Cowdenbeath, Dunfermline and Kirkcaldy. For example, in December 1967 there were 8000 Pochard on Duddingston and only 276 on the Town Loch, Dunfermline:

by January 1968 the Duddingston count was down to 2100, but 2800 were present on the Town Loch.

Substantial numbers of Pochard are found in Orkney, where they have been recorded on most of the waters counted, except Stenness, which is brackish. The largest flocks are on Harray, but numbers there have decreased from an annual peak of over 1000 in the early 1960s to a maximum of 510 in 1965-68. Flocks of more than 250 have also occurred on Boardhouse and Kirkibister Lochs, and of more than 100 on Skail, Echnaloch and Tankerness.

In the north, only Lochs Heilen and St John's in Caithness, Loch Eye in Easter Ross, and Lochs Skene and Strathbeg in Aberdeenshire, hold large numbers of Pochard. During the period under review Strathbeg was the most important of these five, with an autumn peak of more than 1500 in four of the last five seasons, and a maximum count of 2764 in November 1965.

Castle Semple Loch, the only Clyde water known to hold regularly a Pochard flock of any size, has seldom given counts exceeding 100 in recent years. A flock of 295 was recorded, however, on Castlehill Reservoir (also in Renfrewshire) in January 1968, and more Pochard may occur in this region on waters which are not regularly visited.

In Solway and the Borders, Pochard are not plentiful and flocks rarely contain more than 50 birds. The highest counts made recently in the south of Scotland have been on Loch Milton (up to 120) and Loch Ken (up to 85), where numbers have increased over the past few winters.

Goldeneye Bucephala clangula

Wintering flocks of this species, which does not breed in Britain, originate in northern Scandinavia. Although Goldeneye are widely distributed on the lochs and rivers of Scotland, all the large concentrations occur on tidal waters, generally near sewer outfalls or distilleries.

On the Forth at Seafeld, and in the Cromarty Firth at Invergordon, numbers have regularly reached 1000-1500, and a peak of 2500 was recorded at Seafeld in 1963-64. Further up the Forth numbers are influenced by weather, and in severe winters have sometimes reached 500-700 on the Kennet Pans-Tullibody Island stretch. Flocks of over 500 birds also occur occasionally off Methil, Fife, and between Stannergate and Monifieth on the Tay, while smaller groups, of 100-200 birds, have been noted in Invergowrie Bay, off Buddonness, and in Peterhead Bay. Numbers are usually small in the Beaully Firth, and in Clyde and Solway, but larger flocks, of 200-300 birds, frequent Ayr Bay.

On most fresh waters Goldeneye numbers are small, often

less than 25 birds, and few lochs regularly hold many of this species. Sizeable populations occur on Gladhouse Reservoir (over 100); Loch Leven (150-250 and occasionally more); the lochs of Skene (200-300) and Strathbeg; Heilen, Stenness, Harray, Tankerness and Ken, and the Bute lochs (100-200). At Kilconquhar numbers during much of the season are under 50, but in most years there has been an increase in February and March to give peak counts of 200 or more.

Long-tailed Duck *Clangula hyemalis*

All wintering birds of this species are immigrants, but as no ringed birds have yet been recovered in this country their origin is not known with any certainty. Long-tailed Ducks occur mainly in small flocks scattered around the coast, from the Forth north to Shetland and among the western isles. Although essentially a marine species in winter, odd individuals sometimes occur on inland waters.

Most records of Long-tailed Ducks refer to parties of less than 50, and many to under 15 birds. Larger flocks have been recorded off Aberlady Point (100 in March 1963), Joppa-Seafield (762 in March and 370 in April 1964), Methil (423 in March 1967 and 300 in January 1968), Tentsmuir (200 in November 1967), the Ythan Estuary (208 in December 1967), Ratray Head (240 in November 1967), Nairn (60 in February 1963), Loch Fleet (200 in January 1965), on the Loch of Stenness (which carries a regular wintering flock of 50-150), and off Lewis (about 500 in December 1964).

Long-tailed Ducks appear to be scarcest in Clyde and Solway, the only records of more than a few birds from these areas being from Ayr Bay, where up to 41 have been counted.

Velvet Scoter *Melanitta fusca*

Wintering flocks of Velvet Scoter consist entirely of immigrants, most of which probably come from Scandinavia. The status of this species, which occurs only on salt water, is difficult to assess. Most reports refer to groups of less than 50 birds, but much larger flocks are occasionally recorded. The difficulty of distinguishing between Velvet and Common Scoters in mixed flocks and at long range might be partly responsible for these variations.

Velvet Scoters are seen more often off the east coast, from the Forth to Orkney, than in the west. They are recorded most regularly from the Findhorn Bay-Culbin Bar area (peak counts of 170 in February 1965 and 320 in January 1968), and St Andrews Bay (a maximum of 2600 in January 1968). Numbers in the Forth are generally small, but there is a report of "hundreds" passing Aberlady Point in late March 1963. Records from elsewhere refer only to small numbers.

Common Scoter *Melanitta nigra*

A few Common Scoters breed in Scotland but most of the wintering birds are immigrants. There is no ringing evidence of their source but it is probable that they come mainly from Iceland.

Common Scoters are more widely distributed than the last species, but the most regular reports, and the largest counts, are again from east coast waters. St Andrews Bay is the most important resort known, with large flocks occurring regularly and a peak count of 6000 in January 1966. Numbers are variable in the Forth, up to 500 being recorded at Seafield in some seasons and very few in others. Flocks of up to 500 are also occasionally noted off Methil. Lower down the Firth, at Aberlady and Tynninghame, numbers are usually under 200, but there are records of more than 5000 off Gullane on 17th March 1963, and "thousands" at Aberlady six days later.

Further north, flocks are smaller, with counts of 200 off Montrose (September 1965), 568 at the Culbin Bar (January 1968) and 1000 off Loch Fleet (January 1965). Small parties of Common Scoter are occasionally noted in Ayr Bay, but the only regular west-coast flock is in Solway, where up to 200 have been counted in Luce Bay, and a further 200-300 off Southernness.

Eider *Somateria mollissima*

British Eiders are resident and there is no evidence to suggest that any immigration occurs. Some movement into the Forth of birds from northeast England does however take place in winter.

The most important wintering ground in Scotland is at the mouth of the Tay. Accurate counting is difficult, but numbers there have been estimated at 10,000. Few Eiders move far up the Tay, and numbers in St Andrews Bay have not exceeded 750 in recent years. Flocks of 100-200 occur at various places off the Fife coast, and in the lower Firth of Forth at Tynninghame and Aberlady, where August counts have reached over 4000. At Seafield the peak count (maximum 2800 in February 1966) generally falls between December and February. The records for the Forth area as a whole suggest a gradual autumn movement into the Firth as far as Seafield, and a corresponding reverse movement in early spring. Ringing returns have shown that Eiders from the Farne Islands, as well as Scottish birds, take part in these movements.

Further north, scattered flocks of several hundred birds are recorded at Montrose, the Bay of Nigg, Aberdeen Harbour, and the Ythan Estuary, where the midwinter population (generally 700-1000) is appreciably lower than the September-October peak. Many of the Eiders from this

stretch of coast winter at the mouth of the Tay.

There are a number of records from Peterhead, the Caithness, Sutherland and Argyll coasts, and the northern isles. In the Loch Fleet area up to 600 have been counted, but the other reports all refer to parties of less than 100 birds. Few Eiders appear to winter in the Moray Firth.

In Clyde numbers are slightly higher, with counts of 440 between Helensburgh and Cardross, 422 in Loch Fyne, and 150 in Campbeltown Loch (all in January 1968), and up to 500 around Bute. The flock of Eiders which moults off the Ayrshire coast reaches its peak in early autumn (1260 off Hunterston in September 1965), and midwinter totals there are much smaller. There have been no recent winter records of more than a few Eiders in Solway.

Red-breasted Merganser *Mergus serrator*

Wintering flocks of this species include both native and Icelandic birds. Although frequently breeding on fresh water, Red-breasted Mergansers are almost entirely marine in midwinter. In many areas the largest flocks are seen in July-September, and numbers are smaller during the wild-fowl count season.

The only areas where large flocks are known to winter regularly are the Forth and the Beaully Firth. In the Forth numbers are highest west of Bo'ness, where flocks of 200-300 have often been recorded. Red-breasted Mergansers were much more numerous than usual there late in 1968, when 1700 were counted off Grangemouth on 17th November, and 1500-1750 (probably the same flock) between Longannet and Culross on 21st December. Further down-river counts have only occasionally exceeded 100.

No regular counts have been made recently on the north side of the Beaully Firth, but there is a report of more than 630 Red-breasted Mergansers there in November 1962. Along the south shore the count has exceeded 100 on only one occasion during 1962-68.

Elsewhere on the east coast, winter numbers are generally small, though larger flocks are sometimes seen (e.g. 400 off Tentsmuir in October 1963 and 400 off Montrose in September 1967). In the northern isles and the north mainland, most reports refer to parties of less than 20 birds, but larger flocks occur occasionally in Orkney, where up to 100 have been counted in Echnaloch Bay. A flock of 216 noted in Broad Bay, Lewis, in September 1964, is the only recent record from the Western Isles. Many of the west-coast sea lochs probably carry flocks of 10-50 Red-breasted Mergansers, judging by reports from the Oban area.

Information from Clyde is sparse, but there is a report

of 400 Red-breasted Mergansers flying past Ardmore Point in November 1962. In Bute, totals of 25-75 have been noted, but the few other records all refer to small parties, the biggest count being 28 between Otter Ferry and Inveraray, on Loch Fyne, in January 1968. Only small numbers of this species winter off the Ayrshire coast, where flocks have rarely exceeded 30 birds, and it seems to be even scarcer in Solway.

Goosander *Mergus merganser*

Both native and Scandinavian birds are represented in wintering flocks of this species. In Scotland, Goosanders are most frequently seen on fresh water, both lochs and rivers, where they generally occur in very small parties, but the one site where large numbers are known to congregate regularly is the tidal Beaully Firth. In recent years flocks of 350-550 Goosanders have been counted there, with a maximum of 800 in February 1965. Sizeable flocks also occur occasionally in the Cromarty and Dornoch Firths (e.g. 400 in Dingwall Bay in December 1967 and 100 in Tain Bay in October 1966).

Inland, numbers are very variable, even on those waters where Goosanders are recorded most regularly, and only three reports in the last six seasons refer to more than 50 birds (53 on Castle Loch, Dumfriesshire, in February 1964; a moulting flock of 56 on Loch of Lowes, Perthshire, in September 1965; and 65 on Strathbeg in September 1967).

Goosanders appear to occur more often in Dumfriesshire, Kirkcudbrightshire and Perthshire than elsewhere, and to be scarce on fresh waters north of the Moray Firth.

Smew *Mergus albellus*

This species is a scarce and irregular visitor to Scotland. Records seldom refer to more than single birds; adult males are very much in the minority; and some seasons produce many more reports than others. Most recent records have been detailed in *Scottish Birds*.

Shelduck *Tadorna tadorna*

Winter flocks of this species are believed to consist entirely of native birds, many of which make a late-summer moult migration to the Heligoland Bight. The Shelduck's distribution in Scotland is determined by the limited availability of its preferred habitat (soft intertidal mud containing snails), and in midwinter the bulk of the population is concentrated at a few specially favoured sites. In January the birds start dispersing slowly to the breeding areas, and by March Shelduck are much more widely distributed than in midwinter. Most of the adults leave for the moulting grounds during

June and July, but the birds of the year may remain near the breeding sites until September-October when, presumably, they move to the main wintering areas and join the returning adults.

Shelduck are sometimes seen on fresh water in winter (they breed at several inland sites), but generally only in small groups. Some of the inland records may perhaps represent birds resting during a coast-to-coast flight.

The biggest winter concentrations of Shelduck occur in east-central Scotland, especially on the upper Forth. In 1962-68 January numbers in the Grangemouth area generally exceeded 1000, and reached 1600 in 1968. Other important resorts in this region are the Eden Estuary (400-700 between January and March, and a maximum of 1200 in February 1963), and the Montrose Basin (200-400 regularly and 414 in February 1963). At many summer sites, such as Aberlady and Invergowrie Bays and the Tynninghame and Ythan Estuaries, Shelduck are scarce or absent in midwinter.

In Solway the wintering flock, which is usually concentrated in the Priestside-Caerlaverock area, appears to reach peak numbers later than does the Forth flock. Data are still rather sparse, however, and more coordinated counts, similar to the one which produced a total of 1740 in February 1967, are needed to confirm this impression.

Information for Clyde is patchy but a report of 533 Shelduck between Cardross and Helensburgh in January 1968 suggests that this may be the main wintering site in the region. Few Shelduck are recorded on the Ayrshire coast in early winter, but after January numbers increase both there and northwards into Argyll.

In the north of Scotland the largest winter flocks recorded are in Munlochy Bay (250-350 and a maximum of 600 in March 1967), Nigg Bay (100-240), Alness Bay (100-150), and Longman Bay (usually about 100 but a peak of 225 in January 1964). Numbers at Munlochy sometimes remain high until March, but at the other three resorts dispersal starts in February. At this time Shelduck reappear or increase in other areas, such as the Nairn Bar, Beaully Firth, Tain and Dalmore Bays, Edderton Sands, Skibo Estuary and Loch Fleet. Winter records from Orkney are few, and all refer to parties of less than six birds.

Other species

The following species have occurred in Scotland as vagrants or casual visitors in the period September 1962 to March 1968. Full details of these records have already been published in *Scottish Birds*.

- Garganey** *Anas querquedula*. Two March records (from Fife and Kirkcudbright), two in September (Islay and Shetland), two in October (Fife and Dumfriesshire) and several 'summer' records (April-August).
- Green-winged Teal** *Anas crecca carolinensis*. Winter records from Inverness-shire, Renfrewshire and Lanarkshire/Dunbartonshire.
- Blue-winged Teal** *Anas discors*. One report from Orkney in November 1966.
- American Wigeon** *Anas americana*. Records from Inverness-shire and Shetland, including one of a Canadian-ringed bird shot in Shetland in October 1966.
- Red-crested Pochard** *Netta rufina*. Reports from Aberdeenshire, Midlothian and Perthshire.
- Ring-necked Duck** *Aythya collaris*. The first Scottish record—in Inverness-shire in 1963.
- Surf Scoter** *Melanitta perspicillata*. Reports from Orkney, Lewis, the Moray Firth, Fife, Kirkcudbrightshire and Wigtownshire.
- Harlequin Duck** *Histrionicus histrionicus*. Reports, possibly referring to the same pair, from Shetland and Caithness early in 1965.
- King Eider** *Somateria spectabilis*. Several Shetland records and one from Aberdeenshire.

The possibility that some of these birds (especially the *Anas* species and *Netta rufina*) had escaped from collections cannot be entirely ruled out. A Ruddy Duck *Oxyura jamaicensis* reported in Fife in 1965 was undoubtedly an escape.

A small feral flock of Mandarin Duck *Aix galericulata* is established on the River Tay at Perth.

Section 2. Numerical variations

In this section an attempt is made to elucidate the two types of numerical variation occurring among Scottish wintering ducks: seasonal fluctuations, dependent largely on the timing of the arrival and departure of winter visitors; and year-to-year changes in numbers, influenced in some species by breeding success in this country as well as by the size of the immigrant influx.

Seasonal fluctuations

In examining monthly variations in numbers, only data from waters with a complete run of counts from October to March can be used, and one must hope that these reflect trends over Scotland as a whole. With the commoner species (Mallard, Teal, Wigeon, Tufted Duck and Pochard) a reason-

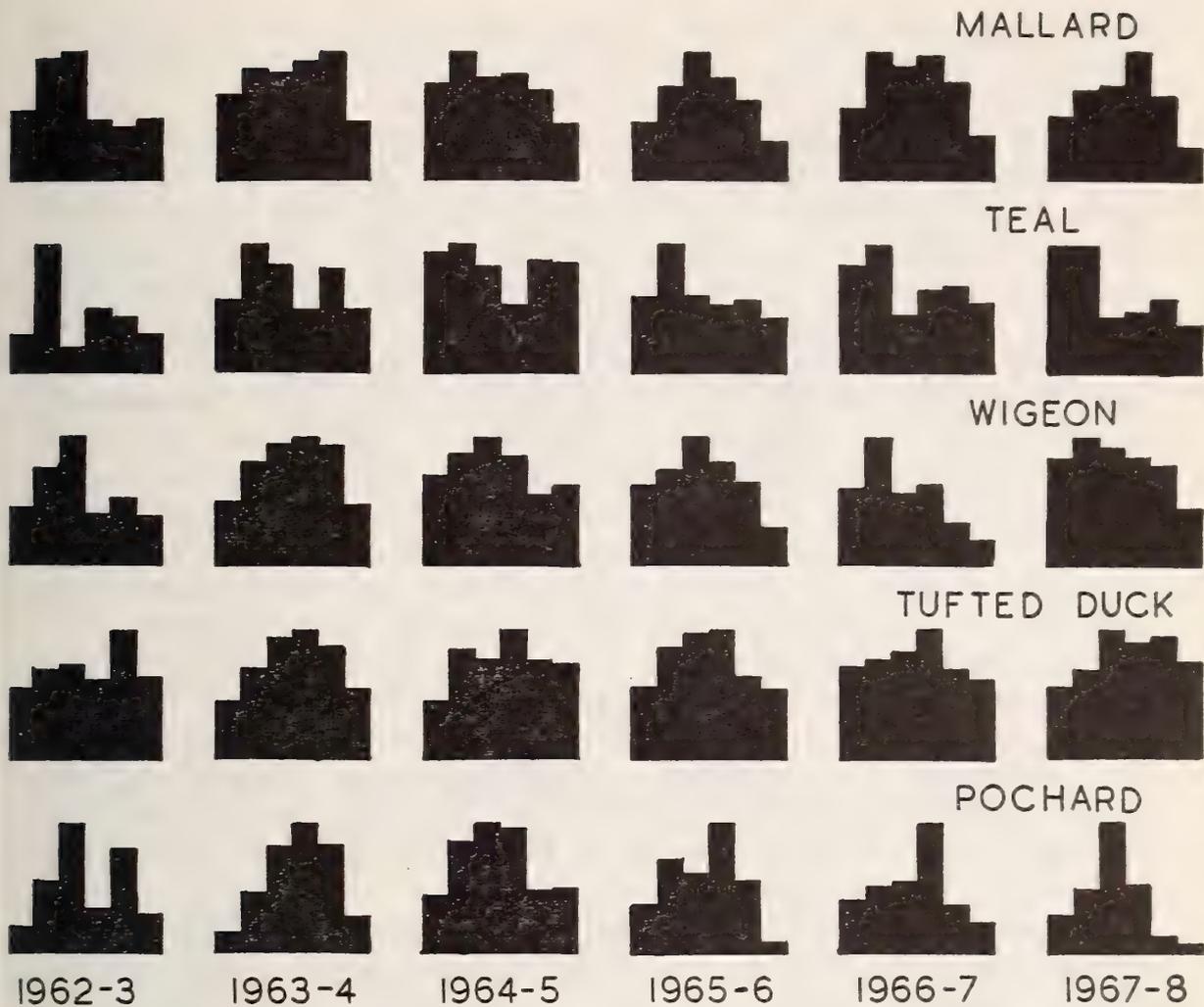


FIG. 2. Fluctuations in duck numbers from October to March (based largely on priority count figures). Each column represents one month, with October on the left. The peak count for each species each season is taken as 100 and the other monthly totals are expressed as percentages of the peak. The table below gives the peak counts (upper figures) and the number of sites involved (lower figures):

1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
					Mallard
9007	13731	11471	15839	22148	17057
19	25	22	25	29	24
					Teal
5610	2579	1856	1986	1938	2462
10	14	11	16	15	14
					Wigeon
8003	6643	9103	9393	31684	10788
18	21	21	21	30	22
					Tufted Duck
2983	2909	3502	4838	2804	2842
11	15	16	18	19	16
					Pochard
3773	3878	5023	7984	7226	10299
7	8	10	14	14	12

ably large sample of such waters exists for each of the last six seasons but, since these waters vary in number and identity from year to year, the annual totals of each species counted differ widely, and direct comparisons between seasons are therefore unsatisfactory. These differences in totals have been levelled-out by considering the peak count (total for all waters in the sample) in each season as 100 and expressing the other monthly totals as a percentage of the peak (fig. 2). This allows between-year and between-species comparisons of the seasonal trends in numbers. Fig. 3 shows that the seasonal fluctuations of a species are not necessarily synchronous throughout the country; maximum Pochard numbers are generally reached one to two months earlier in the north than in central Scotland. Wigeon also reach their peak earlier in the Moray Firth than further south. Variations in other species are less clear-cut. Some northern waters are included in the calculations for all the fig. 2 histograms.

The counts of Scaup and Goldeneye at Seafield, the most important site for both species, have been used in a direct comparison of actual numbers, and contrasted with those for some of the smaller, more northern resorts (fig. 4). Data for the remaining species are not sufficiently complete to justify detailed comparisons and only general comments on seasonal variations can be made.

Mallard, Teal and Wigeon. The histograms of fig. 2 show that the seasonal fluctuations of these three species differ considerably. Mallard show the least consistency, with peak numbers in different years occurring in every month from November to February. One can only speculate as to the reason

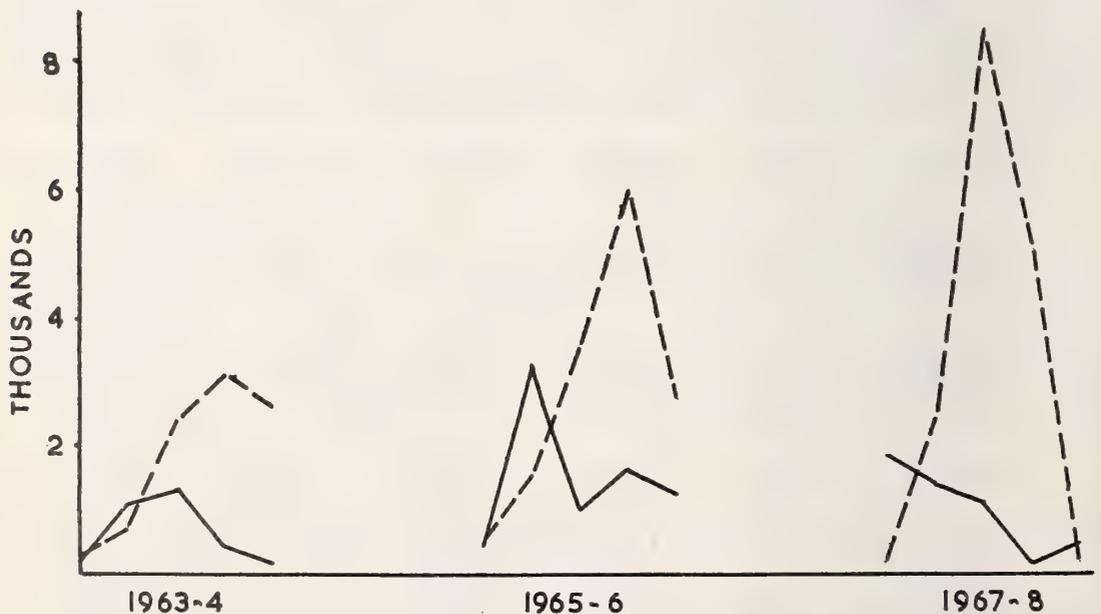
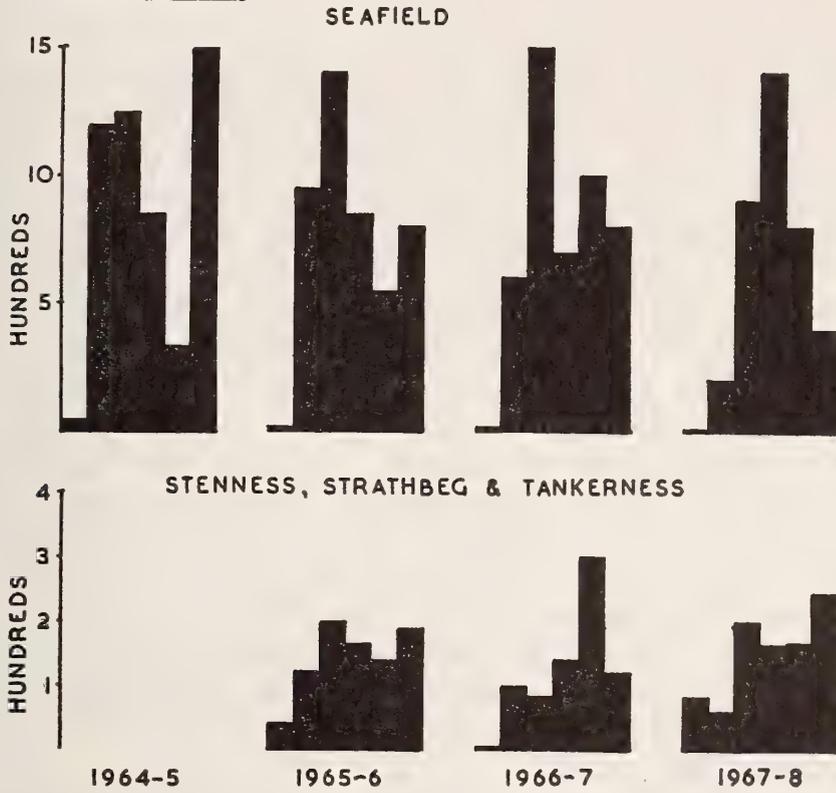


FIG. 3. Pochard numbers, from October to February, at Strathbeg and Harryay (solid line) and at Duddingston, Kilconquhar and Town Loch (broken line).

GOLDENEYE



SCAUP

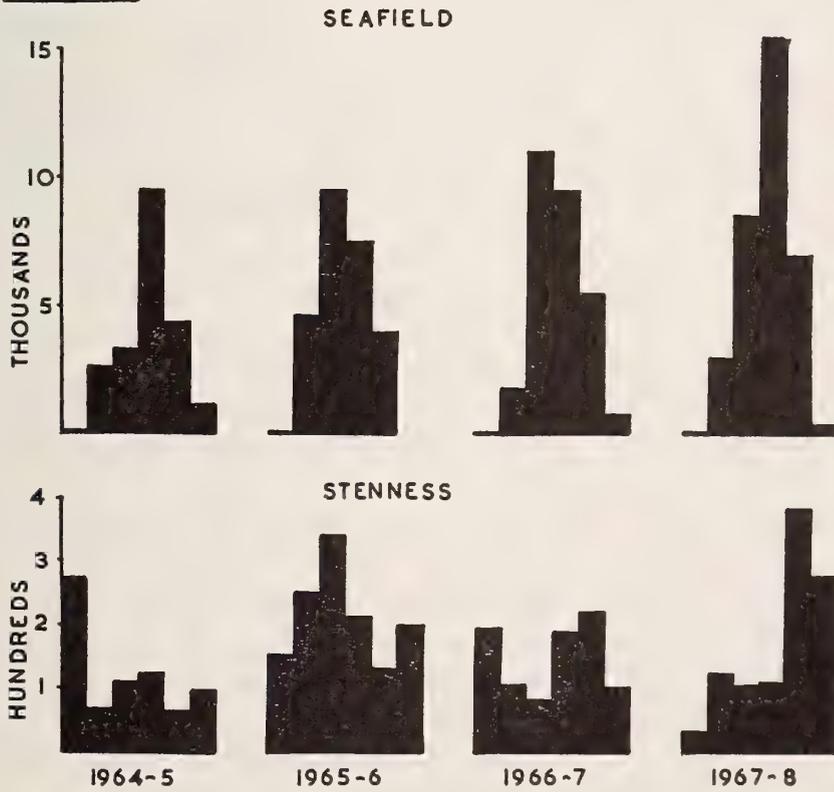


FIG. 4. Monthly fluctuations, from October to March, in numbers of Goldeneye and Scaup at Seafield and in the north.

for this variability, but, since ringing recoveries have shown that Scottish wintering birds may originate from points as far apart as Iceland and the USSR, it may be due to birds from one of these areas failing to reach this country in some seasons. Teal show a marked autumn peak, a midwinter drop attributable to the onward passage known to take place (westwards to Ireland and/or south to France), and then some recovery in numbers prior to the March decrease. The sources of Teal and Wigeon wintering in this country are as widespread as those of Mallard, but the limited ringing evidence available suggests that a larger proportion of our immigrant stocks of these two species originates in Iceland than is the case with Mallard. Wigeon show a fairly regular seasonal pattern, with a steady build-up in autumn to a peak in November or December. The important Cromarty Firth area, however, is represented only in the 1966-67 histogram, since a complete run of counts is available only for that season. The inclusion of the Cromarty figures would almost certainly bring the Wigeon peak forward from December to November in each year and would probably also increase the height of the peak above the other monthly levels (as in 1966).

The timing and size of immigrant duck movements are presumably influenced more by weather conditions in the area of origin than by those prevailing in Scotland at the time of arrival. For most species variations in midwinter frost intensity in this country are likely to affect only local distribution, unless conditions become exceptionally severe. The timing and rate of the spring dispersal on the other hand are affected by the weather here in February and March. Two major deviations from the 'average' winter occurred in the last six seasons (see appendix 2) and both are reflected in the corresponding histograms. During January and February 1963 continuous frost and snow cover resulted in a marked abnormal decrease in the numbers of Mallard and Wigeon recorded in comparison with other years. In early March 1965 an unusually cold spell delayed the dispersal of all species except Mallard (the earliest nester), with Teal numbers remaining almost constant from February to March while Wigeon actually increased instead of declining.

Scaup, Tufted Duck, Pochard and Goldeneye. These four species reach peak numbers during December-January (figs. 2 & 4). The rapid autumn build-up to the midwinter maximum, and equally rapid decline in February-March, are particularly distinct in Pochard and the Seafeld flock of Scaup. The Pochard peak depends on the date of the maximum count at Duddingston and the apparent drops in January 1963 and December 1965 are almost certainly due to local

movements to unrecorded waters and not to departure from the area.

The Seafeld Goldeneye also increase very rapidly from the minimal numbers present in October. Their subsequent decrease, however, is much slower than that of the Scaup and in three of the last four years there has been a distinct end-of-season increase (in many areas Goldeneye are present well into April but, as mentioned earlier, no recent counts are available to illustrate this point). The regularity of the annual fluctuations in the Seafeld Scaup flock, and to a lesser extent the Seafeld Goldeneye, is in marked contrast to the irregular variations on some of the smaller northern resorts (fig. 4).

The similarities between the seasonal fluctuations of these three species are interesting, as the birds apparently originate from separate breeding grounds. All ringed Scaup recovered in Scotland have been Icelandic birds; all Goldeneye recoveries are of birds ringed in Sweden; while the only three foreign-marked Pochard recorded here so far (none of them in Forth) had been ringed in Denmark (2) and Lithuania.

Unlike the other diving species, Tufted Ducks breed in this country in considerable numbers (the numbers of Pochard and Scaup breeding here are very small, and Goldeneye do not breed at all in Britain) and native birds probably form a substantial part of the wintering flocks, which also include immigrants from Iceland, Scandinavia and the USSR. The much less marked seasonal fluctuations shown by Tufted Duck in comparison with the previous species are presumably due to the relatively large numbers of native birds present at the beginning and end of the season.

The severe weather of early 1963 does not appear to have driven many of the diving ducks further south. In fact Tufted Duck reached a high peak in February 1963, when 2300 were counted on the Kennet Pans stretch of the Forth, the tidal water to which many of the Tufted Duck in east-central Scotland apparently resort when the lochs and reservoirs freeze over. The late spring of 1965 on the other hand delayed the dispersal of Tufted Duck, Pochard and Goldeneye but not of Scaup.

Other species. The mobility of Pintail flocks within the main wintering areas makes accurate assessment of seasonal changes difficult. Only small numbers of Pintail breed in Scotland and many of the immigrant birds probably come from Iceland. The main influx generally occurs in November and numbers then remain fairly constant until February and sometimes into March.

Shoveler show a marked early-autumn passage through Scotland with a much earlier peak than any other species.

Numbers are at their maximum in September-October and drop rapidly as soon as frost sets in. In most of the years under review this drop occurred between the November and December counts, but in 1965, when there was an unusually cold spell early in November, a big decrease took place between the October and November counts. Few Shoveler overwinter in Scotland, and although there is some return movement in February-March this is insignificant compared with the autumn passage (in complete contrast to the situation in England, where maximum numbers are present in March). An appreciable strengthening of this autumn passage has been apparent (mainly in the northeast and east of the country) in the last three to four years, and this may be related to the recent increase of Shoveler as a breeding species in Scandinavia. As yet, however, there is no ringing evidence to support this theory, the few Shoveler recoveries suggesting a USSR or W. German origin for birds passing through southwest Scotland, and a southward movement of the small numbers of Scottish-bred birds as far as Spain.

The sparse information available for Long-tailed Duck suggests that the main arrival is from October onwards and that birds are still present in considerable numbers in March. No ringed Long-tailed Ducks have been recovered in Scotland, but the view has been expressed (Boyd in Atkinson-Willes 1963) that British-wintering birds are more likely to come from Siberia, and possibly Spitsbergen, than from Iceland or Greenland.

The largest recent counts of Velvet Scoter have been made in December-January but the records are so erratic that no satisfactory picture of seasonal movements can be deduced. There is a single record of a Velvet Scoter ringed as a juvenile in Norway and recovered in Dumfriesshire.

Substantial flocks of moulting Common Scoter occur off the east coast in late summer but it is not known whether these same birds form the wintering flocks. At the main resort, in St Andrews Bay, numbers are generally small in October, increase rapidly in November and remain fairly high until March. There are no ringing recoveries for Scotland but it is thought that many of the Common Scoter wintering in this country probably come from Iceland.

Eiders are resident in Scotland and the wintering population, so far as is known, consists entirely of native birds. Studies on the east coast have shown that sizeable movements take place to and from distinct moulting and wintering grounds, and these, as well as breeding season changes, produce marked seasonal variations in numbers at the principal resorts (Milne 1965).

The available data for Red-breasted Merganser and Goos-

ander are few and no pattern of seasonal fluctuations is apparent. Both species breed in Scotland, while ringing recoveries have shown that Red-breasted Mergansers from Iceland (6 records) and Goosanders from Sweden (1 record) occur here as winter visitors.

The movements of Scottish Shelduck have already been outlined in section 1. Numbers are probably at their lowest in October-November before the adults return from the moulting grounds around the Weser Estuary in northwest Germany.

Year-to-year changes in numbers

To speak of 'population' changes implies that the birds referred to form a distinct and identifiable unit whose numbers are controlled solely by variations in breeding success and mortality. Only two species wintering in Scotland, Eider and Shelduck, conform to this description and even for these the data are insufficient to allow population changes to be measured accurately. Wintering flocks of most other species consist either of immigrants from more than one source, or of British and foreign birds in unknown proportions. In neither case can these be described as closed populations. True population changes will only become measurable when much more information has been assembled regarding the breeding areas, migration routes and final wintering grounds of the various species. Much of this information should eventually become available through the International Wildfowl Research Bureau's plan for studying European wildfowl, throughout their entire range, by a combination of midwinter censuses, ringing programmes and breeding distribution surveys. Meantime much remains to be learned about the breeding numbers and distribution of native species. Information has been accumulating slowly through the Wildfowl Trust's Summer Breeding Survey, but it is disappointing that after four years so much of the country remains a blank. More data on distribution will be obtained from the British Trust for Ornithology's Atlas of Breeding Birds, but since this involves no record of numbers it will be of little help in estimating the size of Scottish breeding populations.

To avoid any suggestion that discrete populations are being considered the description 'wintering flocks' will be used in the discussion which follows in preference to 'populations.'

Annual changes in the size of Scottish-wintering duck flocks composed partly or entirely of immigrant birds presumably depend mainly on (1) variations in breeding success in the area(s) of origin (including Scotland when native birds constitute part of the flock), and (2) variations in the proportion of foreign populations visiting Scotland. Once the species

has reached this country the availability of its preferred habitat determines whether it remains or moves on, and regulates its local distribution.

Ideally, between-year comparisons of wintering numbers should be based on regular counts on a constant sample of the most important waters for each species. With such strict selection, however, the sample will be limited, because of occasional missed counts on most waters, to a small and inadequately representative group. The system of indices of relative abundance' developed by the Wildfowl Trust (see appendix 2) uses most of the records from priority waters, even though some of these waters are not counted regularly every month.

The extent to which the counts on selected waters reflect numerical changes in wintering flocks over the country as a whole depends upon (1) the size and constancy of the sample in relation to the total wintering flock, (2) the consistency with which the larger gatherings frequent the priority waters, and (3) the adequacy with which hard-weather resorts, as well as preferred habitats, are represented.

It is obviously impossible to measure accurately the first of these factors since this would involve counting, on several occasions, every member of a species present in the country. The International Census results, however, provide a means of making some assessment of inter-specific variations in sample size and constancy. Table 3 shows, for the five commonest species, the proportion of total counts carried by priority waters at the 1967 and 1968 censuses. The higher the proportion of birds counted on priority waters, and the more

Table 3. Proportion of birds counted on priority waters at January 1967 and 1968 censuses

	Mallard	Teal	Wigeon	Tufted	Pochard
Priority waters	60	30	50	39	18
Priority waters counted					
1967	56	27	44	37	17
1968	53	26	45	33	18
Birds on these waters					
1967	27330	4040	13563	2809	7299
1968	23150	2030	13818	2726	2777
Total birds counted					
1967 (307 sites)	52455	6961	38668	6819	9498
1968 (346 sites)	49867	5735	30486	6559	7556
Percentage on priority waters					
1967	52	58	35	41	77
1968	46	35	45	42	37



PLATE 28. Fair Isle on a fine sunny day, showing the magnificent cliffs at the north end and the crofting area in the south

Photographs by John Topham Ltd





PLATE 29. Fair Isle, looking over North Haven to Sheep Rock, showing the old bird observatory huts and the site of the new buildings in the hollow between the two roads; and the founders of the observatory (left to right), Ian Pitman, Sir Arthur Duncan and George Waterston, still active in their original roles of treasurer, chairman and secretary, respectively.

Photographs by Dennis Coultts





PLATE 30. Aerial view of Fair Isle, looking over the observatory site, with the airstrip on the hill behind; and George Waterston cutting the 21st birthday cake, in the shape of the new buildings, watched by the warden Roy Dennis and his wife Marina, holding the tankards presented to them to mark the opening of the new observatory.

Photographs by Aerofilms Ltd (top) and Dennis Coultts





PLATE 31. The new Fair Isle Bird Observatory buildings completed in 1969, with the warden's quarters on the right, on an overcast autumn day; and a Wryneck being examined and measured in the laboratory.

Photographs by Joe Horrock (top) and John Topham Ltd



constant this figure from year to year, the more reliable should be the indices (appreciably fewer sites were counted in 1967 than in 1968, so a slight decrease in the 'priority percentages' would be expected in the latter year). The figures shown in the table suggest that the Mallard indices are more reliable than those for Wigeon, which in turn are more reliable than those for Teal, while the Tufted Duck figures are much more consistent than those for Pochard.

The constancy of these 'priority percentages' is controlled largely by the second factor, consistency in the usage of priority waters. This in turn is influenced by whether the species under consideration tends (1) to remain for long periods at one resort or to move freely around the country, and (2) to form a few large flocks or be scattered in relatively small parties on many different waters. Where a species occurs principally in large flocks (see section 3), and also makes irregular mass movements from one site to another, it is important that the alternative resorts should be fully covered. Since the criterion for selecting priority waters was that they should carry *each season* the stated minimum for the species concerned, waters which are used only sporadically have tended to be disregarded. A striking example of the consequences of this occurs in the records for Pochard (the species which shows the biggest difference between 1967 and 1968 priority percentages). The Town Loch at Dunfermline, used only irregularly by large numbers of Pochard, is not included in the priority list for this species. In January 1967 only 66 Pochard were on the loch but in January 1968 there were 2800 (700 more than on Duddingston). The inclusion of these records with the priority counts would bring the 1967 and 1968 figures in table 3 to 79% and 74% respectively and would make the Pochard indices appreciably more reliable than any of the others.

The third factor, adequate representation of hard-weather resorts, has also been restricted by the regular-usage criterion. Failure here must lead to disproportionately low indices in severe winters, suggesting that onward migration has occurred when the birds have probably made only local movements. As suggested earlier, the diving species are not driven out of Scotland even by continuous hard weather, though they may be forced to leave freshwater lochs. Tufted Duck are most reluctant to move to tidal water (see section 3) and, since such waters are used only occasionally, none are included in the priority list for this species. There are, however, several tidal areas where Tufted Duck gather during prolonged spells of frost. By far the most important of these is Kennet Pans, where few Tufted Duck occur in open seasons

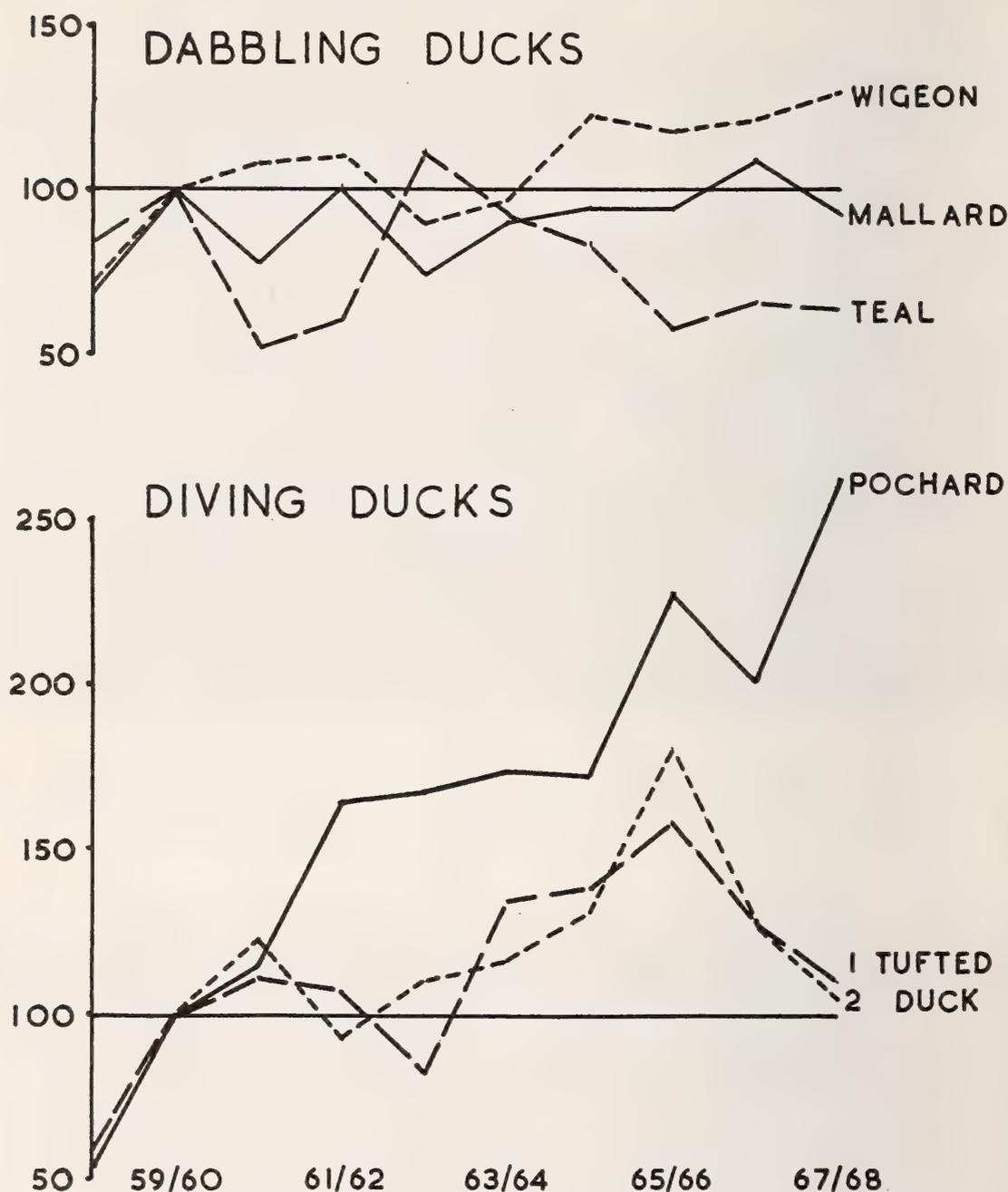


FIG. 5. Scottish 'Indices of Relative Abundance' (see appendix 2) for five common species. For the Tufted Duck graph 1 excludes and graph 2 includes Kennet Pans counts.

but 2000 sometimes assemble in severe weather (table 4). The inclusion of the figures for this site completely alters the pattern of the indices for this species (fig. 5).

Another limitation of the present system is that only waters counted in the master year (1959-60) can be used in calculating the indices. This excludes some important areas (such as the Cromarty Firth) where counts have been made only during the last few years. However, a 'new master' series, based on 5-year averages, is being calculated at Slimbridge, and if satisfactory will permit the inclusion of many more waters. This, if combined with a more flexible and com-

Table 4. Monthly counts of Tufted Duck on the Kennet Pans stretch of the Forth

	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
Oct	0	0	0	0	0	0
Nov	0	6	0	2	8	0
Dec	0	0	0	2300	820	160
Jan	1800	0	485	1900	850	330
Feb	2300	0	720	450	0	390
Mar	382	0	0	0	0	0

Note Severe frost was experienced in 1962-63 (from mid December to early March) and in 1965-66 (from early November to late January); 1963-64 was a very mild season; the remaining three winters were intermediate (see appendix 3).

prehensive selection of priority waters, should make the indices more reliable measures of change in the size of wintering flocks.

It will be apparent from the foregoing remarks that some caution must be exercised in interpreting the indices of relative abundance shown in fig. 5. Where the graph shows a continuous and pronounced trend in one direction, as with Pochard, the wintering numbers probably have changed; since the Scottish breeding stock of Pochard is negligible, an increase in this species must be due to the arrival of greater numbers of immigrants.

The other four species fluctuate irregularly, and interpretation is complicated by the lack of knowledge of the relative contributions of native and immigrant stocks to the total wintering numbers. Clearly, however, considerable annual variations occur in the numbers of Mallard, Teal, Wigeon, Tufted Duck and Pochard wintering in Scotland. These fluctuations probably result mainly from variations in the strength of immigration rather than in the breeding success of native birds. To summarise, wintering Pochard have probably increased in recent years, but the other four common species show no consistent trends.

The Seafeld Scaup flock, and hence probably the Scottish total, has also increased recently, but information for other wintering species is still insufficient to justify any attempt to assess trends and status.

Section 3. Ecological considerations

As stated earlier, one of the aims of the Wildfowl Count Scheme is to determine whether any species is in need of special protection. Records of numbers alone are insufficient for this purpose; knowledge of the ecology of the various species, and of the threats to which they may be exposed, is also required. The scheme's records obviously contain a wealth of information on wildfowl ecology, but a full analysis

would have needed more time than the author had available. It seemed possible, however, that a study of selected data might provide information of value for conservation. In this section, therefore, an attempt is made to assess interspecific differences in gregariousness, and to examine the effects of varying winter severity on the distribution of the commoner species. The section concludes with a discussion of habitat changes which have occurred recently, are at present in progress or may be expected to take place.

Flock size

Highly gregarious species, occurring in large flocks and at a limited number of places, are more vulnerable than those which are widely dispersed in smaller flocks and a variety of habitats. The records collected at the 1968 mid-January Census, which include data from 346 sites, representing a wide range of habitats, have been used to examine differences between species distribution and flock size (table 5). In January the numbers of Mallard and Wigeon are declining, Teal are at their midwinter minimum, Pintail are probably near their maximum (the January 1968 count was incomplete in Solway), and all the diving species are near their winter peak (see section 2). Since the mean temperatures for the 1967-68 winter were the nearest of the last six seasons' figures to the 30-year average (appendix 3) the distribution in January 1968 seems likely to be representative of the average mid-winter situation.

Table 5 illustrates the differences in flock size and dispersion of eight species. Mallard, occurring on some 73% of the waters visited, were the most widely dispersed. Although several large gatherings were recorded, nearly 60% were in flocks of under 1000. Wigeon and Teal occurred on similar numbers of waters but, whereas half the Wigeon were in flocks of 1000 or more, over 70% of the Teal were in groups of under 250. All three species showed a wide scatter, in both flock size and location, so could presumably adjust to localised habitat changes without suffering serious reduction in numbers.

Pintail presented a complete contrast, with four flocks holding 90% of the birds, and these all at sites which are to some extent endangered—Solway, Forth, Beaully and Cromarty. If the projected developments in these areas are carried out (see below), almost the entire Scottish-wintering population would be affected.

Among the diving species, both Tufted Duck and Goldeneye were widely dispersed, and in each instance half the birds were recorded in small or medium-sized groups. With Goldeneye, however, one very large flock at Seafieid̄ accounted for over a quarter of the total and would be vulnerable to any disaster occurring in the Forth. No flocks of comparable size

Table 5. Numbers of eight species of duck counted at 346 sites in January 1968

Dabbling Ducks		Mallard	Teal	Wigeon	Pintail
Sites with a count of					
0		92	236	205	327
1 - 50		107	75	57	15
51 - 100		46	11	16	0
101 - 250		46	19	29	2
251 - 500		36	4	19	2
501 - 1000		9	1	11	0
1001 - 2500		6	0	7	0
over 2500		4	0	2	0
Total counted		49867	5735	30486	1162
Maximum single count		3850	500	2500	420
Percentage on major sites		41	29	49	91
Note For Mallard and Wigeon major sites are those holding over 1000 of the species; for Teal the figure is 250 and for Pintail 100					
Diving Ducks		Tufted	Pochard	Goldeneye	Scaup
Sites with a count of					
0		226	286	213	318
1 - 20		51	37	89	14
21 - 50		37	14	22	6
51 - 100		12	3	11	0
101 - 200		9	1	7	3
201 - 500		10	3	3	2
over 500		1	2	1	3
Total counted		6559	7556	4820	22252
Maximum single count		860	2800	1400	15500
Percentage on major sites (holding over 200)		54	75	49	97

were recorded for Tufted Duck in January 1968 but, as mentioned earlier, gatherings of over 2000 do occur on the upper Forth during severe frost. Only under these conditions is this species likely to be in any danger.

Pochard were recorded on only half as many waters as the two previous species and the Duddingston and Town Loch flocks accounted for two-thirds of the total (2100 and 2800 birds respectively). The Duddingston roost, being a bird sanctuary, is unlikely to suffer any deleterious changes, but at the Town Loch, where the power station recently switched from coal to oil, some pollution has already been reported. As the bulk of the Scottish Pochard population is concentrated in the Forth area any factor which adversely affects conditions there might reduce the total wintering numbers.

Scaup were concentrated primarily in one locality, with comparatively insignificant numbers scattered elsewhere round the coast; 95% of the birds counted were on the Forth, making this species extremely vulnerable to any oil pollution or other disaster which might occur there. If the Scottish-

wintering Scaup do comprise most of the Icelandic breeding stock then oiling in the Forth could devastate this entire population.

Records for the sea ducks, sawbills and Shelduck are insufficient to justify similar detailed examination but some comments, based on a general review of the data, can be made. Among the sea ducks, Eider, with its very large concentration at the mouth of the Tay, is the species most likely to suffer seriously from oil pollution. Large-scale mortality from this cause has indeed already been recorded there (Greenwood & Keddie 1968). Both Velvet and Common Scoters also occur at times in very large flocks, but since they frequent more open coastal waters they are probably less vulnerable than Eiders to oiling. The wintering population of Long-tailed Ducks, which consists mainly of scattered small flocks, is unlikely to be seriously affected by local pollution.

The only areas where sawbills are known to gather in sufficiently large numbers for adverse conditions to affect the population as a whole are the Beaully Firth (both Red-breasted Mergansers and Goosanders) and the upper Forth (Red-breasted Mergansers only). Developments in the Inverness area might well influence conditions in the Beaully Firth, while the risk of oiling in the Forth is ever-present.

Several of the most important Shelduck wintering grounds are in areas where conditions may well change in the next ten years (Grangemouth, Solway and Cromarty). Reductions in the extent of the intertidal mud available in these areas, or changes in its biological characteristics, could affect the numbers of Shelduck wintering in Scotland and possibly also the breeding population.

Influence of weather on habitat selection in winter

It is well known that some ducks prefer fresh, and others tidal, waters, but there is little published information on the degree to which the usage of different habitat types is influenced by weather conditions. To obtain some measure of interspecific differences in this respect a comparison has been made between duck numbers on ten fresh and ten tidal waters in October, when the birds have a choice of habitat, and in January, when freezing of fresh waters may restrict the choice. The records for three seasons, representative of very severe, average, and very open conditions (appendix 3), have been used to demonstrate the effects of varying winter severity.

The resorts used in this comparison were chosen so far as possible to represent a range of habitat types, and to carry between them substantial numbers of each species. Only waters for which October and January counts were available

in each of the three seasons could be used, and this restriction may have resulted in rather inadequate representation of Wigeon on tidal waters. The sites selected were: (fresh waters) Strathbeg (a very large and fairly eutrophic loch), Duddingston, Kinnordy and the Forfar-Rescobie-Balgavies group (small to medium-sized eutrophic lochs), Gladhouse and Lintrathen (large reservoirs), the Slains group at Newburgh (small lochs) and the Ambrisbeg group in Bute (one large and two small), Fitty (typical of the rather bare waters in South Fife), and Harray (a large, shallow Orkney loch); (tidal waters) Tynninghame, Eden and Ythan Estuaries (small estuaries opening to the North Sea), Longman Bay and Skibo Estuary (sheltered sites in Inverness and Dornoch Firths), Tullibody Island, Kennet Pans and Grangemouth-Kincardine Bridge (stretches of upper Forth), Seafield (Forth foreshore at Leith), and Stenness (a brackish loch in Orkney, very close to Harray).

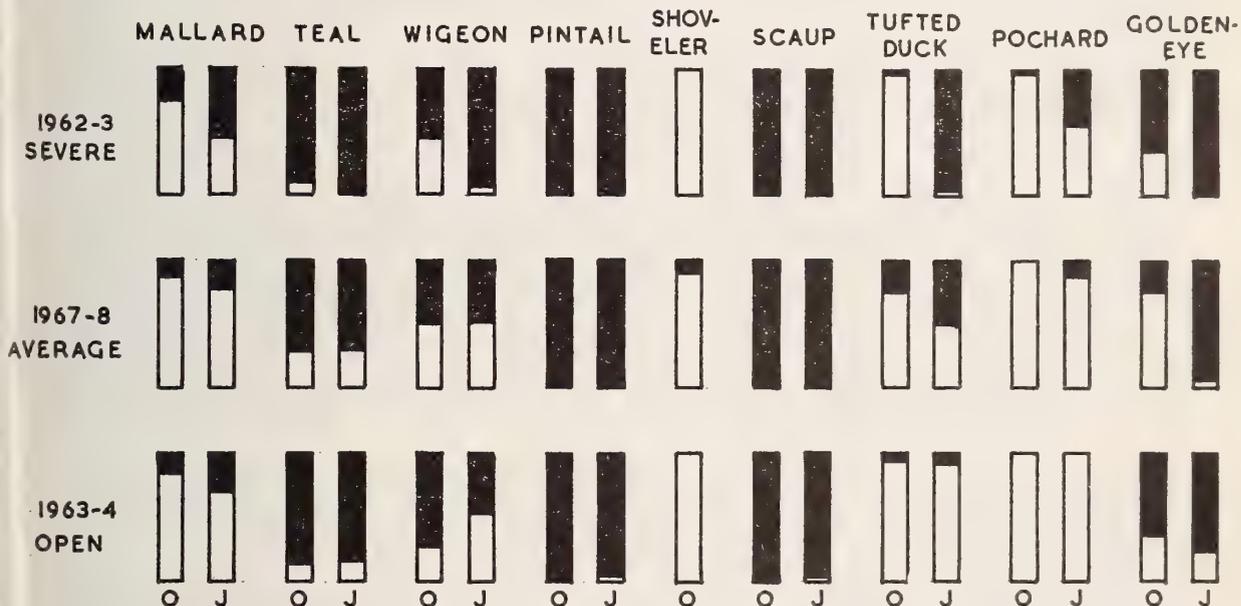


FIG. 6. Proportions of nine duck species recorded on fresh water (white) and tidal water (black), in October (O) and January (J), in winters of varying severity (based on records from ten fresh and ten tidal waters).

The percentages of each species recorded on fresh and on tidal waters are shown in fig. 6. The virtually exclusive use of tidal waters by Pintail and Scaup, and of fresh water by Shoveler, is what would be expected, and no further comment on these species need be made (no January figure for Shoveler is given since the numbers present at that season were negligible).

Mallard show a strong preference for fresh water and frequently continue to roost on frozen lochs and feed on the surrounding farmland when all other species have moved away. Only during conditions of frozen snow cover, as in

January 1963, were more than half the Mallard recorded on tidal water. An average winter, by contrast, produced little change from the autumn pattern of distribution. Most of the Teal were recorded on tidal waters even in autumn, an unexpected finding in view of the *Handbook* comment "resorting... to a less extent to sea coasts, estuaries and mud-flats." Again only very severe conditions reduced the proportion (in this case already very small) on fresh water. Wigeon are usually thought to be mainly maritime outwith the breeding season, but in Scotland a substantial proportion winter on fresh water, and only really severe weather drives practically all the birds to the coast.

The closest correlation between weather and distribution is seen in the Tufted Duck. In autumn nearly all are found on fresh water (the majority of tidal birds in October 1967 were on the brackish Loch of Stenness), and if conditions remain open, as in 1963-64, no significant movement to tidal water takes place. In an average winter, with some of the shallower lochs frozen in January, about half the Tufted Duck move to estuarine waters; and in a very severe winter almost all leave their preferred habitat.

Pochard seem to show an even stronger attachment to fresh water. The figures are somewhat misleading, however, since they are greatly influenced by the counts for Duddingston. If the surmises made in section 1 are correct, the apparent strong preference for fresh water is probably true as far as roosting is concerned, but appreciable numbers of Pochard must feed on tidal water.

Goldeneye have the least consistent autumn distribution, with the highest numbers occurring on fresh water in some seasons and on tidal water in others. By midwinter, however, a large proportion of the Goldeneye population is always on tidal water, even in an open season.

A good illustration of the way in which normally scattered populations may be concentrated by severe weather is provided by the records for the upper Forth, between Grangemouth and Alloa. In the mild January of 1964 this area held 1381 dabbling ducks (579 of which were Pintail) and only one diving duck. In the very hard weather of January 1963 there were no fewer than 6174 dabbling ducks and 3502 diving ducks on this 10-mile stretch of river, much of which is less than half a mile wide. Under such conditions there could well be competition for food between the various species.

Habitat changes

Even in the absence of direct interference by man, habitats change gradually as estuaries silt up and lochs become en-

riched. When man intervenes, changes are liable to be sudden and extensive. They may occur intentionally, as in the creation of new reservoirs and the drainage of wetlands, or quite unintentionally, through water pollution or other activities which affect the ecology of the habitat. Detailed records of the wildfowl using newly-created waters and areas undergoing development are invaluable in helping to forecast the probable effects of similar developments in the future. Records are equally useful in retrospect, when a long series of counts on an individual water may provide the only factual evidence of a less-obviously changing habitat.

Recent physical changes to Scottish habitats have probably been comparatively unimportant to wintering wildfowl. A few small lochs have been filled in, completely or partly. In the latter case the numbers of diving ducks have been reduced, but the dabbling species have suffered little effect. Reclamation by tipping ash and rubble along the shoreline is also taking place, and in some areas, such as Invergowrie Bay, is gradually reducing the extent of the tidal mudflats. In England the creation of gravel pits and reservoirs has provided many valuable new habitats. In Scotland, on the other hand, most recently created waters are situated in hilly areas and are very deep. They are consequently of little value to wildfowl. However, some of the newer lowland reservoirs, for example the Backwater Dam in Angus, are already used as roosts by Mallard feeding on nearby agricultural land and may eventually carry appreciable numbers of diving ducks.

Future physical changes are likely to be on a larger scale and to have more far-reaching effects. If the plan for a Solway Barrage reaches fruition, freshwater conditions will be created in the upper Solway and the feeding grounds of Pintail and Shelduck will be reduced. The Pintail resort in Longman Bay is likely to be adversely affected, if not destroyed, in the near future, since plans for industrial development there involve the reclamation of a considerable area of foreshore. The much-publicised Invergordon project includes the establishment of an aluminium smelter, and also a petrochemical works, in the Cromarty Firth. Increasing pollution is bound to result; oil spillage could endanger the Goldeneye in the Firth; and, if the proposed reclamation of Nigg Bay is carried out, a third Pintail feeding ground will vanish. Changes in the area might also affect the Wigeon which use the Cromarty Firth in autumn.

All these schemes involve physical alteration of the environment. Less obvious changes affecting wildfowl habitats

are also occurring as a result of pollution, and many must pass unnoticed; but occasionally their effects on wildfowl numbers are sufficiently striking to attract attention. Such was the case with the Tullibody Island-Kennet Pans stretch of the Forth, where Mallard and Teal numbers have dropped steadily over the last six years (table 6). Enquiry from the

Table 6. Counts of Mallard and Teal on the Tullibody Island-Kennet Pans stretch of the Forth

	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
Mallard						
Peak	1554	907	756	637	734	416
Total	6065	3570	2728	2410	2157	1294
Teal						
Peak	4390	1501	975	861	552	298
Total	12627	4848	3169	2053	1382	1113

Note Total figures are the sum of the seven monthly counts for the season

Forth River Purification Board revealed that until 1963 distillery 'spent wash' (consisting mostly of agglomerations of yeast and some of the soft tissue boiled out of the grain before and during distillation) was discharged into the river near Cambus, at the upstream end of this stretch. In 1963 the distillery installed a plant to dry the spent wash for use as cattle feed. For the next two years some of the wash still reached the river, owing to breakdowns in the plant, but since then none has been discharged. There has been no increase in other forms of pollution. Presumably, therefore, it was the spent wash which formerly attracted such large numbers of duck to the area. Unfortunately a reduction in the level of pollution does not always result in improved conditions for wildfowl.

A change is apparently also occurring at Seafield, where the numbers of diving duck (especially Scaup) have increased markedly in the last few years, suggesting that more food has become available. No information is obtainable on the populations of marine animals in this stretch of the Forth, but as Edinburgh expands, an increasing volume of sewage is discharged. It is currently 26.5 million gallons per day from the Water of Leith and Seafield outfalls alone and contains considerable quantities of crude sewage as well as domestic drainage and industrial waste. Presumably the sewage provides food for the ducks, either directly, or indirectly by increasing the marine fauna.

The most serious threat to wildfowl and their habitats is

that of oil pollution in estuarine and coastal waters. Unfortunately it is also the most difficult to control. The *Torrey Canyon* experience showed that diving species suffer the greatest losses; the Medway incident in 1966 demonstrated that oil deposited on saltings and mudflats could kill birds feeding over the area; and observations following the leakage from the *Tank Duchess* off Dundee proved that slicks carried to and fro on the tide present a recurring threat to both birds and beaches. Mention has already been made of the oiling in the Tay Estuary, which killed more than 1300 ducks early in 1968. More recently serious oil pollution of the Clyde was narrowly averted. Tankers ply regularly up the Forth as far as Grangemouth and, since 20,000 or more diving ducks frequent the inshore waters near Leith in midwinter, and important concentrations of Shelduck and Pintail use the flats near Grangemouth, and large flocks of Tufted Duck, Goldeneye and Red-breasted Merganser occur on the upper tidal reaches of the river, oiling anywhere on the Forth could constitute a major wildfowl disaster. The preparation of a plan of campaign, which would coordinate the activities of local authorities, River Boards and others, and could be put into operation without delay in the event of a serious oil spillage, should be regarded as a matter of great urgency.

Other human activities that influence wildfowl distribution or numbers are shooting and aquatic sports (especially water skiing). The growth of Wildfowlers' Associations and the introduction of shooting permits and bag limits have decreased the disturbance caused by indiscriminate and uncontrolled shooting. It seems unlikely that over-shooting now has any real effect on either total numbers or regional distribution of wintering duck, though it may still affect local distribution in some areas. In Scotland the climate is unfavourable to aquatic sports during most of the winter, and these are consequently a more serious threat to breeding than to wintering birds.

Conclusions and suggestions

Much information has accumulated regarding the wintering distribution and numbers of the dabbling and diving ducks, the data being most complete for east-central Scotland. The most important single 'unknown' concerning these species is the location of the feeding grounds used by the Duddingston Pochard. It should be possible, through liaison between Lothians and Fife observers, to investigate this matter more closely. More comprehensive cover of waters in the Clyde region is desirable, and any records from the Highlands and Islands would be useful, since these areas are least well covered.

Information on the sea ducks is still extremely scrappy, and counts from the presumably important waters around the northern and western isles are almost entirely lacking. Knowledge of these species could be greatly expanded by encouraging observers to make coastal counts whenever opportunity permits, rather than to attempt them only on the set monthly dates. More coordinated counts (similar to those organised by the Inner Solway Wildfowl and Wader Group) are needed along stretches of coastline, in the larger firths and on inter-island waters. Such counts would also help to fill gaps in the picture of sawbill and Shelduck numbers and movements.

Little is known about the reasons for the large annual fluctuations which occur in the numbers of most species wintering in Scotland. Although the explanation must in most cases be sought outside this country, there is still much to be learned about native stocks and the extent to which variations in their breeding success affect wintering numbers. The Wildfowl Breeding Survey is a non-repetitive enquiry (a fact which should increase its appeal to many who are unwilling to undertake monthly winter counts) and combines well with 10-km square recording for the BTO Atlas. Ornithologists doing Atlas work are asked to make the small extra effort of recording wildfowl numbers in addition to evidence of breeding. Such information is essential if any assessment is to be made of the size of the Scottish breeding populations of Mallard, Teal, Wigeon, Tufted Duck and the sawbills.

Some of Scotland's most important wildfowl habitats are in areas for which major developments have been proposed. Particular effort should be made to obtain detailed records of the birds using these districts before such developments begin, and wherever possible to follow the subsequent changes in wildfowl usage.

Although the midwinter censuses do not take place at the best time for duck counting in Scotland, since the probability of frost and snow occurring in January is high, increasing emphasis is likely to be placed on these International counts in the future. The more complete the coverage at these censuses, both in this country and abroad, the more reliable will be the picture which eventually emerges. An appeal is therefore made to ornithologists all over Scotland, and especially to those in the north and west, to participate in this annual effort. Further details may be obtained from the Wildfowl Trust, Slimbridge, Gloucestershire.

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I am indebted to George Atkinson-Willes and Chris Beale, of the Wildfowl Trust, for permission to use the count records

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Last, but by no means least, I must record my indebtedness to the many dedicated duck counters without whose efforts this paper could never have been written.

Summary

Scottish Wildfowl Count data for the period 1962-68 have been analysed to obtain information on the distribution, numbers and ecology of wintering ducks. The largest recorded concentrations of Wigeon and Goosander were in the North; of Teal and Pintail in the North and Solway; and of all other species in Tay-Forth; but data on the sea ducks were too sparse to be reliable. The species were recorded in approximately the following order of decreasing abundance: Mallard; Wigeon; Scaup; Teal and Eider; Tufted Duck, Pochard, Goldeneye and Common Scoter; Pintail and Velvet Scoter; Shoveler, Long-tailed Duck, Red-breasted Merganser and Goosander; Gadwall; Smew. Numbers of Pochard wintering in Scotland increased substantially during the period under review but Mallard, Teal, Wigeon and Tufted Duck numbers fluctuated markedly from year to year. Peak counts of Shoveler were generally recorded in September-October; of Mallard, Teal, Wigeon and Pintail in November-December; and of Scaup, Tufted Duck, Pochard and Goldeneye in December-January. Flock size and distribution varied greatly between the commoner species, with Mallard, Wigeon and Goldeneye the most widely distributed and Pintail, Scaup and Pochard the most locally concentrated. Habitat changes and oil pollution appear to constitute potential threats to the Scottish-wintering flocks of Pintail, and of Scaup and Pochard, respectively.

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Few detailed references have been given in the text since the data discussed were drawn largely from unpublished records (held at the Wildfowl Trust, Slimbridge, Glos.), and to a lesser extent from the Current Notes sections of *Scottish Birds* Vols. 2-5. Additional information was obtained from the sources listed below.

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Appendix 1. Ringing recoveries of Scottish duck (excluding British recoveries of Scottish-ringed birds)

Species	Ringed in		Recovered in			
	Birds	Country	Month(s)	Country	Month(s)	
Mallard		Scotland	Winter	Finland Sweden Norway Faeroes Latvia Germany Holland	May-Aug	
	7	Finland	June-Aug	Scotland	Dec-Feb	
	2	Norway	June-July	Scotland	Dec-Jan	
	5	Russia	June-Aug	Scotland	Sept-Jan	
	1	Iceland	Aug	Scotland	Dec	
	5	Denmark	Apr-July & Nov	Scotland	Oct-Jan	
	8	Holland	July-Dec	Scotland	Sept-Jan	
	3	Belgium	Aug-Sept	Scotland	Sept-Nov	
	Teal	7	Scotland	Jan-Mar	Sweden	Apr-Aug
		1	Scotland	Mar	Denmark	Aug
		1	Scotland	Mar	Poland	July
		1	Scotland	Feb	Iceland	May
		1	Scotland	Mar	Finland	May
12		Denmark	July-Dec	Scotland	Sept-Feb	
37		Holland	July-Dec	Scotland	Aug-Mar	
18		Iceland	June-Aug	Scotland	Oct-Feb	
2		Belgium	Apr-June	Scotland	Sept-Oct	
4		France	Nov-Mar	Scotland	Sept-Jan	
1		Norway	July	Scotland	Nov	
2		Finland	July	Scotland	Nov-Jan	
1		Russia	July	Scotland	Jan	
Wigeon	3	Scotland	Jan-Feb	Russia	May-June	
	1	Scotland	June	Russia	Sept	
	1	Scotland	June	Iceland	Jan	
	1	Scotland	June	France	Oct	
	1	Scotland	June	Holland	Sept	
	21	Iceland	May-Sept	Scotland	Sept-Feb	
	3	Finland	June-July	Scotland	Sept-Jan	
	2	Norway	July	Scotland	Dec-Mar	
	1	Latvia	Aug	Scotland	Feb	
	4	Russia	July-Aug	Scotland	Oct-Jan	
	3	Denmark	Oct	Scotland	Nov-Feb	
	5	Holland	Jan-Mar & July	Scotland	Sept-Jan	

Pintail	3	Iceland	June-July	Scotland	Sept-Nov
	1	Holland	Sept	Scotland	Dec
Shoveler	1	Scotland	June	Spain	Dec
	2	Latvia	May-June	Scotland	Nov & Feb
	1	Holland	Dec	Scotland	Oct
	1	Belgium	Mar	Scotland	Apr
	1	NW Germany	June	Scotland	Aug
Scaup	1	Scotland	Feb	Iceland	Spring
	12	Iceland	June-Aug	Scotland	Aug-Mar
Tufted Duck	4	Scotland	Jan & Sept	Denmark	Oct-Feb
	1	Scotland	Jan	Sweden	Sept
	4	Scotland	Dec-Jan & Aug	Finland	May-Aug
	22	Scotland	Jan & June-Sept	N. Ireland	Sept-Feb
	5	Scotland	June-Sept	Eire	Oct-Feb
	1	Scotland	Aug	France	Feb
	3	Scotland	June & Jan	Russia	Oct & May
	1	Scotland	Jan	Iceland	Sept
	1	Scotland	Jan	Germany	Jan
	10	Iceland	June-Aug	Scotland	Nov-Mar
	2	Latvia	June	Scotland	Jun & Nov
	1	Denmark	Apr	Scotland	Jan
	1	Sweden	Aug	Scotland	Jan
	1	Finland	July	Scotland	Jan
	Pochard	2	Denmark	June-Aug	Scotland	Sept & May
1		Lithuania	July	Scotland	Jan
Goldeneye	1	Scotland	Jan	Sweden	July
	6	Sweden	May-July	Scotland	Nov-Mar
Long-tailed Duck	None				
Velvet Scoter	1	Norway	July	Scotland	Oct
Common Scoter	None				
Eider	18	England	May-July	Scotland	Oct-April & June
Red-breasted Merganser	6	Iceland	June-Sept	Scotland	Oct-Mar
Goosander	1	Sweden	July	Scotland	Dec
Shelduck	3	Scotland	Apr-May	W. Germany	Sept-Oct
	9	Germany (Weser Est.)	Aug-Sept	Scotland	Jan, Feb, May- Aug, Dec

Note This appendix is based on available recoveries up to March 1968 (Tufted Duck to September 1969) but it is not certain that all recoveries are included.

Appendix 2. Calculation of 'indices of relative abundance'

In the early analyses of Wildfowl Count data interpolation was used where counts had been missed. This obviously involved much guesswork and made the results unreliable. In 1960 a technique based on comparison with a master year was evolved for tracing trends in the British duck wintering populations. The following account of this technique has been extracted from "Recent population changes in British ducks" by S. K. Eltringham and G. L. Atkinson-Willes, published in the *Twelfth Annual Report of the Wildfowl Trust* (1961).

1. A standard or master year is selected from the seasons under review,

for preference the one in which the data are most complete. In the present study the season 1959/60 has been chosen for the purpose.

2. The counts for each month of the master year are in turn compared with the data from the corresponding months in each of the other years. All waters which were counted in both the master and the paired month are included in the sample, and the numbers of ducks present on each occasion are summed to give two directly comparable totals. These individual samples vary, however, both in size and composition, according to the data available, so that direct comparisons between all years are not, at this stage, possible.

3. To overcome this, the numbers of ducks in the other years are expressed as percentages of the number present in the master year. These percentages can be used as indices to show the relative abundance of a species month by month in all the years under review. By definition the population in the master year will always have a value of 100.

Example: To compare the number of ducks present in September of 1952, 1956 and 1959 (1959 being the master year)

- (1) A sample of 52 waters held 9000 ducks on 10.9.52 and 10,000 on 15.9.59.
- (2) A sample of 74 waters held 12,000 ducks on 20.9.56 and 16,000 on 15.9.59.

Therefore:

The waters in pair (1) held 90 ducks in 1952 for every 100 in 1959 and the waters in pair (2) held 75 ducks in 1956 for every 100 in 1959. The relative numbers of ducks in September of the three seasons was thus 90, 75 and 100 respectively.

4. This comparison between months is only the first stage; the method can now be extended to provide a seasonal index, showing the relative abundance of a species over the winter as a whole. These seasonal indices are derived from the data on which the monthly indices are based; for each season the actual numbers of ducks in all the paired months are summed to give two comparable totals. These totals are then expressed as percentages of those in the master season. The advantage of this method is that due weight is given to the months when the ducks are most plentiful; a big relative increase in mid-winter, when thousands of birds are present, is clearly much more important than a similar increase in early autumn, when there may be only a few hundred. It also takes into account the length of time during which large concentrations are present.

Appendix 3.

Weather records

The weather factor which has the greatest influence on duck distribution is frost. Both the severity and the duration of frost are important since both affect the proportion of waters which freeze. The rate at which ice cover develops varies from one loch to another according to depth, area, exposure to wind, and the force of in-flow streams. Ideally, full records for each individual water involved should be used in analysing the influence of weather conditions on distribution, but such records would be impossibly complicated and in any case are not available.

On the advice of the Meteorological Office (Scotland) the records from only one station have been used to assess the relative severity of the seasons 1962-63 to 1967-68. The station selected (again on the advice of the Meteorological Office) was Blackford Hill Observatory in Edinburgh. As this site is at 400 feet it does not experience the extremes of temperature, due to frost-hollow effects, encountered at low-lying sites.

Table 7 shows the monthly mean temperatures, their difference from the 30-year average figure, and the lowest minimum recorded each

Table 7. Monthly temperatures in °C at Blackford Hill, Edinburgh

	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
November						
Mean	5.1	6.1	6.7	3.3	4.9	5.9
Variation	-1.2	-0.2	+0.4	-3.0	-1.4	-0.4
Lowest	-2.8	-2.2	-0.6	-2.8	-1.7	-1.1
December						
Mean	3.1	3.7	3.2	3.3	3.9	4.5
Variation	-1.5	-0.9	-1.4	-1.3	-0.7	-0.1
Lowest	-3.9	-6.1	-5.6	-3.9	-2.8	-4.4
January						
Mean	0.1	4.5	2.7	2.5	4.1	3.9
Variation	-3.1	+1.3	-0.5	-0.7	+0.9	+0.7
Lowest	-6.7	-3.3	-5.6	-6.1	-2.8	-5.0
February						
Mean	-0.1	4.3	3.3	3.2	4.9	1.3
Variation	-3.6	+0.8	-0.2	-0.3	+1.4	-2.2
Lowest	-6.7	-4.4	-2.8	-6.1	-1.1	-4.4
March						
Mean	5.8	3.9	4.3	6.6	6.1	6.0
Variation	+0.6	-1.3	-0.9	+1.4	+0.9	+0.8
Lowest	-5.0	-1.7	-9.4	-2.2	-2.2	-1.7

Note For each month the first line gives the mean temperature, the second gives the variation from the 30-year average, and the third gives the lowest temperature recorded.

Table 8. Number of days of snow and air frost each month at Blackford Hill, Edinburgh

	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
November						
Snow lying	8	0	0	8	0	0
Air frost	9	5	2	14	4	3
December						
Snow lying	4	0	2	4	2	2
Air frost	12	7	10	8	8	12
January						
Snow lying	26	0	5	5	4	1
Air frost	23	7	12	14	10	11
February						
Snow lying	25	2	4	10	2	10
Air frost	27	7	8	12	2	20
March						
Snow lying	0	0	10	0	0	1
Air frost	6	7	11	3	1	3

month. In Table 8 the number of days per month on which air frost was recorded and on which snow was lying are shown. The "abnormal conditions" referred to in the text are (1) in November 1965 the mean temperature was 3°C below average, snow was lying on 8 days and air frost was recorded on 14 days (early onward passage of Shoveler), (2) in January-February 1963 there was a long period of almost continuous frost and snow and the mean temperature was more than 3°C below

average in each month (marked midwinter drop in Mallard and Wigeon), (3) in March 1965 the lowest minimum temperature of the six seasons was recorded and there was more snow and frost than usual (delayed dispersal of all species considered except Mallard and Scaup).

In the three seasons chosen to represent winters of varying severity in section 3 the frost records immediately prior to the January counts were :

1963—only 2 days frost-free out of 23 (severe).

1964—not more than 3 consecutive days frost in the previous month (open).

1968—10 days frost immediately before count (near average).

Short Notes

Medium-sized race of Canada Goose in Islay

On 17th February 1969, after heavy snow the previous day, large numbers of Barnacle Geese were moving south in Islay. One party of these passed close to me, and with them was a single Canada Goose. It was only slightly larger than its companions and was certainly not as large as the introduced race *canadensis*. It was also markedly darker on the underparts than *canadensis*; this impression was not an illusion caused by light effects, since with snow on the ground the underparts of a bird appear lighter than they really are.

It is difficult to say to what race it might have belonged. To judge from Peter Scott's drawings in the Second Annual Report of the Wildfowl Trust (1949) it seems far too large for *parvipes* and too small for *interior*, but in view of the darker plumage it would seem likely that it was a small individual of the latter.

A race of Canada Goose smaller than the Barnacle was recorded in Islay on 5th April 1958 (*Scot. Birds* 1: 274).

M. F. M. MEIKLEJOHN.

Marsh Harriers summering in Scotland

In the first week of May 1969 a Marsh Harrier in dark brown plumage, with whitish crown and leading edges to the inner wings, was seen on the Scottish marsh where the 1966 pair first appeared (*Scot. Birds* 5: 25). In the last week of the month it was joined by another, markedly smaller but in similar plumage. Both birds were present until 25th July but neither was seen after that date. The pair was most frequently seen about an extensive *Phragmites* reed bed fringed with clumps of sallows *Salix* sp. No nest was found, and no display, food pass or other evidence suggesting nesting was recorded. From the arrival date of the presumed

male, young could not have been reared by the time the birds left the area.

This note was compiled from interviews with people living in the area, and on 9th July the local recorder and others saw two Marsh Harriers, in the plumages described, hunting over different parts of the marsh. Neither bird was seen again by the local recorder in four visits totalling about six hours watching. In case Marsh Harriers should return to the area this note appears over the name of the editor.

ANDREW T. MACMILLAN.

Gyr Falcons in Shetland

Doubts have been expressed about the identification as a Gyr Falcon of a raptor at Halligarth, Unst, from late May to August (actually to 16th November) 1966 (*Scot. Birds* 4: 371). Other observers reported that it exhibited characteristics of an *Accipiter*, in plumage, appearance and behaviour; and abraded plumage and its 6-month stay suggested an origin in captivity. After extensive correspondence with the observers and referees it has proved impossible to establish its identity. The observers agree that the original identification cannot be regarded as proved and that this record should be withdrawn. This is being noted also in the report of the *British Birds Rarities Committee*.

We have carefully reexamined the evidence for the identification of a dark Gyr Falcon at Kergord on 9th September 1965 (*Scot. Birds* 4: 87), since it was suggested that the published description was not conclusive. In spite of its apparently uniform dark plumage we are satisfied that it was correctly identified. The observer emphasises in correspondence that it was quite different form the Halligarth bird (which he took for a Goshawk) and gave a very strong impression of "falcon," the silhouette (in some 20 minutes observation) exactly like a very large and very heavy Peregrine ("anchor-shaped"), with no trace of ragged wingtips as it twisted and turned in the air.

EDITORS.

Sociable Plovers in Orkney

On 15th January 1969 J. S. Byres, of Carrick, Eday, telephoned to describe a bird which had been present near the farmhouse for a few days. It was a complete stranger to him and was consorting with some Common and Black-headed Gulls in a grass field, where at times it could be

observed at close range. His description left me in no doubt that it was a Sociable Plover.

It was obviously a plover type of bird but looked a bit larger and taller than either the Golden Plover or Lapwing. Its general colour was pale drab with a tinge of blue-grey, paler on the underparts, except for a dark patch across the belly and whitish beneath the tail. A prominent whitish buff forehead continued as a stripe above the eyes to meet in a sharp V behind the head. The top of the head was brownish with some buff edgings. Rump and tail were white, with a dark subterminal band. The primaries appeared to be blackish and the secondaries white, showing as a conspicuous wing-bar in flight, and the wings were rounded at the ends, though not as broadly as in the Lapwing. Legs and bill were blackish, both being rather longer than those of either Golden Plover or Lapwing.

The bird remained on Eday for just about a week. The only previous Scottish records are also from Orkney in winter. One, a 1st-winter female, was shot on North Ronaldsay on 3rd November 1926 (*Scot. Nat.* 1927: 157), and the other was seen by me at Isbister, Rendall, in 1949. Details were not published at the time, but I was in no doubt whatsoever about its identity. The bird was in a field near my house for a couple of days in early December 1949 with a small party of Lapwing. It stood noticeably higher on longer legs and had pale drab to dove grey upperparts. It was paler below but with a dark patch on the belly and whitish under the tail, which was mainly white above with a dark band near the end. Below a brownish crown were most noticeable broad white eyestripes coming together at the back of the head. In flight the wings resembled those of a Lapwing, being blunt-ended, but not so broad, and there was a noticeable white wing-stripe.

E. BALFOUR.

Recent News

ANDREW T. MACMILLAN

Probably the most important event of the autumn was the large-scale wreck of Guillemots and other seabirds on the west coast, and this is discussed in the Editorial. Other seabird news includes the discovery of a new gannetry on the Flannans in the course of Operation Seafarer, which has achieved very good cover of the coasts and islands of Scotland this year (including Rockall); it should be possible to fill in the gaps next year.

In several areas this is reported to have been a good autumn for **Little Stints** and **Curlew Sandpipers**. A fall of interesting **passerine migrants** was noted in Fife and Shetland in the middle of September, and the **Pink-footed Geese** began building-up from about the 21st, until there were over 10,000 at Loch Leven on 1st October. Near Threipmuir, Midlothian, an unusual concentration of upwards of 200 **Goldcrests** was reported in a wood on 5th October.

The **Snowy Owls** had a less successful season in 1969, all but one of the chicks dying in the nest, evidently from some form of food shortage. News of the four young **White-tailed Eagles** introduced to Fair Isle last year is that the last one has now disappeared after being seen in poor condition, soaked with **Fulmar** oil. Possibly it never learned to force the flying adults to the ground and kill them from behind instead of exposing itself to the frontal offensiveness of the nestlings.

Most people doubtless now accept that Scottish records of **Flamingos** refer to escapes. One from the Edinburgh Zoo has been noted at various places up and down the Firth of Forth over quite a period, and there are also reports from the Outer Hebrides. An interesting example of the movement of escaped birds was the arrival on the isolated island of Swona in Orkney of two **Bar-headed Geese** with other migrants in early May, following southeasterly winds.

Reviews

Nature Conservation in Britain. New Naturalist series no. 49. By Sir Dudley Stamp. London, Collins, 1969. Pp. xiv + 273; 23 plates (32 photographs) and 5 maps. 21½ x 15 cm. 36/-.

Those who were concerned with the loss of wildlife and habitats after the last war and in the early years of the Nature Conservancy ploughed a pretty lonely furrow. One of these was the late Sir Dudley Stamp, an indefatigable worker on committees to do with nature and natural resources and a member of the editorial board of the Collins New Naturalist series.

It is partly due to his efforts and those of others like him that so much has been achieved in this field. Partly also it is due to the intensification of pressure on land and water in Britain in the last ten years. It needs an effort of imagination to grasp the meaning of the loss of a habitat on the other side of the world and to care; but the loss of one's favourite downland, marsh or forest strikes home. Far more people seem to care now, and this seems an appropriate time to take stock of the whole conservation movement in Britain. Sir Dudley Stamp does this in an extremely detailed and professional manner in this book, published posthumously.

He introduces the subject by sketching the background to the need for conservation and the difficulties in a crowded country where conditions are changing rapidly. He then traces the development of the concept of conservation, from protection to management, and the implications of

this in the control of pests and in activities in nature reserves. Problems of conservation on farms, in forestry, wetlands and in different regions of Britain are treated fully. Scotland gets a chapter to itself mainly because conditions are different from those in England, there being in Scotland, as he puts it, an *embarras de richesse*; relatively, perhaps, but so much has already been lost.

This book is an excellent account of conservation in Britain to date, and how it has been achieved. The author sees problems for the future but, in his exuberance, glosses over them. He applauds the ski lift on Cairngorm and the fact that it operates all the year round; then points out the dangers of so many people in alpine Scotland; but he gives no solution. He states that a systematically managed forest is favourable to wildlife. It may be, but intensive forestry leaves little room for anything else, despite good intentions.

This is an account by an able committee man of an instalment in, so far, an undoubted success story. Whether the next instalment will describe success remains to be seen. Sir Dudley Stamp sees a double role for nature conservation in the future: education, and scientific guidance in the use of environment. The second may well be the more difficult to put over. At the moment, in any dispute, industry (say) usually wins, because the only motive apparently recognised by powerful barbarians in our materialistic society is that of cash profit. They are pressing hard on the relatively little that remains in Britain of beautiful and inspiring countryside. But what is the use of achieving affluence and even national solvency if in the end we have an environment unfit to live in?

The format, and illustrations of people, animals, and places maintain the usual high standard of the Collins New Naturalist series. There is a full bibliography of reports by official and other bodies, and four useful appendices on conservation organisation and areas, the last compiled by James Fisher.

J. D. LOCKIE.

Birds of Asia. Illustrations from the lithographs of John Gould. Text by A. Rutgers. London, Methuen, 1969. Pp. [10] + 321; 160 coloured plates. 24¼ x 18 cm. 72/-.

John Gould's *Birds of Asia*, one of the great bird books of all time, was produced in London in 35 parts from 1850 to 1883, the last three parts by Bowdler Sharpe after Gould's death. It consisted of descriptive letterpress by Gould and 560 lithographs, coloured by hand, printed by Hullmandel and Walter, Walter, and Walter and Cohn, from drawings by Gould, H. C. Richter and J. Wolf, drawn on stone by W. Hart, the whole bound into seven magnificent imperial folio volumes. One of the rarer of Gould's works, and not often offered for sale, a copy fetched £7000 in April of this year at Sotheby's.

At first sight it seems a good idea to make these famous plates available in some form or other to the present generation. This the publishers have done by making a selection of 160 of the 560 plates, with a new text by the Dutch ornithologist A. Rutgers. The reproductions are very good, and the Dutch printers have managed to convey some idea of the brilliance of the original plates. They have overcome to a reasonable extent the flatness of colour so noticeable in modern photo-lithographic or gravure reproductions of nineteenth century lithographs drawn on stone and hand-coloured. But one cannot help thinking that the publishers might well have reproduced the whole work, in say four volumes at a cost of £15-£20, judging by the modest cost of the present volume, and with the original text. Then we would have had a worthwhile facsimile, even in the reduced size, of Gould's original *Birds of Asia*, which could quite well have been successful financially and which would have been

of much more interest to both ornithologist and bibliophile, though admittedly unlikely to sell to a mass market.

Reproductions of Gould and Audubon have appeared before. The Gould reproductions were not particularly successful, but the 1937 complete Audubon, after being remaindered before the war, quickly sold out and has since become a collector's item; and the plates were not nearly so well produced as those in the book under review. A market could well have been reached which the present work will certainly not interest; but at least the book will serve as an introduction to Gould, whose works are of course out of reach of most people today.

It may not be generally known that our great libraries in Edinburgh are well supplied with Gould's works, available to all for consultation. There is a growing appreciation of the ever-differing interpretation of the bird artist, as compared with the colour photographer, although their efforts are indeed complementary. It is good to find attention drawn to a great bird illustrator of an earlier age. If for no other reason this book is worth buying.

RITCHIE SEATH.

The Hill of Summer. By J. A. Baker. London, Collins, 1969. Pp. 159. 21 x 13½ cm. 28/-.

J. A. Baker has followed his first book, *The Peregrine*, acclaimed so widely two years ago, with another, woven likewise from the fabric of night and day, of landscape, wind, and living things. *Hill of Summer* is the obverse side of the same compounded year, as different in mood as the change in season. Winter has given way to a languid summer, and the strange obsessive search for the Peregrine is held in abeyance. The book describes twelve landscapes suffused with the song of larks and the azure sky, landscapes to enjoy at leisure, letting each page soak into the eye.

The language and imagery is as finely judged as ever and stays in the memory. "A weasel runs silently through the bracken. It burns, like a reddish-brown flame, along the fuse of the scent it follows." The observation is cool, detached, coming on fire in the telling, but while the eyes are watching they have no hindrance from the emotions. How many of us, following a Hobby in full chase, would see the "spruts of dead grass that drifted down", behind its pursuit, or see beyond the gorse blossom, the "dusty airless caves of shadow" underneath? Both books constantly challenge us to keep our observation fresh, unprejudiced by the well trodden behaviour of our eyes.

Mr Baker has now given us a vivid cycle of the year. One misses occasionally the more mundane non-happenings of daily life, and perhaps these will provide an equally potent source of inspiration in the future. The author, revealing himself a little more in this reflective summer mood, should have the last word. "One wishes only to go forward, deeper into the summer land, journeying from lark-song to lark-song, passing through the dark realm of the owls, the fox-holdings, the badger-shires, out into the brilliant winter dominion, the sea-bleak world of the hawks."

JOHN BUSBY.

Birds of the British Isles and their Eggs. Wayside and Woodland series.

By T. A. Coward. Edited by J. A. G. Barnes. London, Warne, 1969. Pp xvi + 359; 97 colour plates, 80 photographic plates, 1 figure. 21½ x 15 cm. 55/-.

This is a taller single-volume revision of the classic work, first published in 1920, on which a generation of birdwatchers was reared. Thorburn's (and other's) plates are supplemented with photographs by the Bottomleys and Eric Hosking, and there are a few new plates by Robert Gillmor. After 50 years there is life in this book still.

A.T.M.

Dawn Chorus and Nightingale and Mountain and Highland Birds. Shell Nature Records. British Birds series DCL 708, 709. Two 33.1/3 r.p.m. 7" records in illustrated descriptive sleeves. Recorded by Lawrence Shove and others, and edited by him. Published 1969 for Shell-Mex and BP by Discourses Ltd, London. 14/3 each.

Eighth and ninth in a series previously reviewed (*Scot. Birds* 4: 326, 523; 5: 65). Northern recordings include the work of David Bradley, John Kirby, Charles Palmar (consistently misspelt) and Patrick Sellar. Available from SOC Bird Bookshop.

A.T.M.

The Scottish Ornithologists' Club

Revenue Account for the year ended 30th June 1969

	Year to 30/6/69	Year to 30/6/68
INCOME—		
Subscriptions received for year	£2258	£2168
Income Tax recovered on covenanted subscriptions	311	302
Dividends and Interest received (gross)	228	229
Surplus on Bookshop (Sales £4302)	1157	900
Sale of "Scottish Birds" to non-members	91	90
Sundry Sales less sundry purchases	56	21
Contribution from the World Wildlife Fund towards facilities granted by the Club	27	6
Donations received	3	53
	<u>£4131</u>	<u>£3769</u>
EXPENDITURE—		
Branch Expenses including lectures	£356	£340
Travel Expenses of Council Members and of Delegates to Conferences	83	51
Secretarial Services	2240	2090
Office Expenses	505	446
Scottish Centre for Ornithology and Bird Protection : Club's share of running expenses including £100 contribution to the House Fabric Fund for year 1968	385	395
Cost of books purchased for Library	54	113
Cost of publishing "Scottish Birds" (less advertising revenue £211)	704	649
Net cost of Annual Conference	2	18
Subscriptions paid	33	29
	<u>£4362</u>	<u>£4131</u>
Excess of Expenditure over Income carried to Balance Sheet	231	362
	<u>£4131</u>	<u>£3769</u>

Balance Sheet as at 30th June 1969

	Year to 30/6/69	Year to 30/6/68
Accumulated Surplus as at 30th June 1968	£4221	£2758
Deduct: Excess of Expenditure over Income for year	231	362
	<u>£3990</u>	<u>£2396</u>
Add: Share of Scottish Ornithological Cruise Ltd. surplus on liquidation	—	1810
Premium on repayment of £500 5% Defence Bonds	—	15
	<u>—</u>	<u>1825</u>
Accumulated Surplus as at 30th June 1969	<u>£3990</u>	<u>£4221</u>

(Note: £1000 of this surplus is earmarked for the House Fabric Fund)

Made up of:

Cash in hand and Bank current account	£147	£167
Savings Bank Accounts	557	42
Bookshop stock at valuation	840	602
Tie and Badge stocks at valuation	133	153
Debts due to Club	298	261
Investments at cost, as below	3500	4000
	<u>£5475</u>	<u>£5225</u>

Less:

Life Membership Fund	£300	150
Subscriptions paid in advance	55	41
Debts due by Club	690	358
Sum due to Endowment Fund	143	158
Sums earmarked for:		
Library Binding	238	238
Painting	59	59
	<u>1485</u>	<u>1004</u>
	<u>£3990</u>	<u>£4221</u>

Investments as at 30th June 1969:

	Market value	At cost	At cost
Loan to Edinburgh Corporation at 5½% at 7 days call	£ —	£ —	£500
Loan to County Burgh of Wigan at 7¼% (formerly 7¼%)	600	600	600
Safeguard Industrial Investments Ltd.— 700 Ord. shares of 5/- each	367	508	508
£950—6½% Treasury Loan 1976	869	946	946
£1300—British Electricity 3% Guar. Stock 1974/77	917	952	952
£550—5¼% Conversion Stock 1974	468	494	494
	<u>£3221</u>	<u>£3500</u>	<u>£4000</u>

ENDOWMENT FUND

(The free income of which is available for the advancement of Ornithology)

Revenue Account for the year ended 30th June 1969

	Year to 30/6/69	Year to 30/6/68
INCOME—		
Interest and Dividends received (gross)	£190	£178
EXPENDITURE—		
Grant as detailed in Report of Council	33	30
Unexpended Income for the year	<u>£157</u>	<u>£148</u>

ENDOWMENT FUND

Balance Sheet as at 30th June 1969

Endowment Fund as at 30th June 1968	£3080	£2080
Add: Additions to Fund during year	3	1000
	<u>£3083</u>	<u>£3080</u>
Less: Loss on realisation of £1151 3½% War Stock ...	564	—
	<u>£2519</u>	<u>£3080</u>
Accumulated unexpended Income		
as at 30th June 1968	£277	129
Add: Unexpended Income of year	157	148
	<u>434</u>	<u>277</u>
	<u>£2953</u>	<u>£3357</u>
Made up of:		
Investments at cost as below	£2441	£3000
Royal Bank of Scotland Deposit Account	369	199
Due by Club's General Funds	143	158
	<u>£2953</u>	<u>£3357</u>

Investments as at 30th June 1969:	Market value	At cost	At cost
£1151 3½% War Stock	£ —	£ —	£1000
976 Units of the Equities Investment Trust for Charities Ltd.	1708	1000	1000
£1140 5% Exchequer Stock 1975/78	872	1000	1000
£440 8½% Convert. Unsecured Loan Stock 1993/98 British Printing Corporation Ltd. 396	396	441	—
	<u>£2976</u>	<u>£2441</u>	<u>£3000</u>

HOUSE FABRIC FUND

Summary of Accounts for year to 30th June 1969

	Year to 30/6/69	Year to 30/6/68
RECEIPTS		
Balance as at 30th June 1968	£110	£26
Year's rent from Royal Society for Protection of Birds	—	100
Year's rent from Mr and Mrs George Waterston ...	100	100
Rent from World Wildlife Fund for period from 1st November 1968	87	—
Annual Contribution from Scottish Ornithologists' Club Revenue Account	—	100
Miscellaneous Interests	4	1
	<u>£301</u>	<u>£327</u>
EXPENDITURE		
Repairs and Maintenance	£5	£33
Property Burdens	171	166
Insurance	18	18
	<u>£194</u>	<u>£217</u>
On Deposit with Dunedin Building Society	£94	
At credit of account with Morton, Fraser & Milligan, W.S. ...	13	
	<u>£107</u>	<u>£110</u>
	<u>£301</u>	<u>£327</u>

Note : The balance of £107 includes £19 unexpended from the Harvey Donation.

EDINBURGH, 3rd October, 1969.—I have audited the foregoing Revenue Accounts for the year to 30th June, 1969, and the Balance Sheet at that date. I have accepted as correct the Subscriptions and other receipts shown as received in the Books and the value placed on the Bookshop Stock. Subject to this I certify that in my opinion the foregoing accounts are correctly stated and sufficiently vouched.

(Signed) ARTHUR WALKER,
Chartered Accountant.

REPORT OF COUNCIL

Your Council submits the following Report for the year 1968/69 :

Membership At the end of the session, the Club had 2056 members. For the third consecutive year over 300 new members joined (323), but because of more deaths, resignations and lapsed subscriptions than usual (216) the net increase was only 107. Three more members transferred to Life Membership and one was elected an Honorary Member. A table of membership for the last six years is given below (p. 476).

The number of Deeds of Covenant signed by members rose from 313 to 322, representing 370 subscriptions and contributing £311 to the income of the Club. The Council acknowledges with thanks this assistance and hopes that many more members will consider paying their subscriptions similarly, thus helping the Club at no extra cost to themselves.

	30/6/64	30/6/65	30/6/66	30/6/67	30/6/68	30/6/69
Ordinary	1194	1263	1373	1524	1677	1771
Junior	198	222	252	259	265	274
Life	—	—	—	—	3	6
Honorary	3	3	3	4	4	5
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	1395	1488	1628	1787	1949	2056
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Increase	134	93	140	159	162	107

Honorary Member At a Council Meeting in January, Mr Duncan Anderson, the Warden of the Duddingston Loch Bird Sanctuary, was elected an Honorary Member of the Club.

Business of Council Five Meetings of Council were held during the session. The Management Committee also met four times, considering among other important business the staffing requirements of the Club. As a result of their recommendations, a new Club Secretary, Major A. D. Peirse-Duncombe, was appointed in March, with Mrs George Waterston continuing as Deputy Secretary and Mrs James Smillie as Membership Secretary. Miss Joan Howie helped in the office for two months during the busy Conference period of 1968.

Council was concerned at Edinburgh City's Development Plans for land at Bawsinch, adjoining the Duddingston Loch Bird Sanctuary. A letter was sent to the Secretary of State for Scotland objecting to the use of this area for playing fields unless a buffer zone was created between the fields and the Sanctuary. The Club was represented by Mr D. G. Andrew, W.S., at a Public Inquiry held in Edinburgh in July; the result of this is awaited.

Mr C. G. Headlam continued his work as Organiser for Scotland of the B.T.O. Atlas Scheme, to which many Club members have given active support. Council thanks all those who are helping with this important project and urges still more members to assist, to ensure that a total coverage of Scotland is achieved. Members of the Club have also assisted with Operation Seafarer, the national census of seabirds organised by the Seabird Group.

Council was pleased to lend support to the appeal for a new Bird Observatory and Hostel on Fair Isle, and is glad to record the success of this venture and to know that the new premises are now completed.

The Club was represented on the British Section of the International Council for Bird Preservation by Sir Landsborough Thomson and Mr George Waterston, and on the Duck Working Group of the International Wildfowl Research Bureau by Miss Valerie Thom.

Endowment Fund The East Lothian County Council and Northern Lighthouse Commissioners have given permission for the disused lighthouse garden at Barns Ness, East Lothian, to be used by ornithologists for migration studies. Your Council approved the expenditure of up to £40 from the Endowment Fund to make the area sheep-proof and to plant shrubs. Club members are carrying out the work, which will be completed this autumn.

Annual Conference The Twenty-First Annual Conference and Annual General Meeting, held in Dunblane, was attended by 310 members and guests. Dr M. W. Holdgate (Deputy Director, Nature Conservancy) was the principal speaker, lecturing on "The Birds of the South Atlantic Islands." He was followed by Mr I. J. Ferguson-Lees (Editor of "British Birds") who spoke on "Palearctic Migrants and African Birds at Lake Chad." Professor M. F. M. Meiklejohn delighted us on the Sunday morning with his "Ornithological Reminiscences."

Branches A full programme of lectures was given in the nine Branches, and the Thurso Group met regularly during the winter. Summer and

winter excursions were again organised by Branches, and the Club excursion to the Solway goose grounds was once more a success. Club members helped at stands at the Ayr Show and the Falkirk Spring Fair, at both of which interest in the Club was stimulated.

"Scottish Birds" Four numbers of the journal were published during the year. The summer number contains the first annual Scottish Bird Report, replacing the quarterly Current Notes. Your Council wishes to records its thanks to the Editor, Mr A. T. Macmillan, and to all the Local Recorders for their work in the production of this excellent Report.

Sincere thanks are expressed also to Dr T. C. Smout, who has retired from the position of Business Editor after holding that post for over seven years, and also to Mr M. J. Everett for his recent services as Assistant Editor. Mr Everett has been appointed to the post of Assistant Reserves Manager of the Royal Society for the Protection of Birds at their headquarters in Bedfordshire.

Club Library The Library Committee met twice during the session to discuss library requirements and the binding programme. No major purchases were made apart from certain new reference books. A number of old and new books, journals and reprints were presented to the library and Council thanks the donors for these gifts.

Bookshop Support for the Bookshop has again increased, with expanding sales both at home and abroad. The assistance given to us by the British Trust for Ornithology, Royal Society for the Protection of Birds, and Scottish Wildlife Trust, in providing space for book displays at their Annual Conferences and Meetings, has added greatly to our publicity and sales, and Council warmly appreciates this help.

Scottish Centre In October 1968 the Scottish Office of the Royal Society for the Protection of Birds, which has occupied rooms in the Centre since its inception in 1959, moved to larger premises at 17 Regent Terrace. Council wishes to express its thanks for the help given by the R.S.P.B. staff over the years. We are glad to feel that, although physically removed four doors from us, they remain part of the conception of the Scottish Centre, and we are appreciative that cooperation between the two societies continues as strongly as before.

Part of the basement of 21 Regent Terrace has now been leased to the World Wildlife Fund, of which Mr Shewan Lownie is the Regional Organiser, Scotland.

The Centre continued to be used for informal discussion groups and for meetings of the Fair Isle Bird Observatory Trustees, the Isle of May Bird Observatory and Field Station Committee, and the Aberlady Bay Nature Reserve Biological Committee.

During the summer many British and Overseas visitors came for help and advice, and numerous postal enquiries were dealt with throughout the year.

Acknowledgments In conclusion, and as usual, Council wishes to record its sincere thanks to those who have helped the Club so freely throughout the session, by covenants, donations, lectures, Branch organisation, editorial assistance, service on special committees and in many other unseen and useful ways.

For the Council, W. J. EGGELING, President.

THIRTY-THIRD ANNUAL GENERAL MEETING OF THE CLUB

The Thirty-third Annual General Meeting of the Club was held in the Hotel Dunblane Hydro, Perthshire, on Saturday 25th October 1969 at 6 p.m. Dr W. J. Eggeling, President of the Club, presided over an attendance of about 125 members.

Apologies Apologies for absence were received from Dr David Boddington, S. L. Hunter and J. MacGeoch.

Minutes The Minutes of the Thirty-second Annual General Meeting, held in Dunblane on 26th October 1968, were approved and signed.

Report of Council The Report of Council for Session 32, presented by the Chairman, was adopted.

Accounts The Accounts for the year ending 30th June 1969, presented by the Hon. Treasurer, were approved.

Appointment of Auditor Mr Arthur Walker C.A. was re-elected Auditor for the ensuing session.

Election of new Office Bearers and Members of Council In the absence of any other nominations, the Council's recommendations for the following elections were approved. President: A. Donald Watson to replace Dr W. J. Eggeling who had completed his term of office. Vice-President: George Waterston to replace A. Donald Watson. Council Members: Dr I. T. Draper and J. MacGeoch to replace H. A. Maxwell and R. T. Smith, who were due to retire by rotation. The Chairman thanked the retiring members for their services to the Club.

Subscription The Meeting approved the recommendation of Council that Membership rates should be increased, and the proposed amendment to the Constitution that under 3 MEMBERSHIP (e) the rates should now read as follows:

"The Annual Subscription shall be 40s; or 10s in the case of Members who are under 21 years of age, ... Married couples shall be eligible for Joint Membership at an Annual Subscription of 60s, ..."

The Chairman said that existing Members will pay the new rates from 1st October 1970, but those joining the Club will pay the new rates from 1st November 1969.

It was agreed that Council would consider a suggestion that the age limit for Junior Members might be reduced from 21 to 18 years of age.

Conference Location The Chairman reminded Members that last year the question of a different location for the Annual Conference was raised. He explained that the Aviemore alternative had been investigated but the requisite facilities were not as good as Dunblane.

Secretarial Staff The Chairman outlined the changes in staff structure which had come into effect since the last Annual General Meeting. The advice of the Management Committee that two full-time staff were required had been accepted. Mrs Waterston had suggested that either an Assistant Secretary should be recruited, capable of taking over from her within five years, or that she herself should become Deputy Secretary and a Secretary be sought. In the event, after repeated advertisement, no suitable Assistant was found, so the post of Secretary was advertised and Major A. D. Peirse-Duncombe was appointed.

The Chairman paid tribute on behalf of the Club to Mrs Waterston: it was largely due to her work throughout her period as Secretary that the Club had attained its present position; it was the hope of everyone that the appointment of Major Peirse-Duncombe, to whom we extend a warm welcome, would reduce the burden of work upon her and give her at least a little time to call her own.

Votes of Thanks The Chairman moved a warm vote of thanks both to all those who had given help at the Conference and to all the Club's staff. The Meeting closed with a hearty vote of thanks to the retiring President by A. Donald Watson, the President-elect of the Club.

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FOR SESSION 33**

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Saturday 7th March, CAERLAVEROCK. 9 a.m. depart Wellington Square, Ayr. Bring packed lunch.

Note It is hoped to arrange a bus for this visit. Will members please contact the Secretary (tel. Alloway 41828) before 28th February.

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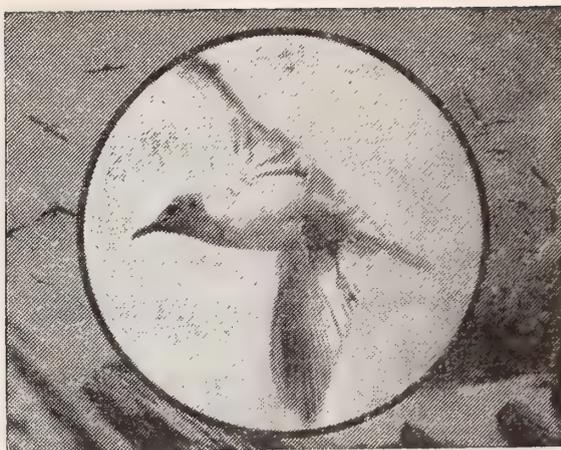
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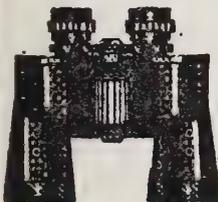
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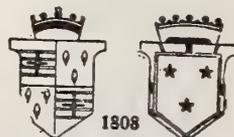
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VOLUME 5

1968 - 1969

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Index

The index is in three parts. The first is a general index to the various sections of the journal; the second is a list of all papers and short articles; and the third is an index of all significant mentions of each species. Only the first page of each reference is given, except in the index of papers and short articles.

English names are used throughout. For scientific names we still wait patiently for the promised new British List. Meantime we use the amended 1952 BOU list (see *Scot. Birds* 2 : 515). A full list of scientific names was given at the end of volume 2 (with additions at 3 : 454 and 4 : 602), and the short key here lists only those species not previously mentioned.

The species index is selective rather than comprehensive. Titles of short papers and short notes dealing with particular species are included in abbreviated form, and various subheadings are added; otherwise only page numbers are given. All references in short and current notes, reviews of changes in status, local status lists, and lists of unusual occurrences, have been indexed. As most contributions are concerned with migration and distribution of birds in Scotland it may be generally assumed that where no further details of the references listed for a species are given they are mostly of this nature. Passing and comparative references have usually been omitted, and also references within the body of papers, reviews, obituaries and other contributions, unless they are status reports or considered of special interest apart from the context in which they appear. In particular it has to be emphasised that detailed and valuable information on migration and numbers of common birds, in papers such as the Isle of May reports, finds no place in the index to species.

From 1968, with the introduction of an annual Scottish Bird Report (*Scot. Birds* 5 : 302-356), most records of migration, distribution and numbers appear in one place (instead of in the quarterly current notes); **this reference is indexed once only under each species**, following the abbreviation sbr, though it may well embrace material related to other subheadings in the same index entry.

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Scientific Names

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- Falco biarmicus* Lanner Falcon
Chrysolophus pictus Golden Pheasant
Chettusia gregaria Sociable Plover
Cursorius cursor Cream-coloured Courser
Larus philadelphia Bonaparte's Gull
Hydroprogne caspia Caspian Tern
Uria lomvia Brünnich's Guillemot
Nucifraga caryocatactes Nutcracker
Turdus dauma White's Thrush
Hippolais pallida Olivaceous Warbler
Hippolais caligata Booted Warbler
Sylvia melanocephala Sardinian Warbler
Motacilla citreola Citrine Wagtail
Serinus canarius Serin
Zonotrichia albicollis White-throated Sparrow
Emberiza leucocephalos Pine Bunting
Emberiza caesia Cretzschmar's Bunting

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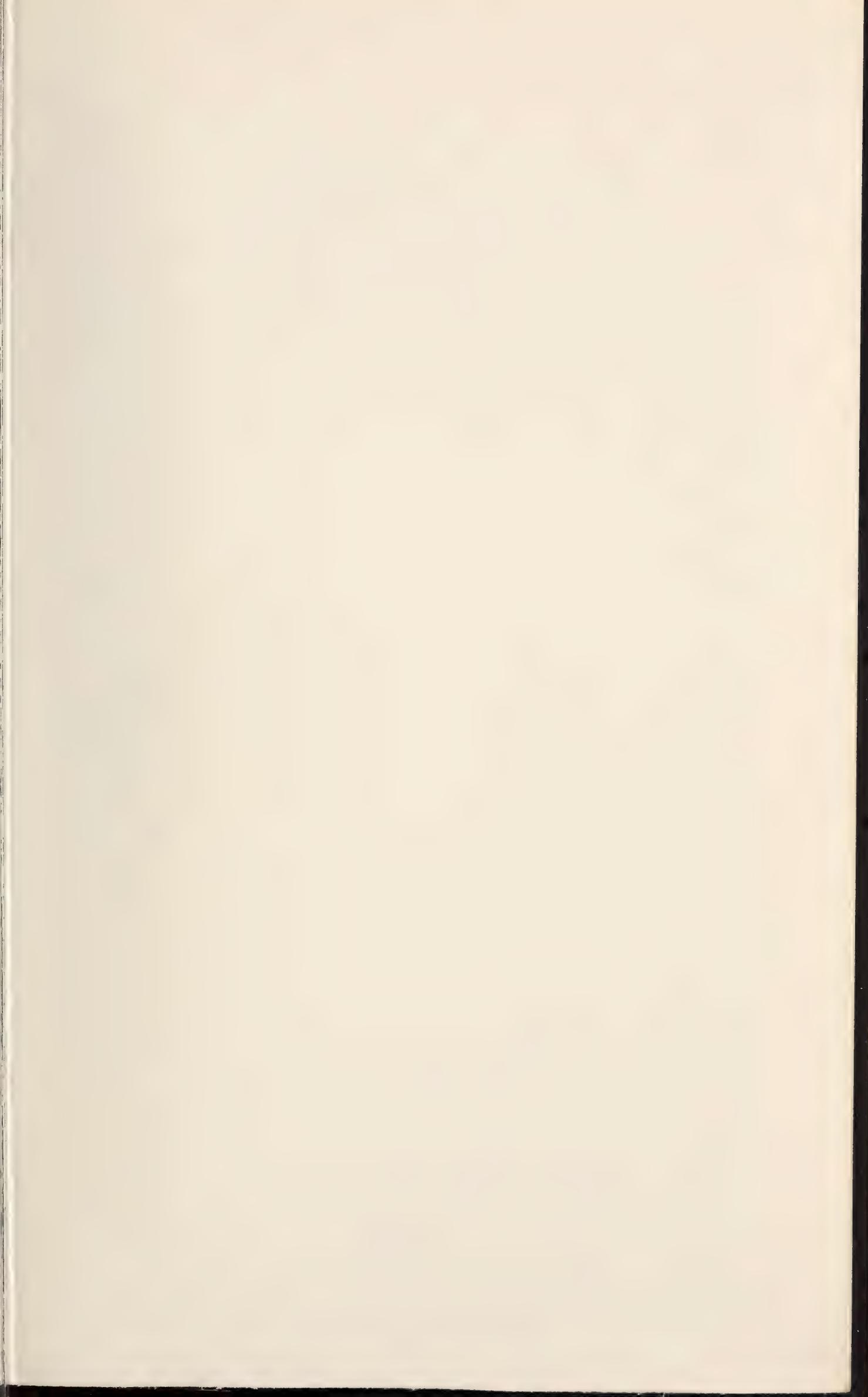
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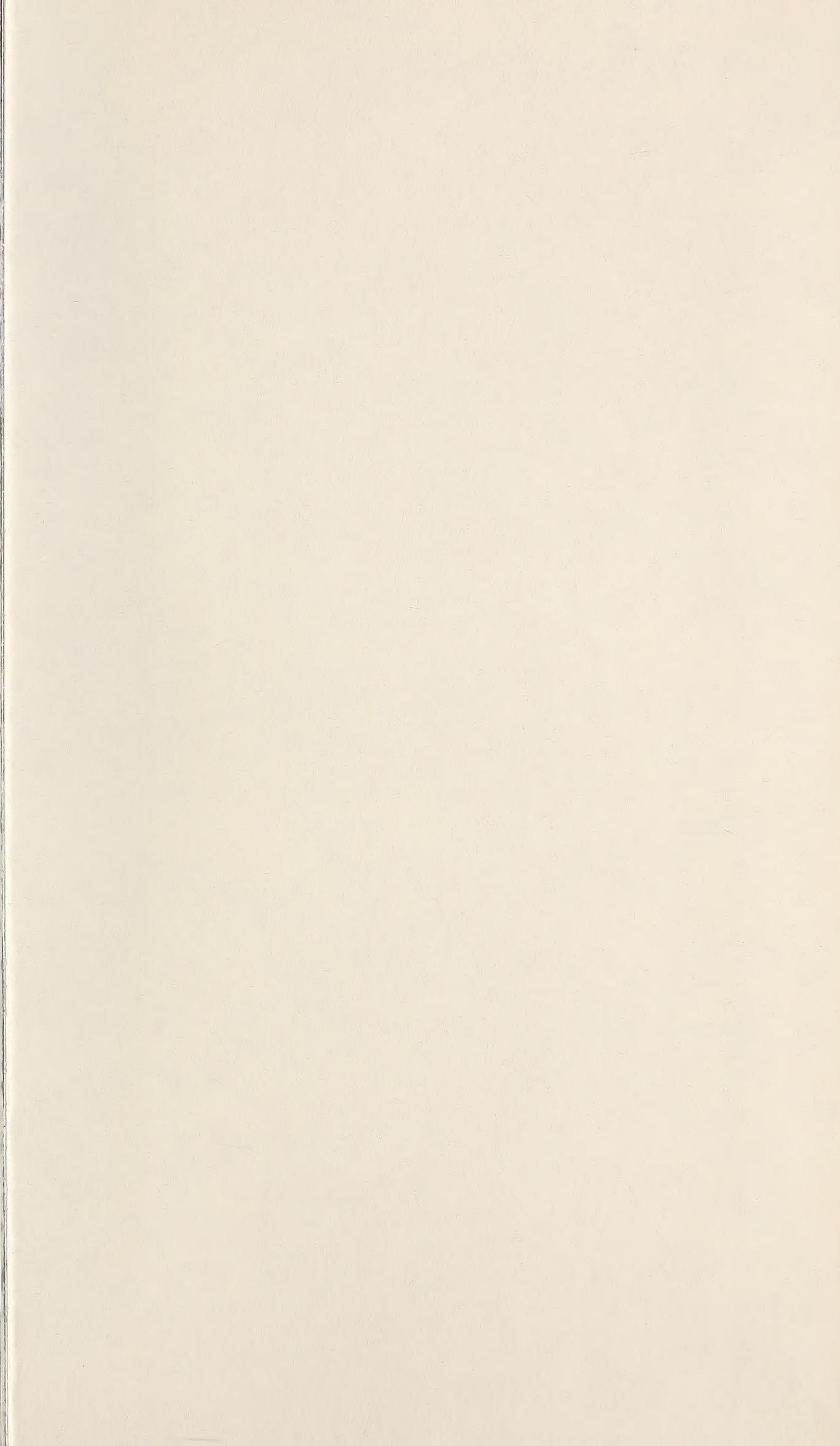
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