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THE JOURNAL OF THE  
SCOTTISH ORNITHOLOGISTS' CLUB

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SPRING 1981

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# SCOTTISH BIRDS

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Vol. 11 No. 5

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Edited by D. J. Bates

## George Waterston - a tribute

(From an address to the 33rd annual conference, North Berwick,  
25 October 1980)

George Waterston's name has long been synonymous with that of the Scottish Ornithologists' Club. The SOC was George's brainchild. As its first secretary he was instrumental in setting-up the club, in stimulating its revival and expansion in the early post-war years and in initiating the first ornithological conference—away back in 1947. That was a joint BOU/SOC affair but it led to the regular pattern of SOC conferences with which we are now so familiar. Other milestones in the club's career that we owe to George are the memorable Bird Islands Cruise of 1966, the establishment of the Scottish Centre for Ornithology and the Bird Bookshop. He not only had the vision to see the opportunities but also the strength of purpose to ensure that they were realized.

When he ceased, in 1959, to act as SOC secretary George was immediately elected a council member and at the end of his five year term became an Honorary President. This ensured his continuing involvement in the club's affairs—and that involvement remained an active one right up to the time of his death. There were many ways in which George was unique, one of them being that he did not serve as club president until eight years *after* he had been elected an Honorary President—normally, of course, this sequence is reversed. His term of office as president was unfortunately marred by the ill-health which dogged the last years of his life. But, where many a lesser mortal might have sat back and taken things easy, George continued attending council and library committee meetings whenever he was able to do so, making periodic flying visits to his beloved Fair Isle, and responding enthusiastically to bird news from his many friends.

That enthusiasm was among George's most memorable qualities and it must, I am sure, have inspired and encouraged many of you in your early birdwatching days as it did me. Infectious enthusiasm, and the ability to charm people into doing what he wanted—what more useful qualities could any-

one working in the bird protection field wish for? Add to these modesty, sincerity and friendliness and it is obvious why George was so popular and why he will be so greatly missed.

As a person George will long be remembered with affection and respect. As the moving spirit behind so much of what the SOC is and does he should, I believe, also be remembered in a more tangible way. Council has agreed that some form of memorial would be both appropriate and desirable; we would welcome suggestions from members as to the form such a memorial might take.

V. M. THOM (*President*)

## The breeding habitats of waders on North Uist machair

R. J. FULLER

(Plates 17-18)

*Machair is outstanding for its breeding waders. Over a large area as many as six species breed at densities comparable with almost anywhere in Europe.*

The west coasts of the Outer Hebrides, particularly of North Uist, Benbecula and South Uist, are famous for their machair formations. These floristically rich grasslands have relatively few species of breeding birds but their populations of waders are outstanding in a national context (Fuller, Wilson and Coxon 1979). Numerically the most important species are Oystercatcher, Ringed Plover, Lapwing, Dunlin, Snipe, and Redshank.

The habitat distribution of machair waders has been described in broad terms by Fuller, Wilson and Coxon (1979) but remarkably little quantitative information exists on densities and distribution. Fuller (1978) compared population densities of Ringed Plover and Dunlin on different parts of the machair in 1977 and Wilson (1978) published densities on several small areas of machair on South Uist. This paper describes the distribution and densities of nesting waders between different land types on Baleshare, an 880 ha machair island off North Uist.

### The study area

Machair is technically the predominantly level sandy plain lying in a narrow belt along the west coasts of the Uists and Benbecula (Ritchie 1976, 1979). Sometimes the term machair

is applied in a broader context to distinguish the greener, relatively fertile west from the peatlands of the interior and the east. Baleshare encompasses extensive tracts of all the land types which are typical of the west coasts of the Uists.

Eight land types were defined on Baleshare, principally on the basis of topographical and drainage characteristics. The distribution of each type is shown in fig. 1 and their areas are given in table 1 (below).

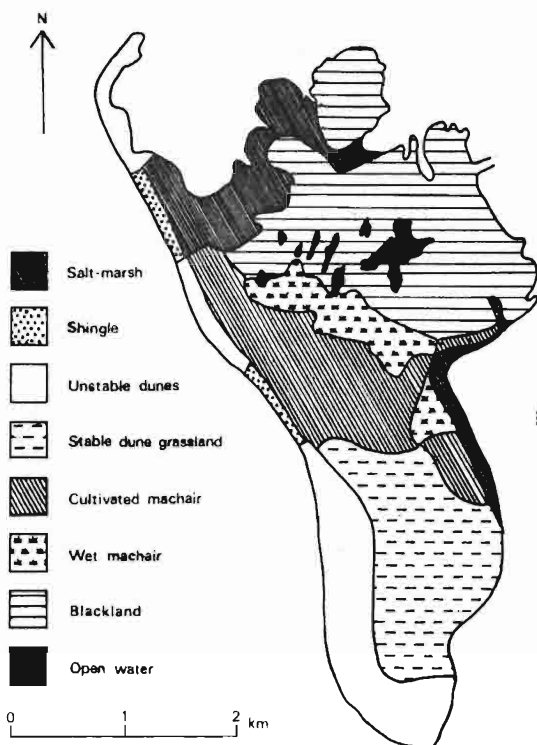


Fig. 1. The approximate distribution of major land types on Baleshare, North Uist. The shell sand beaches of the west coast are omitted for the sake of clarity.

**Shell sand beach** Along the exposed west coast there is a narrow fringe of unvegetated sand with small amounts of unstable shingle on the upper levels.

**Saltmarsh** The more sheltered coasts support heavily grazed grass swards which are subject to flooding on the highest tides only.

**Shingle** Very narrow strips of shingle occur at several points inland from the shell sand beach where there are no backing dunes.

**Unstable dunes** The shell sand beach is bordered by unstable dunes for much of its length. These widen into an extensive system at the southern end of the island. The unstable dunes consisted of hummocks with much marram *Ammophila arenaria* and bare sand; they were completely dry.

**Stable dune grassland** The hummocks were lower than on the unstable dunes and were covered with a short closed sward. Between the hummocks there were intervening level plains which held standing water outside the breeding season. This land type is probably a hillocky form of the machair plain (Ritchie 1979).

**Cultivated machair** An entirely level and dry plain which is cultivated on a strip rotation (Wilson 1978).

**Wet machair** A level and permanently wet form of grassland lies between the cultivated machair and the blackland.

**Blackland** The term blackland refers to the non-sandy soils which on Baleshare are confined to the northeast of the island. This ground is frequently undulating with many outcropping rocks and, in the lower parts, marshes. There are several lochs and all the habitations are situated in this zone. The blackland is now grassland and it exists in its present form as a result of the peat being stripped off long ago. The land was largely under cultivation in the past (Caird 1979) and has probably been much fertilized artificially with shell sand, seaweed and manure. Some sand may have blown over the blackland from the dunes and machair plain.

Three types of blackland could be recognized: wet blackland—ground with large areas of continuous marsh; damp blackland—ground with smaller scattered marshes; dry blackland—predominantly dry ground.

## Methods

The work was carried out between 24th May and 9th June 1979. The island was divided into zones that were uniform in respect of the above machair forms. Areas were calculated using a planimeter. Each zone was visited on foot in dry, fairly windless weather. A series of transects enabled all the ground to be viewed so that virtually all territory holding birds that were not sitting tightly on nests should have been visible. In addition each zone was counted from suitable vantage points prior to or after disturbing birds on the transect counts. The

positions of all birds were recorded on 1 : 10,000 outline maps. The criteria given by Fuller (1978) were used to define pairs of Oystercatcher, Ringed Plover, Dunlin and Redshank. Where Lapwings occurred at high densities often the best method was to count the total numbers of birds in flight. It was assumed that both individuals of each pair of Lapwings were counted. Snipe were so inconspicuous that estimates could be based only on numbers of drumming or chipping birds. Obvious non-breeding flocks were not recorded. Whenever it was not clear to which zone a pair belonged it was divided between the zones concerned.

### Census accuracy

The main sources of likely error in this type of mapping census have been given in Fuller (1978). Additional problems with the present study are that a few birds may have been counted twice where territories straddled a boundary of two zones not counted on the same day. Most waders are capable of laying repeat clutches but adults that failed late and did not relay may not have been included in the census. Where Lapwings bred at high densities disturbance attracted birds from the entire neighbourhood and allocation of pairs to habitats was sometimes difficult. Greenhalgh (1971) has emphasized the problems of mapping Redshank because of their absence of territory. The estimates of Snipe numbers are probably very inaccurate; drumming birds were difficult to allocate to machair zones, the relationship of drumming birds to number of pairs is unknown and numbers of drummers are probably strongly influenced by weather conditions, time of day etc. The data for Snipe cannot, therefore, be directly compared with those for the other species.

The virtual absence of any vertical vegetation structure on machair meant that detectability of birds on a single thorough census visit was generally high. However, Dunlin, Snipe and Redshank all sit tightly on eggs and, because a large proportion of these birds were incubating during the census period, their numbers could have been underestimated. C. Pickup (pers. comm.) has found that mid June censuses of Redshank at Balranald (North Uist) detected twice as many Redshank as work in mid May.

Oystercatcher, Ringed Plover and Lapwing may have been more prone to overestimation in view of their movements and frequent mixing with other individuals when disturbed at all stages of breeding. However, at Balranald C. Pickup found that a method of censusing Lapwing similar to the one I employed on Baleshare gave results that were very close to counts of incubating birds. The census period could not have

**Table 1. Estimated pairs of nesting waders on Baleshare (North Uist) in 1979 shown in relation to machair habitats**  
 Breeding densities (pairs/km<sup>2</sup>) are given in brackets. The figures for Snipe are not strictly comparable with those for the other species due to census difficulties (see text). Statistical tests are explained in the text.

	Oystercatcher	Ringed Plover	Lapwing	Dunlin	Snipe	Redshank	Total
Saltmarsh (106 ha)	22.5 (21)	11 (10)	37 (35)	14.5(14)	0	10 (9)	95 (90)
Shingle (13 ha)	3.5 (27)	3.5 (27)	1 (8)	0	0	0	8 (62)
Unstable dunes (119 ha)	7 (6)	1 (1)	1 (1)	0	0	0	9 (8)
Stable dune grassland (160 ha)	19 (12)	7 (4)	39 (24)	3 (2)	0	0	68 (43)
Cultivated machair (132 ha)	16 (12)	24 (18)	49 (37)	5 (4)	1 (1)	4 (3)	99 (75)
Wet machair (52 ha)	10 (19)	2.5 (5)	54 (104)	15 (19)	7(14)	11 (21)	99.5(191)
Wet blackland (59 ha)	10 (17)	1 (2)	44.5(75)	1 (2)	8(14)	14.5(25)	79 (134)
Damp blackland (91 ha)	14 (15)	1.5 (2)	36 (40)	1.5 (2)	1 (1)	6 (7)	60 (66)
Dry blackland (129 ha)	13 (10)	0.5 (0)	10.5 (8)	1 (1)	5 (4)	0.5 (0)	30.5(24)
Total (861 ha)	115 (13)	52 (6)	272 (32)	41 (5)	22 (3)	46 (5)	548 (64)
$\chi^2_B$	15.41, P>0.05	62.25, P<0.001	188.85 P<0.001	97.24 P<0.001	66.56 P<0.001	90.23 P<0.001	296.33 P<0.001

been both accurate and any later because large numbers of flying juvenile Lapwings might have confused the distribution. In some non-machair nesting habitats wader chicks are known to move considerable distances from the nest site, usually to damp feeding grounds. It is possible that this may occur on machair but casual observations suggest that the nesting and rearing grounds are the same for most species; 128 recaptures of ringed Lapwing chicks on Baleshare in 1979 revealed very few movements of more than 200m.

The only way to achieve 100% accuracy would be to count nests. However, there are density variations within the different types of machair which would necessitate large areas to be covered in order to produce valid comparisons of density and this precluded labour intensive nest finding. The results of this study can be regarded as an adequate reflection of the distribution of waders between their nesting habitats on Baleshare in 1979. With the exception of Snipe, the census accuracy was probably high enough to allow tentative comparisons with other published studies.

## Results

The census results are shown in table 1. Separate  $X^2$  tests were made to determine whether each species was evenly distributed between the nine types of machair that were censused. The expected numbers of pairs were calculated on the assumption that the total populations of each species would be distributed in proportion to the areas of the different machair types. Oystercatchers were evenly distributed ( $P > 0.05$ ) but each of the other species showed strong selection for certain nesting habitats ( $P < 0.001$ ). When wader numbers were summed irrespective of species ('total' column in table 1), certain machair types were found to hold significantly larger populations than others ( $P < 0.001$ ). Differences between species were tested for using a 6 x 5 contingency table. To obtain the sufficiently large expected values that are required for this analysis the data for Snipe, shingle and unstable dunes were omitted and those for damp and dry blackland were combined. The result was highly significant ( $\chi^2 = 101.68$ ,  $P < 0.001$ ) indicating that there were strong differences in nesting habitat selection between the five species.

No species other than the common six machair waders were found. The 548 pairs were divided between the six species as follows: Oystercatcher 21.0%, Ringed Plover 9.5%, Lapwing 49.6%, Dunlin 7.5%, Snipe 4.0%, Redshank 8.4%.

The shell sand beaches of the Outer Hebrides support very few nesting waders (Fuller, Wilson and Coxon 1979). I made

no systematic census of those on Baleshare but many casual observations failed to reveal any nesting waders.

Saltmarsh was favoured by all species except Snipe. It supported the second densest population of Dunlin. Shingle assumed importance for Oystercatcher and Ringed Plover in terms of density but in view of the small area involved it may not be comparable with the other machair forms. This is the traditional habitat for the species so high densities are to be expected. Unstable dunes were almost completely devoid of waders but stable dune grasslands held moderate numbers of Oystercatcher and Lapwing. The cultivated machair was outstanding for Ringed Plover in terms of total pairs, and density was second only to the limited areas of shingle. Cultivated land is of paramount importance to the Ringed Plover population on the Uists and Benbecula (Wilson 1978). The only other waders to nest at moderate densities on this land were Oystercatcher and Lapwing.



LAPWING *R. A. Richardson*

The wet habitats formed the major nesting habitats for Lapwing, Dunlin, Redshank and probably Snipe. Lapwing bred most densely on the wet machair and this was the main nesting zone for Dunlin which, unlike the other three wetland waders, was virtually absent from the blackland. Moderate densities of Lapwing persisted in damp blackland but dry blackland was avoided. Only Oystercatcher achieved moderate densities on dry blackland.

The two wet types of grassland supported the greatest overall densities of waders. Saltmarsh and cultivated machair were also major nesting grounds. On blackland populations were positively correlated with the amount of marshland. The stable dune grassland was occupied at much lower densities than the cultivated machair which would revert to a similar grassland in the absence of regular ploughing. Unstable dunes were of no importance as a wader nesting habitat.



## Discussion

The results of this study describe the distribution of six species of waders in relation to different types of west coast land on North Uist. They cannot, however, be taken as more than a superficial picture of habitat selection in these waders. Although the land of Baleshare was readily divisible into the types described earlier I did not measure which attributes of the habitat were significant to the waders. For example no account was taken of the degree of wetness or the density of tussocks. Such variables may account for differences in density within the same type of machair. The classification of wader habitats may be unsatisfactory in that it could mask any concentration of waders at the boundaries of zones but there was no firm evidence that such concentrations occurred.

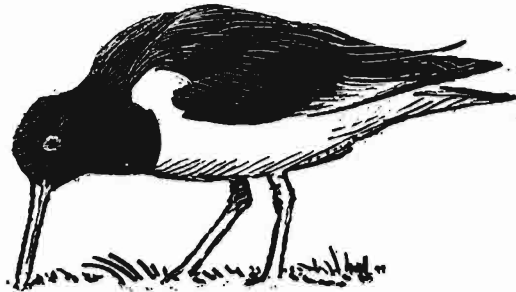
There are several factors that might be responsible for determining the distribution of waders between the machair types on Baleshare. Perhaps the two most likely are the structure of the vegetation and the availability and accessibility of food. There is little evidence that species on Baleshare are showing unusual habitat restriction compared with other British localities supporting fewer wader species, therefore any form of competitive habitat exclusion seems unlikely. One possible exception, however, is the absence of Dunlin from the blackland marshes. Acidic wetlands are a typical Dunlin habitat in upland Britain but Oystercatcher, Lapwing and Redshank are scarce breeders there compared with the Uist blackland marshes.

The three species that largely avoided the drier ground—Dunlin, Snipe and Redshank—all tend to sit tightly on their eggs, only flushing at the last possible moment. This behaviour may be most successful when the nest is fairly well concealed and the wetter machair and blackland tend to provide more cover in the form of longer tussocks, and nest cups are perhaps more easily constructed in the soft damp soil. Oystercatcher, Ringed Plover and Lapwing all nested on dry ground although only Ringed Plover showed a strong preference for it. All these species readily leave the nest at the first sight of a potential predator and they do not have concealed nests.

The tight sitting birds may, therefore, be poorly adapted for nesting on the dune grassland, cultivated machair and dry blackland. However, vegetation structure may also be important in producing different predation rates of young waders between different habitats. A large Common Gull colony is situated on the stable dune grassland at the southern end of Baleshare and these birds consume wader eggs and small chicks. The absence of the smaller waders from the stable dune grassland is unlikely to be fully explained by the prox-

imity of the gulls. On similar dry grassland elsewhere on North Uist, numbers of Ringed Plover and Dunlin are also relatively low and Wilson (1978) found low densities of Ringed Plover on uniform grassland. Oystercatcher and Lapwing clutches are vulnerable to gull predation yet these birds nest literally within the gull colony; it is possible that the large waders may in some way be better adapted to withstand gull predation.

Examination of the feeding ecology of the adults and chicks of each species might throw further light on the significance of their habitat distributions. For example, Oystercatcher was the only ubiquitous nesting wader on Baleshare and this may reflect its adaptability and versatility as a feeder (Dare 1966,



24.

OYSTERCATCHER A. D. Watson

Heppleston 1971). Lapwing, although showing a wide range of habitats, preferred to nest in the wetter areas; food availability might influence egg formation or chick survival. All species tended to avoid the unstable dunes. The feeding value of these highly unstable sands is probably extremely poor—there is virtually no soil or humus layer in which invertebrates are likely to occur in large numbers.

The RSPB reserve at Balranald, 10 km northwest of Baleshare, encompasses a very similar range of land types to Baleshare. The habitat distribution of waders at Balranald compares very closely with Baleshare (C. Pickup pers. comm.). Also, in 1979 a wader census of Balranald carried out by C. Pickup estimated a total of 644 pairs which broke down as follows: Oystercatcher 16.1%, Ringed Plover 10.7%, Lapwing 49.4%, Dunlin 7.1%, Snipe 6.2%, Redshank 10.4%. These are remarkably close to the ratios on Baleshare.

There have been no complete wader censuses elsewhere in Britain with which to compare the present results. Other

regions holding large nesting populations of waders are Shetland, Orkney and parts of Caithness. The Outer Hebridean machair is probably exceptional in that six species breed at high densities over such an extensive area. The total densities in the wetter habitats are probably higher or equal to those anywhere else in Britain. Wader nesting populations in various European study areas have been compared by Larsson (1976). It appears that densities in the two wet habitats on Baleshare may be broadly similar with some wetland sites in southwest Finland and the Netherlands but rather lower than on Swedish shore meadows.

Oystercatcher densities are similar to those on the Sands of Forvie NNR but much higher than inland Aberdeenshire (Vines 1979). Exceptionally Oystercatchers do breed more densely, e.g. on Skokholm (Dyfed) (Harris 1967). The Orkney farmland Lapwings may be similar to those in the most favoured Outer Hebridean habitats; Spencer (1953) mentioned that one farm of a square mile held 200 pairs (77 pairs/km<sup>2</sup>). Redshank densities on the wet machair and wet blackland were comparable to those recorded by Greenhalgh (1971) on Morecambe Bay and Ribble saltmarshes but the species breeds more densely on the Wash saltmarshes (Cadbury 1973).

In 1977 I estimated that the total machair Ringed Plover population was 800-900 pairs, an overall density of 15.7 pairs/km<sup>2</sup>. Such a high Ringed Plover density over an extensive area (which included several tracts of unsuitable habitat in the form of sand dunes) are unlikely to be paralleled elsewhere in Britain. The same is probably true for Dunlin which averaged 6.14 pairs/km<sup>2</sup> in 1977 but locally were far more abundant. Throughout the machair Dunlin show a strong preference for damp machair grassland (Fuller 1978). None of the published Dunlin densities (e.g. Greenhalgh 1969, Yalden 1974, Bundy 1978, Bell 1979) are anywhere near as high as those on wet machair at Baleshare. In their favoured *dubhloch* areas, Dunlin densities in Caithness may be as high as 12 pairs/km<sup>2</sup> (D. R. Langslow pers. comm.) which is similar to the density on Baleshare saltmarsh but less than that on wet machair.

Ringed Plover and Dunlin populations were estimated to be lower on Baleshare in 1977 than 1979. Although coverage of the machair was generally comprehensive in 1977 the blackland was not covered because densities of both species were known to be very low on this grassland. Several pairs of both species were also certainly overlooked at the complex north side. When these pairs are excluded the Ringed Plover figures show high constancy (39 and 40 pairs). The corrected Dunlin estimates, 24 and 33 pairs, represent an apparent increase of 37.5%.

## Acknowledgments

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## Summary

A census of all nesting waders was carried out during the summer of 1979 on the machair island of Baleshare, North Uist. A total of 548 pairs (64 pairs/km<sup>2</sup>) was divided between six species: Oystercatcher 21.0%, Ringed Plover 9.5%, Lapwing 49.6%, Dunlin 7.5%, Snipe 4.0%, Redshank 8.4%. Different types of machair and associated land were defined primarily on topographical and drainage features. Each species, except Oystercatcher, showed strong habitat preferences which differed between species. Total densities of waders were significantly higher in certain habitats than others; unstable dunes and two types of dry grassland supported the lowest numbers while the wettest machair held the greatest densities.

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## Summer diet of the Grey Heron

N. GILES

(Plate 18)

*Heron diet varies widely with season and habitat. This study compared two nearby heronries and found that Roach was the staple prey in one and Water Vole in the other. The importance of these species also changed through the summer.*

Dietary studies upon the Grey Heron in Europe have been reviewed by Nicholson (1929), Milstein *et al.* (1970) and Cramp *et al.* (1977). Methods used included examinations of gut contents, items regurgitated as a fright reaction by nestlings (Owen 1955), and analysis of pellets from beneath the nests. Milstein *et al.* (*op. cit.*) discussed the usefulness of pellet analyses and concluded that pellets, whilst usually only containing keratinised or chitinous remains, e.g. rodent fur and beetle elytra, may nevertheless be of value in assessing the relative proportions of bird and mammal prey.

Whilst investigating the effects of bird predation upon the morphology and behaviour of Three-spined Sticklebacks *Gasterosteus aculeatus*, I studied two heronries in west Stirlingshire to assess the importance of sticklebacks in each heron population. Lennox Castle heronry was probably first used in 1974 (J. Mitchell, pers. comm.). Gartfairn Wood heronry is an old, well established colony on Loch Lomondside and is one of the largest in Scotland with a maximum of 39 breeding pairs in recent years. Mitchell (1979) has summarized information on this heronry. In 1974 Lennox Castle heronry numbered four breeding pairs (J. Mitchell, pers. comm.) rising to six successful nests in 1978.

### Methods

Methods were designed to provide a complete picture of heron diet whilst ensuring minimal disturbance. Weekly visits were made to each heronry from 25th February to 11th August 1978; all six nests at Lennox Castle were studied together with six nests situated in a distinct group separated from the main colony at Gartfairn. Food species taken by herons were collected upon plastic sheets spread underneath each nest. The sheets retained any food items dropped from the nest above and any regurgitated by fledglings; pellets were often strewn around an area larger than that covered by the sheets and a complete weekly collection was made from beneath each

tree. Data from the six study nests at each heronry were combined, no comparison being made between individual pairs of birds within a heronry; a monthly comparative analysis between the two study sites is presented in the following section.

Pellets were softened in water and then dissected under a binocular microscope, all bones and exoskeletal remains being stored for later identification; mammalian fur samples were slide mounted prior to examination. Mammalian fur samples were identified by comparison with previously prepared reference slides of the fur of known species and with reference to Day's Key (Day 1966). Mammalian skulls, lower jaws, and limb bones were identified using Yalden's Key (Yalden 1977) and Van den Brink (1967). Fish bones and scales were identified by reference to Webb's Key (Webb undated) and Maitland (1972), and by comparison with specimen bones from known species. At the time of each visit to a heronry the presence and habitat of all feeding adult herons was noted and later compared with the items collected from the heronry at the time of the visit.

## Results

No food was found at either heronry during February or March; at this time the adult birds were laying and incubating eggs, feeding during non-incubatory periods, and probably leaving pellets and other food remains at the feeding grounds. The figure represents a monthly analysis of the occurrence by number of major food species found at both heronries.

At Lennox Castle pellets were regularly found below the nest trees throughout the breeding season and varied in size (total length along longest axis) between 1.5 cm and 9 cm (mean size 3.8 cm,  $n = 132$ ). Pellets were uniform in shape and texture, being composed almost entirely of mammalian fur together with varying amounts of beetle exoskeletal remains and mammalian skull and limb bones. At Gartfairn, pellets were rarely found beneath the nest trees and totalled only eight throughout the study (mean size 2.1 cm), the food remains recovered being composed of whole or partly digested fish together with small numbers of small mammal bones and beetle elytra.

In April at Gartfairn 90% of the food items recovered were large masses of Common Toad *Bufo bufo* spawn coinciding with the first audible indications of hatching young in the nests; the only other items recorded were two small Eels *Anguilla anguilla* and a single adult Minnow *Phoxinus phoxinus*.

The diet of young fledglings at Lennox Castle in April was markedly different, however, with toad spawn masses totalling

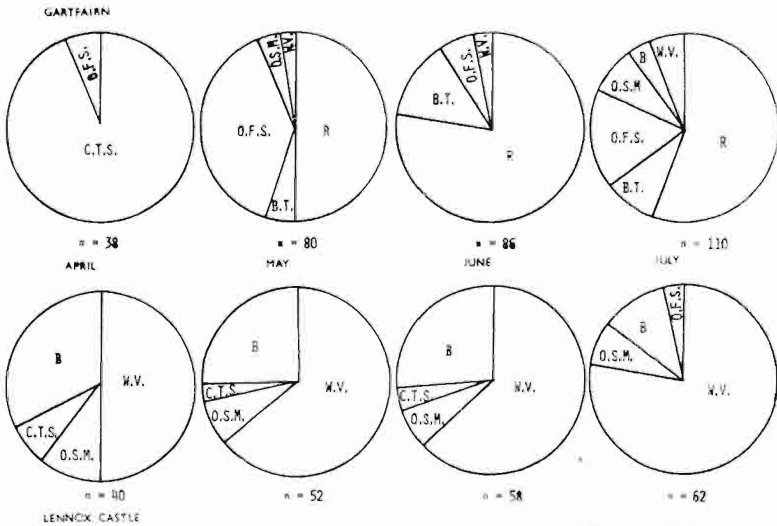


Figure. Monthly analysis of dietary items at Gartfairn and Lennox Castle; n = number of food items found at each heronry each month.

Key : B = beetles, B.T. = Brown Trout, C.T.S. = Common Toad spawn, O.F.S. = other fish species, O.S.M. = other small mammals, W.V. = Water Voles.

only 8% of the items recovered. The most important prey, identified from pellet remains, was the Water Vole *Arvicola terrestris* (50% of total). Beetles totalled 30% by number of items recovered and were almost entirely accounted for by *Dytiscus marginalis*.

The number of Water Voles represented by each pellet was estimated either from the number of skulls and lower jaw bones present or by the assumption that large pellets, composed entirely of fur, contained the remains of at least two voles. Milstein *et al.* (*op. cit.*) have conducted a pepsin digestion experiment upon vole skins and report that the fur from a single female *Arvicola* represents only 2.46% of the total body weight. From the size of the Lennox Castle pellets (mean = 3.8 cm) it is apparent that the fur from more than a single Water Vole must have contributed to the final pellet size (estimating fur volume per animal by eye from voles examined in the laboratory) and in the case of the largest pellets (9 cm) it is probable that upwards of four adult voles are represented by a single pellet. This estimate is supported by the occurrence in some pellets of *Arvicola* skull and limb bones from at least three animals.

In May the Gartfairn birds switched to an almost exclusively fish diet with adult Roach *Rutilus rutilus* forming 50% of prey, together with Perch *Perca fluviatilis*, Three-spined Sticklebacks, Stone Loach *Noemacheilus barbatulus*, Eels, Minnows and Brown Trout *Salmo trutta*. Small mammals were of little importance in terms of numbers but may contribute appreciably to the bulk of food. *Arvicola* totalled 4%, with three small Rabbits *Oryctolagus cuniculus* and single Pigmy Shrew *Sorex minutus* being recorded.

In May at Lennox Castle Water Voles again dominated the pellet contents, forming 65% of the total identified prey species. *Dytiscus marginalis* was again the most important beetle both in terms of overall numbers and bulk of food consumed; ground beetles occurred in smaller numbers. Toad spawn was still taken, together with a single adult toad. Small mammals, other than Water Voles, were a single Common Shrew *Sorex araneus*, a Field Vole *Microtus agrestis*, three small Rabbits and a single unidentified *Sorex* species.

In June at Gartfairn spawning adult Roach caught in the nearby River Endrick formed 80% of all identified food items; at this time the plastic sheets beneath the study nests and the ground beneath the majority of nests within the heronry were littered with scales, vertebral columns, opercular bones and pharyngeal teeth of adult Roach. Small Trout accounted for 18% of prey together with smaller numbers of Minnows and Three-spined Stickleback adults. The only small mammal remains found during the month were those of Water Voles which totalled only 3%.

At Lennox Castle in June the diet was again dominated by Water Voles which formed 62% of species recorded. Other mammals were young Rabbits (four), *Sorex* (three), and a single Common Rat *Rattus norvegicus*. Small amounts of toad spawn were found together with numerous (28%) beetle remains, again mostly *Dytiscus marginalis*.

The July diet of herons at Gartfairn showed a widening of prey selection with Roach dropping in importance to 55%, other fish being Trout (13%), Perch (8%), Pike *Esox lucius* (6%), Minnows (5%), Three-spined Sticklebacks (4%) and Stone Loach (2%). Mammals recorded were Water Voles (9%), Rabbits (8%) and *Sorex* (3%). Small numbers of head capsules and elytra of *Dytiscus marginalis* (total 3%) were recovered from pellets composed of plant fragments and sand grains.

In July at Lennox Castle Water Voles peaked in importance, forming 78% of all items identified; other mammals were Rabbits (two), Common Rat (one) and *Sorex* (two). A single young Pike (total length 10 cm) and an adult Perch (total length 14 cm) were recovered, these being the only fish found





PLATE 17. Breeding habitats of waders at Baleshare (North Uist) (p. 142).

*R. J. Fuller*

- (a) Damp machair grassland with many hummocks—the richest habitat with good numbers of Oystercatcher and high densities of Lapwing, Dunlin, Snipe and Redshank.
- (b) Elackland showing scattered rocks and water bodies—less fertile than the machair but again with good numbers of Oystercatcher and high densities of Lapwing, Snipe and Redshank in the wetter parts.





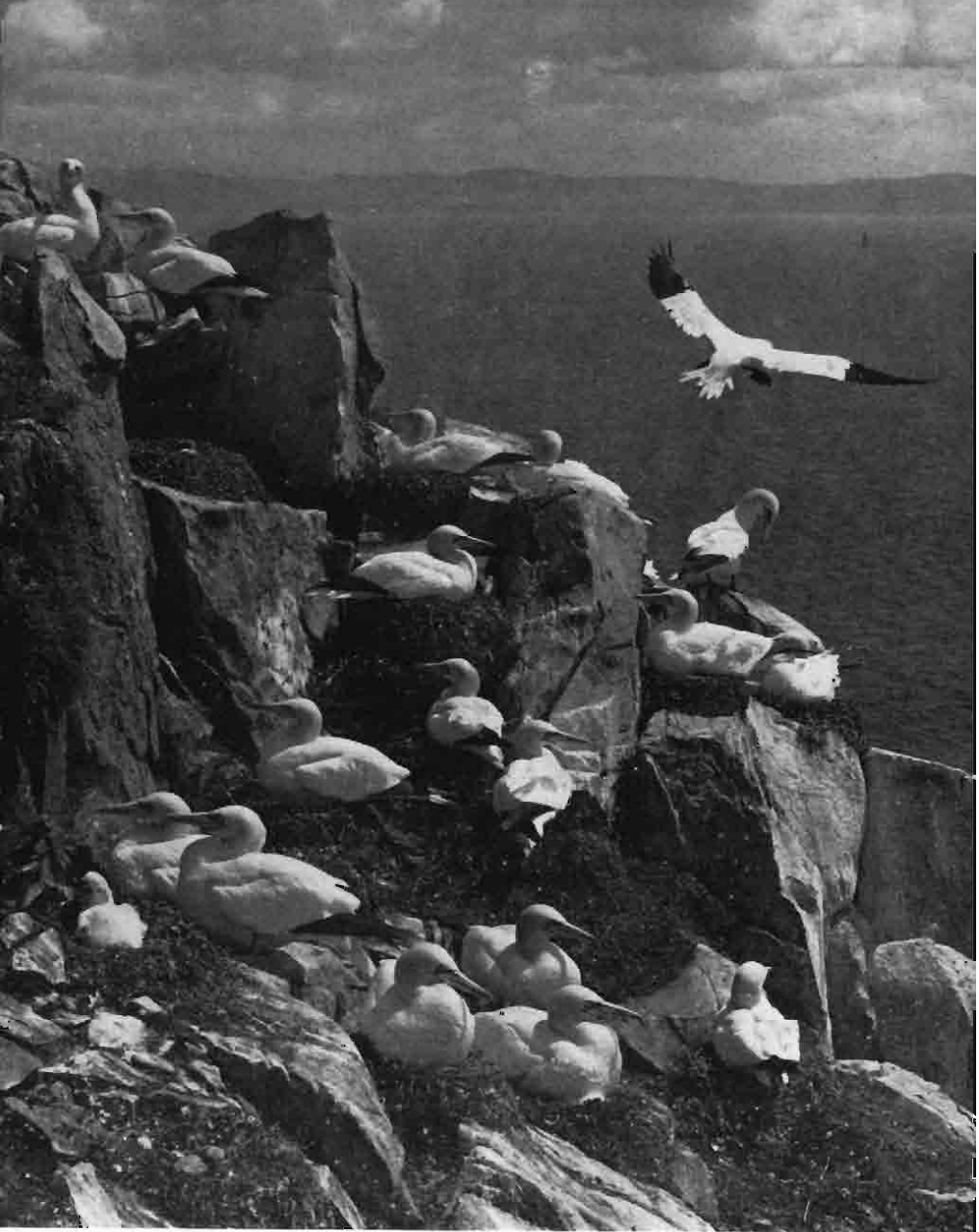
PLATE 18 (a) Redshank, (b) Dunlin—two waders typical of Hebridean machair (p. 142).

*W. A. J. Cunningham*

(c) Endrick Marshes and Gartfairn Wood (Loch Lomondside)—feeding and nesting habitat for one of the largest heronries in Scotland (p. 153).

*J. Mitchell*





PLATES 19-20. Gannets on Ailsa Craig (p. 159).

PLATE 19. Part of the gannetry with the Ayrshire coast in the distance.

*D. A. Smith*

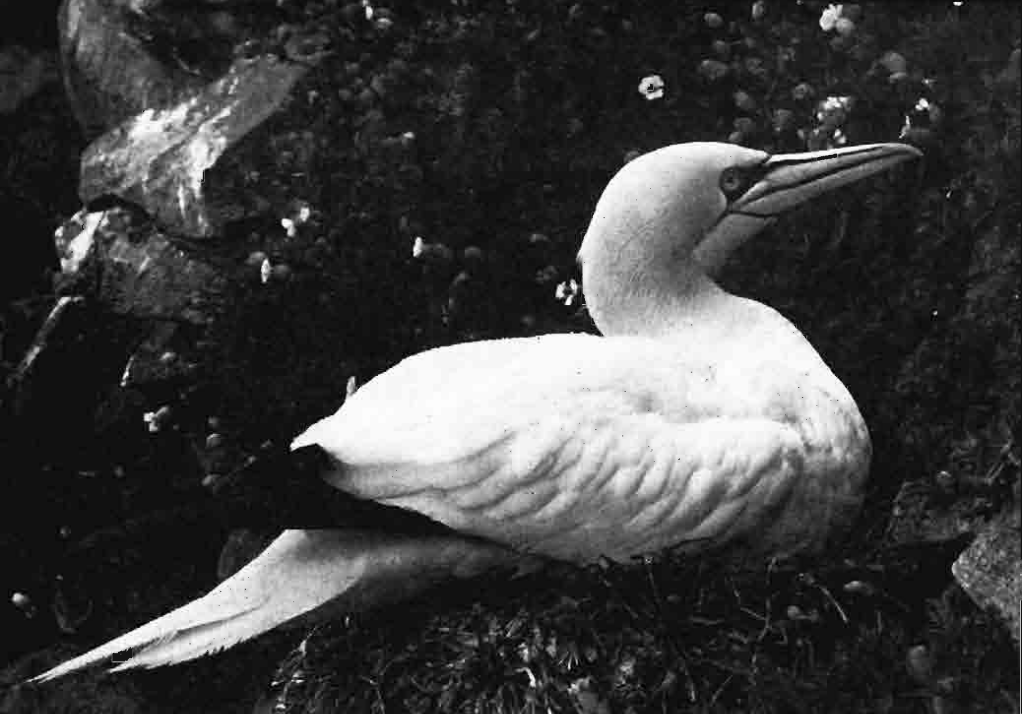


PLATE 20 (a) Gannet on nest, Ailsa Craig.

*D. A. Smith*

(b) Two Gannet chicks in one nest, Ailsa Craig, June 1980—probably the result of two females laying rather than genuine twins. *B. Zonfrillo*



at Lennox Castle heronry throughout the study period. *Dytiscus marginalis* formed 12% of prey, with exoskeletal fragments occurring both in pellets formed mainly from *Arvicola* fur and also in pellets composed of aquatic plant material which occurred less frequently.

### Discussion

Cramp *et al.* (*op. cit.*) in their major literature review state that the diet of the Grey Heron varies with season and between habitats. Owen (*op. cit.*) also reached this conclusion from heronries within a small area, concluding that the varying proportions of species taken at different heronries correlated with feeding grounds. The diet was also found to vary from year to year, with the timing of the breeding season coinciding with the greatest availability of prey.

During the present study the Gartfairn herons selectively took large Roach which were locally abundant in the River Endrick when the fledglings were growing. The Lennox Castle herons similarly selected a single species, the Water Vole, which predominated in all food samples throughout the breeding season and which produces peak numbers of young at the time when the fledgling herons at Lennox Castle are in need of a high food intake (Southern 1964).

Observations made upon feeding adult herons adjacent to the Gartfairn and Lennox Castle heronries revealed a marked difference in habitat choice with Lennox Castle birds usually feeding in small groups which actively stalked prey amongst bankside vegetation and in open meadows. Gartfairn birds seldom used such areas for feeding and were most often seen hunting solitarily on the banks of the nearby River Endrick, Mar Burn, and Loch Lomond. Social groups of herons in fields adjacent to both heronries were often seen, especially early in the breeding season, but active feeding in open grassland was only seen frequently at Lennox Castle.

The preponderance of Water Voles in the diet of Lennox Castle herons corresponds to the feeding habitat chosen by the adult birds. Water Voles commonly occurring along field ditches and in open meadows (Van den Brink 1967; Southern *op. cit.*), Nicholson (*op. cit.*), Lowe (1954) and Milstein *et al.* (*op. cit.*) have all reported heron populations where Water Voles form a high proportion of prey and where fish are rarely taken. Dement'ev and Gladkov (1951) found Grey Herons in Russia to take large numbers of the vole *Microtus socialis* in years when it was particularly abundant. It is of interest to note that both Trout and Three-spined Sticklebacks occur in large numbers close to Lennox Castle heronry but that neither

species was recorded in the diet of the herons throughout the 1978 breeding season.

Heronries where mammals are rarely taken are also well documented (see Milstein *et al.*, *op. cit.*). This is the case at Gartfairn where the predominantly fish diet also corresponds to the feeding site, the high incidence of mature Roach (of total length 22 cm and larger) in the diet being directly associated with the annual spawning migration of mature Roach into the lower reaches of the River Endrick from the south basin of Loch Lomond (Maitland 1966). The Mar Burn, situated only 400 m from the Gartfairn heronry, is very commonly fished by herons and it is probable that many of the small Trout (average total length 9 cm) taken in May, June and July were caught from this water. Adult Minnows and Trout samples from the burn often showed scarring of the flanks from past encounters with predatory birds (unpublished data). Three-spined Sticklebacks taken by Gartfairn herons in May, June and July were almost certainly caught in the Mar Burn and a concurrent study of stickleback ecology in the burn showed that only the largest were taken (mean size 45 mm) including both males in breeding coloration and gravid females.

No stickleback fry were recovered from the food items at the heronry despite the fact that they were very abundant in the burn, forming small separate shoals amongst aquatic vegetation during June and July. Owen (1955, 1960) has described heavy predation of Three-spined Stickleback adults and fry by herons at High Halstow in Kent with large numbers of fry being taken in late June and July.

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### Summary

The diet of Grey Herons during the 1978 breeding season was studied at two heronries, Gartfairn and Lennox Castle. Despite the proximity of the heronries, diet differed greatly between them. Gartfairn birds selectively preyed upon adult Roach from the River Endrick and consistently hunted solitarily along river and stream banks. Lennox Castle birds often hunted in small groups, stalking Water Voles in open meadows and bankside vegetation.

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## Birdwatching on the Clyde islands

J. A. GIBSON

(Plates 19-20)

The islands of the Clyde are undoubtedly one of the most fascinating areas of the west of Scotland, and for the bird-watcher have an interest not duplicated elsewhere. They range from the importance of Ailsa Craig and the size of Arran down to a host of tiny islets barely cut off from the mainland at low tide, and fall naturally into five groups—(1) Ailsa Craig; (2) Arran, with Holy Island and Pladda; (3) Bute, with Inchmarnock and the Burnt Islands; (4) the Cumbraes; and (5) the small islands.

The Ailsa Craig Gannet colony is one of the great gannetries of the world, and is unique in having been counted virtually every year from 1936 to date, apart from a small gap during the war years. During this time the colony has increased from

some 5,000 to 16,000 nests. They are confined to a  $1\frac{1}{2}$  mile stretch of the west cliffs, and the closely packed nests provide probably the most spectacular yet easily accessible bird-watching sight in western Europe. The best way to see the Gannets is to walk round the shore under the bird cliffs, but if at all possible try to sail right round Ailsa before landing. This makes a wonderful impact; indeed the ideal thing is to sail right round both before and after visiting the island.



DISPLAYING GANNET *J. Busby*

There is a foreshore all around Ailsa, but at high tide the shore is completely cut off at the southwest corner, near Stranny Point, and the average birdwatcher should certainly not attempt to walk right round within  $1\frac{1}{2}$  hours of high tide, although much depends on fitness and agility. It is also important to keep near the shore line, far out from the cliffs, since small stones, so frequently dislodged by seabirds, are continually falling down and it is sheer folly to walk anywhere near the foot of the cliffs without wearing protective head gear.

What else can you see on Ailsa? There is a large nesting colony of Kittiwakes, much reduced over recent years to some 5,000 nests. The Guillemots and Razorbills, once so numerous that last century the main industry on Ailsa was collecting auks for their feathers, are now sadly reduced to under 5,000 pairs of Guillemots and 2,500 pairs of Razorbills. Local oiling disasters always seem to be present and are making the population decline steadily worse. Despite this, these remain among the most easily accessible large auk colonies in the country. The once gigantic colony of Puffins is now reduced to a few dozen pairs, and the Puffin decline can be



traced from the accidental introduction of the Brown Rat to Ailsa in 1889. There are a few nesting pairs of Black Guillemots, some 30 pairs of Fulmars, usually about a dozen pairs of Shags, and the odd Cormorant. About a dozen pairs of Great Black-backed Gulls nest regularly, but there are also a great many non-breeding birds; these, and the mixed colony of some 2,000 pairs of Herring and Lesser Black-backed Gulls, are almost entirely confined to the sloping ground at the cliff tops.

The most interesting land birds include a pair of Peregrines and a pair of Ravens (both usually successful nesters) and more recently a pair of Buzzards. Somewhat surprisingly, there is a well known small colony of Wrens. Others include Rock Pipits and Meadow Pipits in numbers, some Wheatears, and occasional pairs of Blackbird, Song Thrush and Robin. Many Eiders, and sometimes Red-breasted Mergansers, now nest along the shore, and there is usually at least one pair of Oystercatchers. There are a good many migrants and casual visitors at other times, particularly after fog, and possibly the oddest visitor was a Treecreeper. In winter, Glaucous Gulls are very regularly seen, and sometimes there are surprising numbers of Woodcock and Snow Buntings.

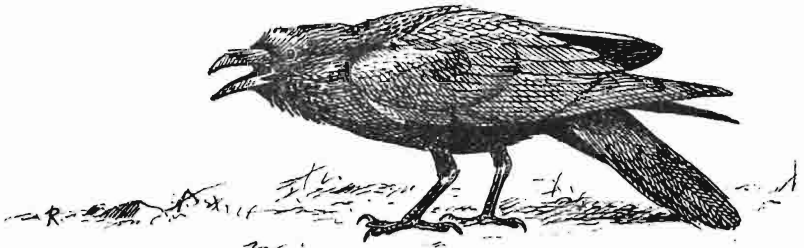
The real reason for visiting Ailsa, however, remains its wonderful Gannet and other seabird colonies. If your stay on the island is to be short, say up to two hours, then it is better to go south, under the Main Craigs. If you have a whole day trip, first go north under the Barestack and then south below the west cliffs, but don't attempt to walk right round without first consulting the boatman about the time of high tide. If you have some extra time you could also walk up to visit the old castle, but don't waste time climbing to the top of the Craig unless you have the good fortune to spend a few days on the island. Inland the birds are merely the gulls and small passerines; the real interest lies at the cliffs. Whatever else you do, make sure you save some time for the sail round under the bird cliffs.

Access to Ailsa is normally from Girvan on the Ayrshire coast and arrangements can usually be made in advance with the lighthouse boatman, at present Mr Tom Harrison (telephone Girvan 2631). It is also sometimes possible to stay at the lighthouse; permission should be sought from the Commissioners of Northern Lighthouses, after local arrangements have been made with the lightkeepers on Ailsa. During migration times a stay at the lighthouse is well worth while.

The Island of Arran is one of the great glories of the Clyde area, and has often been called the Highlands in miniature. Although it is visited every year by thousands of holiday-

makers, particularly to Brodick, Whiting Bay and Lamlash, the island is still surprisingly wild and empty even at the height of the tourist season.

The Golden Eagle and Peregrine nest on Arran, the Buzzard has increased until it is now relatively common, and the Hen Harrier is increasing every year, nesting not only on the open moorland but well inside some of the new forestry plantations. Kestrels are everywhere, and a few pairs of Merlins nest on the moors. Several pairs of Red-throated Divers nest at moorland tarns. Ptarmigan have recently returned to nest in the north. Several pairs of Ravens also nest, and all these birds can be seen without too much effort even by quite inexperienced birdwatchers.



RAVEN *R. A. Richardson*

There are a good many small colonies of Common Gulls near the moorland tarns, and there is a large spreading colony of Herring and Lesser Black-backed Gulls over some of the hills and moors to the north and the west. Arran formerly possessed the biggest colonies of Great Black-backed Gulls in the west of Scotland, with several groups of nearly 100 nests each, mainly at the hill lochs near the Boguillie in the north. These have now virtually vanished, but they may yet return and the area is certainly well worth a visit.

There are few freshwater lochs for ducks, although in autumn and winter there are large offshore flocks of Mallard and Wigeon, particularly in the Kilbrannan Sound, which may number many thousands. Shelducks nest in the south of the island in surprising numbers, many Eiders and some Red-breasted Mergansers nest all round the shore, and large rafts of Eiders are common offshore in autumn and winter. A little further offshore in autumn there are occasional surprisingly large rafts of Manx Shearwaters.

On Arran there are few real mudflats suitable for waders, although Lapwings, Ringed Plovers, Curlews, Snipe, Woodcock and Redshanks nest in some numbers and there are still a few Dunlins. On a good many occasions Redshanks have

been found nesting actually on the shore, a somewhat unusual feature. Fulmars and Black Guillemots nest in suitable areas, mainly in the south. At Brodick Castle there is a very old established heronry. The Kingfisher is now returning but the Great Spotted Woodpecker seems to be markedly decreasing. Some years Grasshopper Warblers seem to be particularly common, and there are still a few nesting Nightjars.

Flocks of Snow Buntings can be seen in winter, and there is now a large wintering flock of Greylag Geese around Shiskine in the west. Possibly the birds most typical of Arran are the Oystercatchers, which nest nearly everywhere all round the shore, and are outstandingly tame, remaining on their nests and paying surprisingly little attention to parked cars or nearby picnic parties.

Do be careful when walking on the moors; wear stout footwear or boots, for there are plenty of Adders. Do bear in mind, moreover, that grouse shooting and deer stalking are very much a part of estate income on Arran. For generations proprietors have been extremely generous in allowing hillwalkers free access to virtually all parts of the island, so do not abuse this privilege and respect requests not to visit parts of the island at certain times of the year.

Finally, for further information and assistance contact the Isle of Arran Natural History Society, c/o the Arran Nature Centre at Brodick, where visiting naturalists are made warmly welcome.

Holy Island is now a field research station of the Universities Federation for Animal Welfare, and permits to visit should be sought from UFAW Field Officer, Mr Howard Walker, Claveron Cottage, Lamlash (telephone Lamlash 348). There are very impressive mixed colonies of Herring and Lesser Black-backed Gulls; Great Black-backed and Common Gulls also nest, and there are occasional nesting Shags. Holy Island is an old established breeding station of the Peregrine (alternate site), and there is usually a pair of Ravens and cliff nesting Buzzards. A few terns nest along the shore, as also do Mallards, Mergansers, and Eiders in some quantity. Holy Island is noted for its chats, and Whinchats, Stonechats and Wheatears all nest, some years in surprising numbers.

The distance right round the shore is nearly four miles, some of it rough boulders, and at least a full afternoon is desirable for a visit; longer if possible.

The island of Pladda, lying about one mile off the south-east tip of Arran, is now a reserve of the Scottish Wildlife Trust. Although few of the large predatory gulls nest, the formerly extensive nesting colonies of terns are now sadly reduced. Ducks are very common, however, with Mallard,

Mergansers, and especially Eiders and Shelducks, nesting in quantities all round the shore. At least a dozen pairs of Black Guillemots nest regularly, as also do many Oystercatchers, and there are a few nesting Shags. Many Jackdaws nest in the small cliffs. Starlings nest in the pier and have been found nesting even in December and January. There are a good many nesting Rock Pipits. At the lighthouse a surprising number of unusual birds have been taken on migration.

In summary, Pladda is very flat, walking is easy, and the birds can be seen without difficulty; a visit makes a splendid outing for the birdwatcher, and is particularly suitable for those no longer quite so fit. Access is by motor boat from Kildonan, and permits can be obtained from Mr Howard Walker (as above).

(To be concluded)

*Dr J. A. Gibson, Foremount House,  
Kilbarchan, Renfrewshire, PA10 2EZ*

## Short Notes

### Garganey breeding in Clyde faunal area

The Garganey has hitherto been proved to breed in Scotland only once, at Aberlady (East Lothian) in 1928, although suspected to have done so in Strathspey in 1947 also. In the Clyde faunal area records have increased remarkably since 1970. The prolonged presence of a pair on a marsh during the spring of 1979 aroused considerable interest. However, although the drake was often obvious, the whereabouts of the duck was uncertain until 13th June when she appeared with a brood of eight ducklings. Later the whole brood was seen to have flown successfully. I am indebted to several local birdwatchers, and to Roy Dennis for providing helpful information for this note.

ANGUS HOGG

### Two Whimbrels laying in one nest

Although Whimbrels may have bred on Hirta, St Kilda (Outer Hebrides) several times between 1884 and 1963, the first proof of breeding was in 1964 (Macmillan & Turner 1964). Since then at least one pair has nested or probably nested almost every year observations have been made, making this the furthestmost south and west regular breeding site in Britain. In the three years 1977-9 six to eight eggs have been found in a single scrape. The data presented below have been collected from many sources (see Harris & Murray 1979) and

are fragmentary because no systematic attempts have been made to find or follow nests as the species is on Schedule One of the Protection of Birds Acts 1954-67.

**1964-76** Single nests with eggs were found in seven years and a pair probably bred in three other years. A pair summered in 1970 but made no attempt to breed. There were two additional pairs present in 1972 and one in 1976 but there was no evidence of them nesting. Young hatched in at least four years but they soon disappeared.

**1977** Six eggs were found in a scrape on the Cambir on 26th June. The eggs were still present on 18th July but had gone by 27th July. Three adults were often seen together in the territory. No young were seen.

**1978** Four eggs were found in a scrape on the Cambir on 24th May, and there were seven there on 28th May. No young were recorded. Only two birds were ever seen in the area.

**1979** On 22nd June there were seven eggs in a single scrape under an overhanging rock—an unusual site—on the Cambir and eight eggs four days later. The eggs probably came from two females as they fell into two distinct types, four were brownish and four were greener. None hatched and when they were about a fortnight overdue the seven eggs remaining were taken on 2nd August, at least a week after the last adult was seen, and are now deposited in the Royal Scottish Museum. Six of the eggs appeared to be infertile while the other had a grown embryo. Only two birds were ever seen in the area.

Witherby *et al.* (1943) gave records of nests with 5-8 eggs for 13 species of British wader including five eggs for Whimbrel. Bannerman (1961) mentions seven eggs in a Whimbrel nest. They assumed that these were due to two females laying in the same nest. The six Whimbrel eggs on Hirta in 1977 could be explained by one male and two females. However, in 1978 and 1979 only two adults were seen near the territory and we had thought there were probably two females and no male. Lesbianism has rarely been proved in waders but G. Trafford in Nethersole-Thompson (1973) collected two female Dotterel off a nest of six infertile eggs in Norway.

The embryo in the 1979 egg suggests three possibilities. Firstly a third bird may have been overlooked; secondly a female may have been fertilized by a male which then died (a fairly common fate of Whimbrel on Hirta) or otherwise passed on; or thirdly one female may have displaced another and laid in the same scrape. Perhaps the first is the most likely but this still does not explain why only one egg was fertilized.

Scotland is at the southern fringe of the Whimbrel's range with a population of under 200 pairs, mostly in Shetland (Sharrock 1976). St Kilda must be marginal habitat and there is no record of young having fledged.

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M. P. HARRIS, S. MURRAY, W. WRIGHT

[Taking eggs of Schedule One species requires a licence even when they are deserted.—ED.]

### High incidence of ring recoveries from Long-eared Owl pellets

Berstane Wood in St Ola, Kirkwall (Orkney) covers 5 ha of mostly deciduous trees with conifers in one corner. Long-eared Owls use the conifers as a winter roost although the wood is also a roost for very large numbers of Starlings, Blackbirds and thrushes. The table shows the maximum numbers recorded each winter in recent years.

Maximum winter counts at roost

	1975/6	1976/7	1977/8	1978/9
Long-eared Owl	20-25	15-20	1	20-22
Blackbird	500	500-1,000	1,000	1,200-1,500
Fieldfare	50	230-300	250	50
Song Thrush	25	40	40	40
Redwing	350	10,000	10,000	10,000
Starling	50	15,000	17,500	10,000

During the spring and summer of 1979 just over 500 Long-eared Owl pellets were collected, mostly from the conifer wood but with a small quantity from the adjacent deciduous area. These contained the usual remains of small rodents and almost 40% contained bird remains. Glue (1972, *Bird Study* 19: 91-95) found that from 51 samples analysed from a wide variety of habitats in Britain and Ireland bird remains were present in 46 (90%) and of all the vertebrate prey items found 15% were birds. However in four of the samples bird remains were numerically the main prey. South (1966, *British Birds* 59: 493-7) found that at a winter roost in south Lancashire 10.7% of prey items were birds.

Among the Berstane Wood pellets were 26 BTO rings, all from birds trapped in the wood. There were 19 Blackbirds, two Song Thrushes, one Redwing and four Starlings. The number is remarkable since the total of rings extracted from Long-eared Owl pellets during 1967-74 under the BTO scheme was only 16 (Glue & Morgan 1977, *Bird Study* 24: 111-113).

Trapping is done on a large scale at the winter roost and in the surrounding area which accounts for the availability

of ringed birds as prey. An indication of the number of birds ringed at Berstane Wood for the winters 1975/6 to 1978/9 is as follows. The figures are for birds ringed for the first time and do not include controls which are many: Blackbird 820, Fieldfare 40, Song Thrush 110, Redwing 2,150, Starling 1,575, others 150.

The weather during the winter and spring of 1978/9 was unusually severe with many days of snow cover in the Berstane area. Records from the Meteorological Office at Kirkwall Airport only 2km away indicate there was snow cover on 53 days during December to March, compared with an annual mean of 15 days.

Although the Long-eared Owl is renowned for feeding on birds it is debatable whether our figures are typical of Berstane Wood. Bird prey is readily available but the prolonged snow cover probably greatly reduced the availability of rodents and made birds more vulnerable through hunger. The Starling roost normally lasts until March but was abandoned in January. Whether this was due again to the prolonged snow cover causing food shortage, the predation of the owls, or both, is again open to debate.

A few Long-eared Owls breed in Orkney but most in the winter roost are probably migrants; 29 have been ringed in recent years with three recoveries—

Ringed	Recovered	
3. 1.79	17. 4.79	North Ronaldsay, 50 km NNE (controlled).
4. 2.79		
retrapped		
26. 2.79	6. 5.79	local, 2km south (found dead).
22.12.78	18. 5.79	Jokkmok, Lappland, Sweden, 66°35'N, 20°08'E (found dead).

I thank A. D. K. Ramsay for his notes and ringing data, E. Ross for details of the three rings he found, and D. Lea for help with various versions of this note.

R. G. ADAM

## Reviews

**Elephant Island: An Antarctic Expedition** by Chris Furse. Anthony Nelson, Shrewsbury, 1979; 256 pages; 14 colour, many plain photos; drawings; 7 maps; 23 x 16 cm; £8.50.

Elephant Island is named after the Elephant Seals that breed there in large numbers. Because of its ice-covered and mountainous nature and its reputation for ferocious weather it remained unexplored until 1970. This book is an account of a second expedition in 1976. I suspect the reader will find its aims and achievements too modest to sustain interest.

The story is told entirely in diary form by expedition members and this makes it difficult to follow what is happening. Since the members never become properly established as characters their personal and domestic affairs seem unimportant and take up too much space. The rich bird and seal life receive frequent mention but is not dealt with in sufficient depth. This is unfortunate when wildlife constitutes the principal importance of the island.

J. HUNT

**Birdwatcher's Yearbook 1981** edited by J. E. Pemberton, Buckingham Press, Maids Moreton, 1980, 320 pages, plain photos, drawings, diagrams, 22 x 13 cm, softback, £4.95.

This book is in two sections. The first third is made up of feature articles, ranging from 'Birdwatching for young people' to 'Scientific use of museum bird collections'. All the articles are readable and interesting.

The rest of the book is made up of 24 chapters. These are for reference and cover such diverse topics as all British bird observatories, bird reserves, county trusts, recorders, libraries etc., all complete with names and addresses. The range is wide and, for the active birdwatcher or conservationist, most useful. Scattered throughout the book are advertisements for binoculars, places, books etc.

One assumes it is planned to produce this yearbook annually, something along the lines of the *Guinness Book of Records*. However, with repetition of much of the reference section, one wonders if there will be sufficient demand in the years to come. In the meantime, this first volume is very useful and deserves to sell well.

FRANK HAMILTON

**Current literature** Articles and reports on the status and distribution of birds in Scotland are listed here. Strictly biological studies such as ecology or behaviour are excluded and so are references from the widely read journals **British Birds**, **Bird Study**, **Ringing and Migration** and **Ibis**. Most items listed and many others are available for reference in the club library and we are grateful to the contributors. The library welcomes copies of work on any ornithological subject.

Breeding seabirds at the Mull of Galloway. R. C. Dickson 1977. *Western Naturalist* 6 : 3-12 (published 1980).

Birds and invertebrates of the Clyde estuary tidal flats. J. C. Smyth *et al.* 1977. *Western Naturalist* 6 : 73-101 (published 1980).

Canada Geese breeding, and other geese wintering, on Island of Colonsay. M. Clark 1977. *Western Naturalist* 6 : 103 (published 1980).

Mink predation of Shelduck and other wildfowl at Loch Lomond. E. Bignal 1978. *Western Naturalist* 7 : 47-53 (published 1980).

The food of Short-eared Owls in Orkney. P. B. Heppleston 1978. *Western Naturalist* 7 : 55-62 (published 1980).

Breeding of the Storm Petrel and the Manx Shearwater in Kintyre, Argyll. E. J. Maguire 1978. *Western Naturalist* 7 : 63-66 (published 1980).

The status of the Whooper Swan in Lewis and Harris, Outer Hebrides. W. A. J. Cunningham & N. E. Buxton 1980. *Hebridean Naturalist* No. 4 : 6-10.

The birds of 1979. P. Cunningham 1980. *Hebridean Naturalist* No. 4 : 20-25.

Breeding Manx Shearwaters *Puffinus puffinus* on Rhum: An updated population assessment on selected areas. D. B. A. & P. S. Thompson 1980. *Hebridean Naturalist* No. 4 : 54-65.

Torr's Warren, West Freugh, Wigtownshire. C. N. Clayden 1980. *Adjutant: the journal of the Army Bird-watching Society* 10 : 22-24.

*Edinburgh Ringing Group: Seven*: 1979. 1980. Includes 'East Lothian Islands in winter' and 'Wader movements within and through the Firth of Forth'. Price 40p (60p including postage from J. H. Fallantyne, 6 Mansfield Place, Edinburgh, EH3 6NB).



## Notices

**BTO Nightjar survey** The *Atlas* shows the Nightjar to be uncommon and hints that a thorough census is desirable to establish the current situation, which subjective impressions suggest is worse than the 1968-72 map indicates. Whilst previous surveys in 1952 and 1957-8 may have been incomplete in Scotland, the *Atlas* shows declines in the west from Skye, Ardnamurchan, Morven, Mull, Islay, Jura and Kintyre. In the northeast it has apparently gone from Caithness and east Sutherland while just hanging on in Nairn and Moray. The central Highlands are virtually deserted and there are only a few records from the Lothians and Berwick. The majority of Scottish Nightjars are now to be found in Ayrshire, Dumfries and Galloway where they appear to have re-colonized since 1957-8. I am organizing a national survey in 1981 and would welcome assistance from all Scottish ornithologists and visitors. Record cards and instructions are available from BTO Regional Representatives, the SOC office, or direct from myself. With the present massive afforestation much new suitable habitat is being created. Being a mobile opportunist in finding suitable nesting sites, if only for a year or two, Nightjars may well be more widespread than at present suspected.

F. C. Gribble, 22 Rickerscote Avenue, Stafford, ST17 4EZ

**Whooper Swans** In 1980, 46 were marked in Iceland with blue leg and neck bands with white codes numbered from 1J01 to 1J46. Please send records to M. A. Brazil, Dept. Psychology, Stirling University or to the Museum of Nat. Hist., P.O. Box 5320, Reykjavik, Iceland.

## The Scottish Ornithologists' Club

### HONORARY MEMBER

At the annual general meeting of the club on 25 October 1980 Mr Maxwell K. Hamilton retired as Honorary Treasurer. He was elected in 1963 and in recognition of seventeen years service Council elected him to be an Honorary Member of the club. At the meeting he was presented with an inscribed candelabrum, donated by members elected to Council during his term as Treasurer.

### INVERNESS BRANCH SECRETARY

Will members please note that the new secretary of the Inverness branch is Mrs Sally Moore, Smithfield Farm, Tomatin, Inverness IV13 4YN (tel. 08082 378).

### BORDERS BRANCH A.G.M.

The Borders Branch AGM will take place on 23 March 1981 and not as shown in the syllabus. Venue and time unchanged.

### SUMMER EXCURSIONS

Details of excursions planned by branches are enclosed with this number of the journal.

### 1980 RAFFLE

The draw took place after the annual dinner at the Conference last October. £699 of tickets were sold and after deducting the 1st prize, printing and postage costs, a net profit of £595 was put towards club funds. Everyone who bought or sold tickets is congratulated on this

very fine effort which was a net £37 more than in 1979. Special thanks are due to those individuals and firms, and two branches, for donating all the 22 prizes. A list of winners can be obtained from the club secretary by sending an SAE.

### SOC ANNUAL CONFERENCE - 1981

The next conference will be held at the Marine Hotel, North Berwick, East Lothian, from 30 October - 1 November 1981. Details will be published in *Scottish Birds*; bookings can only be accepted on the official booking sheet which will be sent to all members with the autumn journal.

## Conference News

**SOC conference, North Berwick, October 1980** The Friday night slide show continues to be a great success. A strong American flavour reflected the growing interest in birdwatching stateside. The conference was opened next day by Valerie Thom who paid tribute to George Waterston. Dr Derek Ratcliffe gave us a comprehensive study of the problems facing wildlife habitats. He conveyed a great knowledge of his subject and left us with a challenge: to demand a greater say in public spending on matters affecting conservation. Richard Porter dealt well with wild birds and the law. The problems are many and it is sad that prosecutions are mainly brought by a charitable body. The effects of rare birds upon human beings was the subject of D. I. M. Wallace who raised several points of controversy which unfortunately left no time for questions. Among the improvements to the system of recording rare birds he suggested issuing licences to qualified birdwatchers—would endorsements be issued for misidentification? This would lead to more red tape—just what we are trying to avoid.

Despite a gloriously sunny afternoon 60 people turned up at the first wader workshop. Mike Pienkowski led with the movements of European waders, which has plenty of scope for birdwatchers to contribute sightings of colour marked birds. Hector Galbraith, David Bryant and Keith Brockie spoke on ringing studies on the Clyde and Forth and on Purple Sandpipers. Iain Taylor drew things to a close and the general opinion was that it had been fruitful and well worth repeating.

The dance was a great success thanks to the DJ David Scott. Although autumn was upon us there was a considerable amount of lekking and display probably due to the large number of grouse on the tables.

On Sunday Henry Robb spoke on Pied Flycatchers' use of nestboxes and showed the impact an amateur can have on a local bird population. Alistair Smith took us to west Africa to show us terns in winter. They are now looked upon by the children as forms of amusement and as many as 20 Sandwich Terns are caught per day with hooks and nooses. Alistair informed us of some unusual feeding habits of the native birds. Waders in the Moray Firth were dealt with by Bob Swann, not only in a Scottish context but in a European one. His results are all the more important when one considers the present and proposed development of the area. It was fitting that after their great breeding season the film *Osprey* should be shown to draw things to a close.

Is it not time for the conference to revert to Stirling and the fair spread of travelling time between the various groups?

LOGAN D. STEELE

**Scottish ringers' meeting, Dundee, November 1980** The 6th Scottish ringers' meeting was held over the weekend of 22nd/23rd November

and was ably organized and hosted by the Tay Ringing Group. Ever since the first in 1975 these conferences have consistently had just the right mix of the results of professional and amateur research. This creates a stimulating and lively atmosphere which frequently spills out of the lecture theatre and generates discussion late into the night (and early morning). This social aspect is important (some would say more so than the talks) in that it provides an opportunity for folk with like interests to get together to discuss past work and recharge their batteries for future efforts.

This year's conference was no exception. Personal highlights of the talks were Jeremy Greenwood on Greenland, Bob Furness on waders and Eric Meek and Brian Little on Goosanders. Also speaking were Iain Taylor (Barn Owls), Andrew Douse (Common Gulls), Mick Marquiss (Oystercatchers), Chris Redfern (Lapwings), Henry Robb (Redstarts), Alan Morley (Birds from oil rigs) and Paul Green (Rooks and Jackdaws). Chris Mead gave the annual 'View from the Ringing Office' and also spoke on bird banding in Texas. The success of the social get-together on the Saturday evening could be judged by the numbers of people drinking only orange juice with lunch on Sunday!

All in all a great success. It is up to the Highland Ringing Group to continue the tradition next year in Carrbridge and I, for one, shall certainly be there.

HECTOR GALBRAITH

## Current Notes

*These notes include unchecked reports and are not intended as a permanent record, nor will they be indexed. Please send reports to the editor via local recorders at the end of March, June, September and December*

The period October to December is covered here. Autumn was rather disappointing outside the Northern Isles. Easterlies were few and far between and the falls on the mainland tended to be rather small; even Fair Isle reported low numbers of thrushes. Despite this, Fair Isle tempted a few stalwarts to hire a plane to see yet another first for Britain, a **Yellow-browed Bunting**. As if that wasn't enough a **Pine Bunting**, and the 2nd live British **Brünnich's Guillemot** were there at the same time (cosmic minds beware). Not to be outdone, Orkney produced no less than 2 **Tengmalm's Owls** (the previous 2 records were also there) and later Shetland increased the Northern Isles monopoly with 2 **Ivory Gulls**, one of which (an adult) was feeding on a stranded Killer Whale. (In the midwinter twilight up there I suspect that white birds are the only ones visible.) So far I have not heard of any Waxwings so keep an eye on your cotoneasters.

**White-billed Diver** Whalsay (Shet) 4 Nov. **Sooty Shearwater** late ones after a poor season: Rattray (Aber) 12 Oct, Peterhead (Aber) and Wick (Caith) 31 Oct, Wick 2 Nov. **Whooper Swan** 388 (42 juvs) Strathbeg (Aber) Oct. **Bewick's Swan** 6 Strathbeg, 2 Newburgh (Aber) 9 Nov, Dirleton-Aberlady (E Loth) max 9 in Nov; 11 L Leven (Kinross) Dec, 60+ Caerlaverock (Dumf) Nov; best year for Scotland this century. **Pink-footed Goose** 14,200 Meikle (Aber) early Oct, 12,000 Aberlady 8 Nov, 18,000 West Water Resr (Peeb) Dec. **Greylag Goose** 800 Meikle early Oct. **Snow Goose** Strathbeg Oct, Perthshire Oct, Aberlady 27 Oct-3 Nov. **Brent Goose** Artrachie (Aber) 10 Oct, 2 Pale-bellied *hrota* Slains (Aber) Oct, 6 Dark-bellied *bernicla* Aberlady 5 Nov. **Shelduck** 148 Aber-

lady 21 Dec. **Teal** 1,375 Slains early Oct. **Blue-winged Teal** 2 Caerlaverock Oct. **King Eider** single ♂♂ Port Glasgow (Renf) and L Fleet (Suth) Nov-Jan. **Surf Scoter** ♂ Drums (Aber) to 8 Oct. **Smew** Davan (Aber) 26 Oct very early, Inverness 26 Dec. **Red-breasted Merganser** 2,200 Beaully Firth (Inv) Dec; **Goosander** 1,550 Beaully Firth Nov-Dec (both highest ever counts). **Rough-legged Buzzard** NW Ochils (Perth) 1 Nov. **Osprey** juv dying Highlands 17 Dec. **Red-footed Falcon** ♂ Aberdeen 28 Sep. **Quail** Snapinsay (Ork) 9 Nov. **Water Rail** 14 Strathbeg 29 Oct. **Grey Plover** 240 Aberlady 19 Oct. **Little Stint** Ythan (Aber) 5 Oct. **White-rumped Sandpiper** Fair Isle 7-8 Oct. **Curlew Sandpiper** Virkie (Shet) 2 Nov. **Ruff** 49 Fenton Barns (E Loth) Oct, 27 Newburgh 25 Oct. **Long-billed Dowitcher** Caerlaverock Nov-Jan. **Bar-tailed Godwit** 1,050 Aberlady Nov. **Green Sandpiper** Kemnay (Aber) 25 Oct, 2 Strathbeg 26 Oct. **Common Sandpiper** Don (Aber) 31 Oct. **Pomarine Skua** Aberlady 7 Oct, Peterhead 25 Oct, Whalsay 5-8 Nov. **Ivory Gull** juv Virkie Nov, adult (feeding on dead Killer Whale) Yell (Shet) Dec. **Sandwich Tern** 3 Gullane (E Loth) 20 Dec. **Arctic Tern** Scalloway (Shet) 28 Oct. **Black Tern** Girdleness (Aber) 3 Oct. **Guillemot** 3,500 Beaully Firth Dec. **Brünnich's Guillemot** Fair Isle 16-17 Oct, Brent oil field 26 Dec. **Turtle Dove** Strathbeg 8 Oct, 1 Nov; Ythan 24 Oct. **Tengmalm's Owl** ♀ trapped Binscarth (Ork) 14 Oct, a 2nd ♀ found dead 18 Nov. **Swift** Don (Aber) 8 Nov. **Hoopoe** Fair Isle 8-18 Oct, Ayton (Ber) 6 Nov, St Abbs (Ber) 8-9 Nov. **Great Spotted Woodpecker** Fair Isle 23 Oct.

**Short-toed Lark** 2 Fair Isle 4-11 Oct, one 21 Oct. **Woodlark** Skerries (Shet) 23 Oct. **Shore Lark** 2 Tynninghame (E Loth) 8-9 Nov, Musselburgh (Midl) mid Nov, Ythan 9 Nov. **Swallow** St Andrews (Fife) 24 Nov. **House Martin** St Andrews 17 Nov. **Richard's Pipit** 2 Fair Isle 14 Oct. **Robin** 50 Fair Isle 7 Oct. **Bluethroat** Skerries 12 Oct, Mid Yell (Shet) 15 Oct. **Black Redstart** one ringed Isle of May c.20 Oct, ringed bird Tantallon (E Loth) 25 Oct; Tentsmuir (Fife) 26 Oct. **Stonechat** Siberian race *maura/stejnegeri* 3 Fair Isle 12 Oct, one 15 Oct. **Swainson's Thrush** Scatness (Shet) 25-29 Oct (1st Scottish record). **Blackbird** 500 Fair Isle 22 Oct, 650SSW/2 hrs Barns Ness (E Loth) 31 Oct. **Fieldfare** 800 Fair Isle 22 Oct. **Song Thrush** 200 Fair Isle 7 Oct. **Redwing** 700 Fair Isle 22 Oct. **Sedge Warbler** Fair Isle 26 Oct (late). **Reed Warbler** Lerwick (Shet) 7 Oct, Fair Isle 31 Oct (late). **Barred Warbler** Holm (Ork) 16 Oct. **Whitethroat** Cruden Bay (Aber) 4-5 Nov. **Garden Warbler** Aberdeen 10 Nov. **Yellow-browed Warbler** Lerwick 6 Oct, Veensgarth (Shet) 11 Oct, Tresta (Shet) 17 Oct, another 2 Nov. **Chiffchaff** 80 Fair Isle 12 Oct, 22 Fetlar (Shet) 13 Oct, northern races *abietinus/tristis* 16 Aberdeenshire coast 6 Nov, St Abbs 15 Oct, Coldingham (Ber) 18 Oct, Wick Oct-Nov. **Willow Warbler** northern race *acredula* Cruden Bay 12 Oct, St Abbs 15 Oct. **Firecrest** Rhum (Inv) Oct, Newburgh (Aber) 3 Nov, Cruden Bay 4-6 Nov. **Red-breasted Flycatcher** 2 Fair Isle 12 Oct, Ackergill (Caith) 8 Nov. **Long-tailed Tit** 3 Stromness (Ork) 24 Oct. **Great Tit** Sandwick (Shet) 20 Oct, Skerries and Burra (Shet) 23 Oct, 5 Whalsay 23 Oct. **Treecreeper** Bressay (Shet) 27 Oct, Kergord (Shet) 8-9 Nov. **Red-backed Shrike** Whalsay 9 Oct, Aberdeen 6-13 Nov. **Great Grey Shrike** Fair Isle 26-28 Oct. **Brambling** 300 Comrie (Perth) Dec, 150 Peebles 26 Dec. **Arctic Redpoll** 2 Fetlar 13 Oct, North Ronaldsay (Ork) 13 Oct. **Common Crossbill** 35 Peebles 26 Dec. **Scarlet Rosefinch** Fair Isle 1st-2nd, 11-12th, 26-29 Oct, North Ronaldsay 13 Oct. **Bullfinch** northern race *pyrrhula* Kergord (Shet) 2 Nov, Weisdale (Shet) 4-5 Nov, 2 Voe (Shet) 2-8 Nov. **Lapland Bunting** 3 Musselburgh Nov-Dec. **Snow Bunting** 220 Fair Isle 26 Oct. **Pine Bunting** 2 Fair Isle Oct. **Yellow-browed Bunting** Fair Isle 12-23 Oct. **Rustic Bunting** Fair Isle 2 Oct, 11 Oct, 2 on 12 Oct, one 14 Oct. **Little Bunting** North Ronaldsay 13 Oct.

**Late news** (January) **American Wigeon** Black Isle (Ross); **Ross's Gull** 3 Shetland; **Whinchat** pr Selkirk.

PETE ELLIS



## YOUNG ORNITHOLOGISTS CLUB

The YOC has now a membership of over 110,000 children. It is tempting at such a time to be complacent but really this membership presents us with many new problems to be solved. Never before has the responsibility of the YOC been so great—never have we had the opportunity of educating such a large number of young people and we may need all the help we can get.

I believe the strength of the YOC lies in the exciting national competitions and projects which are contained in the first-class bi-monthly colour magazine *Bird Life*, but just as important are the local activities which take place in many parts of Britain and Ireland. It is vitally important that our network of YOC leaders continues to grow and this is especially true in Scotland where there are very large areas where there are no YOC activities and children who join are not given the encouragement which comes from belonging to a local group.

It is therefore important that we increase the number of YOC leaders during 1981. New volunteers need not be expert ornithologists or be people with lots of free time. Some of the most valuable YOC local activities are run on a monthly basis by adults taking a comparatively small number of local children to nearby birdwatching areas. The main concern of the new volunteer is, I am sure, that they will be put in embarrassing situations by knowledgeable teenage members: let me assure you that this need not be the case! Group leaders are those who work alongside the children, helping them to identify the birds and being prepared to say "I don't know" or "Let's look it up when we get home".

If anyone is interested in becoming a YOC leader, please contact Peter Holden, National Organiser of the YOC, The Lodge, Sandy, Bedfordshire, SG12 2DL

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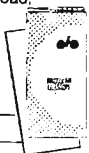
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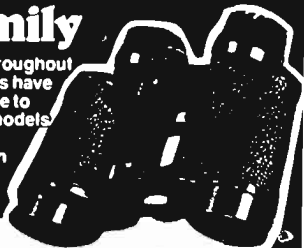
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