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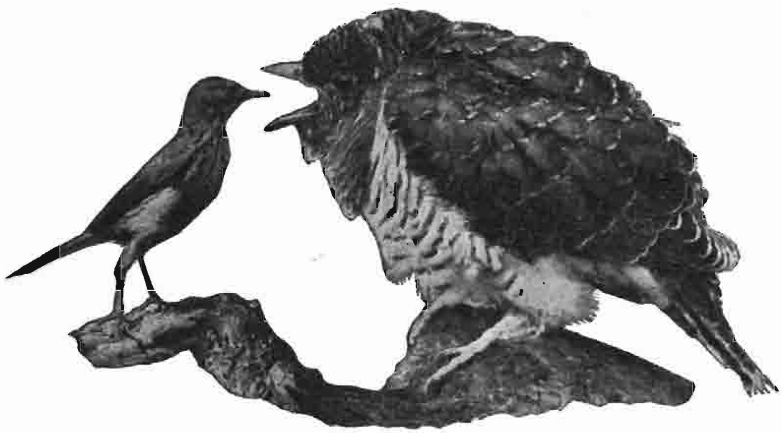

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THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB

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Edited by Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12.
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Business Editor T. C. Smout, 93 Warrender Park Road, Edinburgh 9.

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THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB

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. 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 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.

Fair Isle Bird Observatory Report for 1967. An old favourite with an attractive new make-up.

A new RSPB Reserve in Shetland. R. J. Tulloch, 1968. *Birds* 2: 59-61. Fetlar.

Changes in status among breeding birds in Britain and Ireland. J. L. F. Parslow, 1967-68. *Brit. Birds* 60: 2-47. 97-123, 177-202, 261-285, 396-404, 493-508; 61: 49-64, 241-255. Stimulating and highly important survey.

The Bass Rock albatross. W. L. N. Tickell, 1968. *Brit. Birds* 61: 272-273. Comments on several points.

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

Movements and mortality of British Kestrels. D. W. Snow, 1968. *Bird Study* 15: 65-83.

Autumn movements and orientation of waders in northeast England and southern Scotland, studied by radar. P. R. Evans, 1968. *Bird Study* 15: 53-64.

Stonechat breeding statistics. J. S. Phillips, 1968. *Bird Study* 15: 104-105. Ayrshire study.

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 fouell, 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 of 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 *Gibean 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 greese 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 hiurtach*').

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" (Elder, *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 leucorrhoa.*

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 Buaile 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 Sceapull, 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

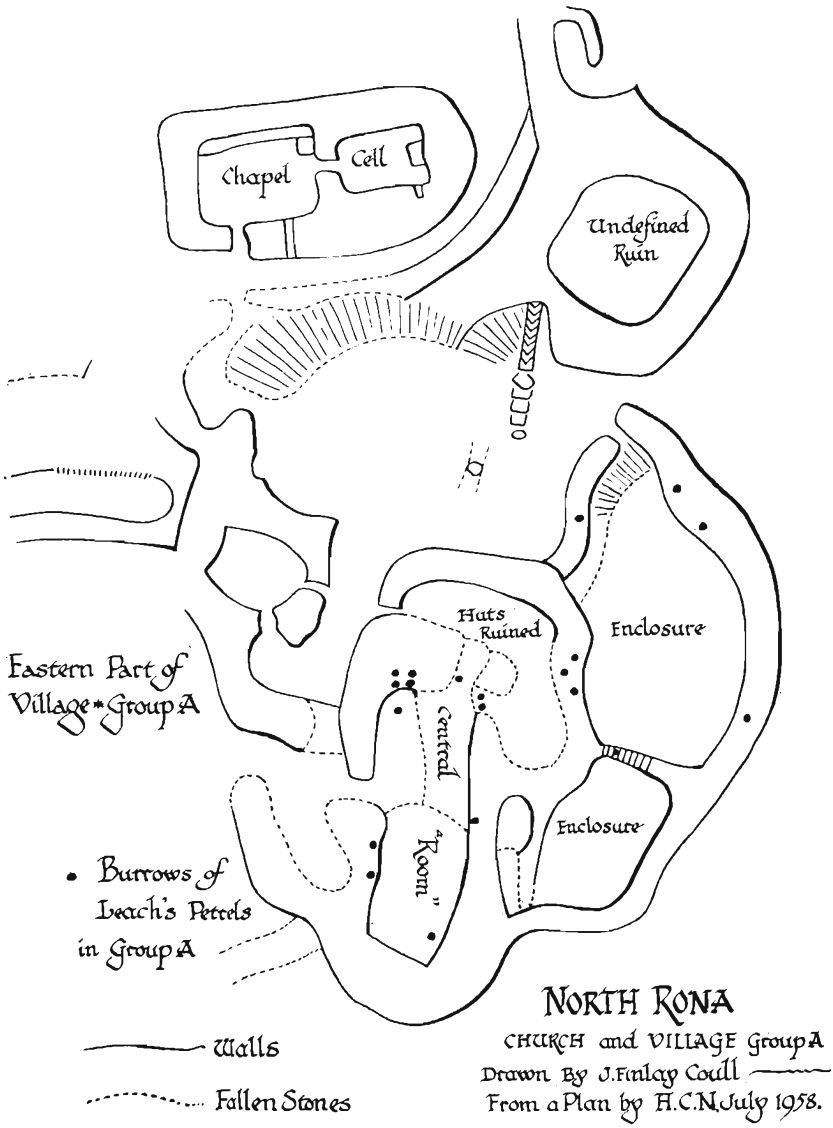

FIG. 2. Sketch map of North Rona chapel and village area, showing burrows of Leach's Petrels in Group A.

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 amost 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 Buaile 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 Buaile 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	
	602	c.180	
Occupied North Cliff sites 1958	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
	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 Buaile 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 squattering 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). Harrisson (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; Harrisson (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 (Eggeling 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 Sceapull 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 Sceapull, 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 Sceapull. 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 carcases 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 carcases. 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". Harrisson (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. Harrisson (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 themseves 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 (Daring 1940; Atkinson 1949). Skins and carcases 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 carcases 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). Harrisson (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. Harrisson (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. Harrisson (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 Harrisson (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 Harrisson (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. Sceapull, 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 Sceapull. 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, Harrisson (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 south-west 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 Buaile 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 Buaile 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 Buaile 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 Flanuis.

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 Willgohs and George Waterston.

Photograph by Dennis Coutts

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 or 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 midday. 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

We are indebted to all the observers who visited North Rona and supplied ornithological observations for late autumn. We are especially grateful to Dr Morton Boyd, who pioneered and organised these expeditions to study the grey seals of North Rona and invited us to accompany him in 1961 and 1962; he also most kindly read an earlier draft of this paper and offered useful criticisms.

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 slighter 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 downcurved 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 Tyninghame 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, hardheads, 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, meadowsweet, 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 Beauly 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. and 8 to 9 p.m. Conference Office in the Hotel Dunblane opens 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 afternoon will be given.

10 p.m. Meeting of Local Recorders.

9.30 p.m. to midnight Lounges available for informal discussions and refreshments (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 Conservancy), 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 Conference 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 Meeting 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-

	sor M. F. M. Meiklejohn.
10.45 a.m.	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 wildlife 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.

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

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.

The London Natural History Society

This Society, which covers all branches of natural history, has a strong ornithological section. Lectures, film shows, practical demonstrations and field meetings are arranged and research work is undertaken, most, though not all, of these activities taking place within the Society's area, that is within a 20 mile radius of St Paul's.

Members of this Society help run the independent Dungeness Bird Observatory, which provides experience in bird ringing, studying birds in the hand and migration watching.

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:

MRS L M. P. SMALL,
13 Woodfield Crescent,
Ealing, London, W.5.

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