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# SCOTTISH BIRDS



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SCOTTISH ORNITHOLOGISTS' CLUB

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WINTER 1982

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THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB



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Volume 12 No. 4

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Edited by V. M. Thom, assisted by R. W. Furness and S. R. D. da Prato

## Breeding status of the Crested Tit

M. J. H. COOK

*The colonisation of plantations by Crested Tits is one of the most satisfactory outcomes of afforestation. This paper presents an up-to-date report on the status of this species and discusses factors governing its distribution.*

The breeding distribution of the Crested Tit was mapped during the five years of the BTO Atlas work between 1968 and 1972 but no attempt was made to do more than find evidence of breeding in each 10 km square. The relatively restricted distribution and exclusively Scots Pine *Pinus sylvestris* habitat of the Crested Tit make it a suitable subject for more detailed survey. While native Scots Pine forests are increasingly being subjected to commercial forestry practices, further areas of forestry plantations are now maturing into suitable habitat. The need for a baseline for future monitoring was therefore seen as important and it was decided to undertake as thorough a survey as possible during the breeding seasons of 1979 and 1980.

### Methods

The base unit for recording was the 5-km square, thus giving a considerable increase in accuracy over the Atlas work. The survey included most areas of apparently suitable habitat in the Highland and Grampian regions, and most 5-km squares within this area were visited during the two seasons. Breeding evidence was obtained in three categories :

(1) Possible breeding. Birds present in apparently suitable breeding habitat in the breeding season but no further evidence of breeding obtained.

(2) Probable breeding. (a) Birds courting, displaying, singing or apparently holding territory. (b) Anxious behaviour indicating nest or brood nearby. (c) Excavating or building nest.

(3) Proved breeding. (a) Nest found containing eggs or young. (b) Used nest found. (c) Recently fledged young. (d) Adult carrying food or faecal

sacs. (e) Adult entering or leaving a hole in circumstances indicating an occupied nest.

These criteria are similar to those used in the BTO *Atlas* (Sharrock 1976) on which they are based. The breeding season was taken as extending from April 1st to June 30th.

Most of the breeding evidence obtained related to categories 1, 2b and 3c, d and e above. Despite the apparently extremely sedentary nature of most Crested Tits the degree of accuracy of this survey precluded the use of records of juveniles as proof of breeding once the family had dispersed, since dispersal distances of more than 2 km have been recorded in Scottish woods (Deadman 1973). Even newly fledged family parties will forage over areas of at least 3 ha thereby crossing the boundaries of 5-km squares in some cases. The over recording of occupied breeding squares, due to the movement of family parties, is, however, thought to be slight.

With this species song is of little use as a sign of possible breeding, as it is seldom used; the low density and wide spacing of most Crested Tit territories probably render it ineffective.

Comparatively few nests were found as the Crested Tit is a Schedule 1 protected species under the Protection of Birds Acts and only those participants in the survey holding the necessary Nature Conservancy Council licence were therefore able to approach occupied nest sites.

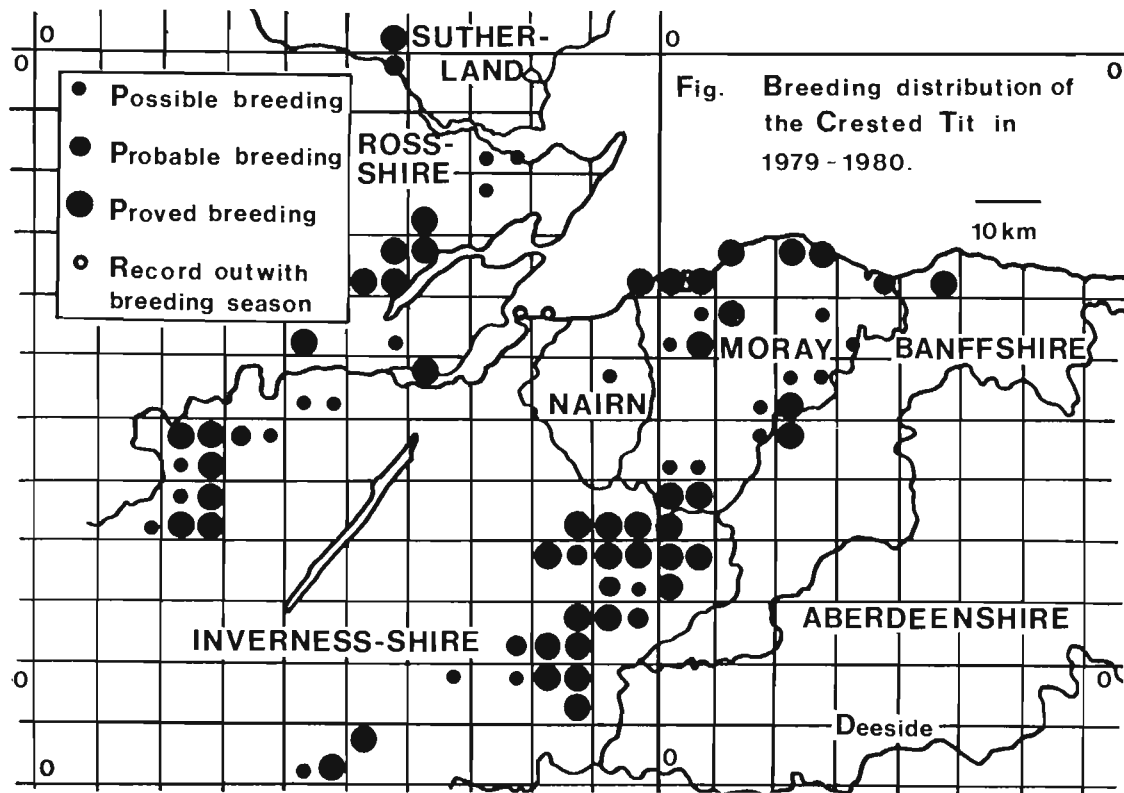
Information was also collected in many cases on the nature of the habitat where birds were recorded.

### **Breeding distribution**

Crested Tits were recorded during the breeding season in 78 5-km squares (figure). As this species is relatively sedentary it is likely that most of the possible and probable records refer to breeding birds—particularly those in discrete woods not in the immediate neighbourhood of an established population. For the same reason two late autumn records from north-east Inverness-shire have been included.

The apparent spread of the Crested Tit in the early part of this century is documented by Baxter & Rintoul (1953) and Campbell (1974). It would appear that during the ten years since the work for the BTO *Atlas* there has been some further expansion at the edges of the Crested Tit's range. In Banffshire the coastal record represents a recent recolonisation. Although Crested Tits used to breed in this area (Witherby *et al.* 1943) they had long ceased to do so. In the lower Spey Valley Crested Tits are now breeding at Fochabers for the first time in at least ten years and are to be found, thinly, in plantations right down the east Morayshire boundary. In 1980 birds were found breeding in Strathconon in Ross-shire for the first time but whether this represents an expansion or a previously overlooked population is not known. As a breeding species in Sutherland the Crested Tit has only been known in the past four years. Since the first record of presence, near Dornoch in October 1956 (Macdonald 1957), a few other sightings in





that area culminated in the first proved breeding in Shin Forest in 1978 (D. Whitaker pers comm.).

No records were obtained during the survey years from Deeside. There is no documented evidence that Crested Tits have ever bred here although there have been between 11 and 14 sight records since 1960, including May records in suitable breeding habitat in 1974 (Dennis 1975) and 1977 (Dennis et al. 1978).

### Breeding habitat

Habitat data were obtained for 47 of the 78 squares where Crested Tits were found. Observers were asked to supply information on the forest form, species and growth habit of trees present, and the nature of the ground cover. In 12 cases nests were found and only here is the precise nest site habitat known.

The Scots Pine featured in every habitat description. The nests found were all in Scots Pine stumps or in nest boxes on Scots Pines, with the exception of three nest boxes on Corsican Pine *P. nigra* in Culbin Forest. Even these were in stands of Corsican Pine adjacent to Scots, which were never more than 100m distant. It is plain that in Britain at the present time the Scots Pine is an essential requirement of Crested Tit habitat. In 22 cases the habitat was predominantly native Scots Pine forest while in 25 it was plantation. Crested Tits were not found breeding in plantations less than 20 years old.

The Morayshire coastal and lower Spey Valley sites are mainly in plantations, while most Ross-shire and west Inverness-shire records come from natural-looking forest. In the upper Spey Valley both habitats are extensively utilised.

Information was sought on the nature of the side branches of the trees (table 1) as it was felt that this might affect the ability of birds to move between the tree canopy and the ground where they regularly feed, hence influencing their distribution (see Discussion).

Table 1. Height above ground of lowest side branches on Scots Pine trees in Crested Tit territories

Height (metres)	1 or less	2	3	4	5
No. of records	14	8	2	2	3

The nature of the ground cover was described in most cases and here the dominant species was Heather *Calluna vulgaris* which featured in almost all descriptions, very often characterised as 'rank' or 'bushy'. In Culbin Forest, however, Heather was absent from the immediate vicinity of three nest sites. In these cases the only ground vegetation was a scant covering of mosses and lichen; although patchy Heather was

growing at a distance of 80-100m in each case. Particularly inland, the presence of long Heather in a bird's range may be of some survival value. Crested Tits commonly feed on the ground during winter and in snowy weather food may still be available in thick Heather cover although inaccessible on level ground. This would apply less in coastal forests such as Culbin where snow seldom lies thickly for long.

### Discussion

Any discussion of the Crested Tit's distribution in Britain must attempt to answer the following points:

- (1) Why do they restrict themselves to northern Scotland despite a relatively large amount of Scots Pine elsewhere in Britain?
- (2) Why, within northern Scotland, is Speyside well populated while the birds are absent from apparently similar woodlands in Deeside?
- (3) Why, within the birds' range, are some Scots Pine forests occupied while others are not?

The European range of the Crested Tit stretches from near the Arctic circle in Scandinavia down to southern Spain and eastwards well into the Soviet Union (Witherby *et al.* 1943). Over much of this range the birds are found in Spruce *Picea abies*, and even broadleaf forests, as well as various species of Pine. In Britain Spruce has never been an endemic species and they are restricted to Scots Pine.

In Britain we can assume that the Crested Tit colonised after 10,000 BP, following the last ice age, and before Britain became isolated from Europe around 8,000 BP. As the ice retreated so the Crested Tit spread northwards—eventually presumably occupying most of the Caledonian Pine Forest which covered much of upland Scotland. Southern England at this time contained little Scots Pine and so the Scottish Tit population became isolated. This perhaps resulted from the fact that they were by this time more wholly adapted to Scots Pinewood than their southern European counterparts living in areas where Scots Pine was less exclusively dominant. Such isolation eventually led to the formation of a distinct subspecies, *Parus cristatus scoticus*.

In recent times forestry planting has led to a great increase in new Scots Pine plantations in southern Scotland and England but the sedentary nature of Crested Tits has meant that these have remained uncolonised. Within Europe birds may move to a limited extent, for example in the tit irruption of autumn 1957 some Crested Tits were reported moving along the south coast of the IJsselmeer in Holland (Cramp *et al.* 1960). They seem reluctant to cross water as they have only

been recorded in the south or east of England on about ten occasions between 1844, on the Isle of Wight (Kelsall & Munn 1905), and the most recent record of one seen in the Isles of Scilly in 1971 (Penhallurick 1978). Colonisation of new areas of Britain from either Europe or the very static Scottish population therefore seems most unlikely.

Within the north of Scotland the natural habitat of the Crested Tit, the Caledonian pine forest, has been progressively reduced as the trees have been felled for building, smelting and to create grazing land. Today the largest remaining fragments are in Speyside, Deeside and the Glen Affric area of Inverness-shire. As the pines were felled so presumably the Crested Tits retreated into increasingly isolated pockets. Many of the larger pockets retain birds at present with the notable exception of Deeside. It seems unlikely that Deeside never held Crested Tits as large areas of habitat appear suitable. Perhaps the most likely reason for their current absence is that the population was at one time wiped out by some natural catastrophe and the Cairngorm mountains have subsequently presented a barrier to recolonisation from Speyside. The nature of such a catastrophe is unclear, but the Deeside winters can be colder than those on Speyside (table 2) and the effect of severe weather on Crested Tit numbers can be dramatic. For example the population in part of Rothiemurchus Forest on Speyside was reduced from ten pairs to three pairs following the severe winter of 1947 (Nethersole-Thompson & Watson 1974).

**Table 2.** Average daily mean temperatures in degrees Celsius at stations on Deeside and Speyside (from Ross in Omand 1976)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Braemar (Deeside)	0.4	0.5	2.7	5.2	8.2	11.5	12.7	12.3	10.3	7.5	3.4	1.7
Glenmore Lodge (Speyside)	0.7	1.1	3.2	5.4	7.9	11.2	12.6	12.3	10.3	7.5	3.8	2.2

Note : The averages for Braemar (Height 333 m) are for the period 1941-70 while those for Glenmore Lodge (Height 341 m) are estimates from short-term records.

With the exception of Deeside most sizeable native pine-woods are occupied and these have provided the nuclei from which Crested Tits have colonised plantations during this century. At present the distribution of the birds in plantations is very patchy, the coastal forests of Morayshire being well populated while the extensive inland forests of Culloden, Assich and Darnaway contain, at best, a very few pairs. This situation is doubtless attributable to a number of factors.

Crested Tits require dead tree stumps in which to excavate their nest holes. For this purpose a minimum trunk diameter of around 15 cm seems necessary, which will preclude birds from breeding in plantations less than 20 years old. Colonisation of new plantations might be speeded up by leaving large dead stumps standing in the plantation area, were this not against good forestry practice. Alternative nest sites can be used and in some of the Moray Firth coastal plantations the birds regularly use nest boxes. In Lossie Forest Crested Tits have been found excavating, albeit unsuccessfully, into dead trees of only 10 cm diameter—further evidence of the pressure on available nest sites in such woods.

As plantations come of age they can only be colonised if an established Crested Tit colony exists within the birds' regular dispersal distance. Deadman (1973), working in Culbin Forest, found a mean dispersal distance for juveniles of 1,343 m with a maximum of 2,232 m. His sample, however, consisted of only ten birds and, no doubt, longer dispersals sometimes occur. The populations in coastal Morayshire can be accounted for in this way. Crested Tits were first recorded at Fochabers as early as 1868 or 1869, having presumably spread from upper Speyside, and were fairly numerous there by 1901 (Baxter & Rintoul 1953). From Fochabers further spread westwards could then take place, the first records from the Forres area coming by 1910-20 (Campbell 1974). Why further westward spread into the inland forests of Nairnshire and northeast Inverness-shire has been on such a small scale is unclear although much of the planting here is of comparatively recent origin and populations may increase in the near future as more nest sites become available. Colonisation from the Carrbridge and Grantown woods to the south would be less likely because of the intervening open moorland.

When plantations consist of tall, smooth-boled trees with branches near the top they again lose their attractiveness to Crested Tits, a phenomenon observed in the Speymouth Forest in recent years. This might be explained by the fact that, in autumn and winter especially, Crested Tits frequently feed on the ground. This is normally reached by working progressively down through the branches of trees and birds appear reluctant to fly directly to the ground from a high canopy. The evidence on side branches obtained in this survey points to habitats containing trees with low side branches being favoured although, of course, this situation will pertain in other woods where Crested Tits are absent for other reasons. This may be a further contributory factor in the establishment of the populations in the Morayshire coastal forests, which are mostly on poor soils and contain areas of stunted tree growth which are favoured feeding areas for Crested Tits.

In certain areas plantations which do not offer breeding habitat may be important in providing a bridge between isolated pockets of native pine. Here small groups of Crested Tits must always be at risk from disease or climate and re-colonisation would otherwise be unlikely.

Of particular concern at the present time are threats to the continued existence of the native woodlands. In some areas lack of regeneration of pine trees due to grazing pressure is a serious problem. Fencing of the woodlands to exclude deer and stock, as in parts of Glen Affric, provides an effective, albeit expensive, solution. A major threat is provided by the increasing commercial forestry practices to which woodlands are being subjected. The interplanting of the natural woodlands with high density plantations removes the open character of the forest with its well developed shrub layer, much favoured by Crested Tits. Dead and rotting trees which provide nest sites are also likely to be extracted. Even if the plantations which subsequently grow up are predominantly of Scots Pine they will presumably support at best the much lower density of Crested Tits currently to be found in other inland plantations. The complete destruction of the habitat will follow if the mature native trees are felled when the plantation is cropped.

### Size of the population

Estimates of the Scottish population in recent times have ranged from 300-400 pairs by Nethersole-Thompson in Darling & Boyd (1969) to 'approaching or even exceeding 1,000 pairs' by Sharrock (1976). The latter estimate was based on an average figure of at least 20 pairs per occupied 10-km square.

Another possible method of assessing the population involves measuring the area of occupied forest of different types and applying observed densities in different habitats to these figures. For this purpose an attempt was made to assign occupied woodlands to one of three categories:

- (1) Natural looking pinewood such as that found in parts of Abernethy, Rothiemurchus, Glen Feshie and Glen Affric. Total occupied area c.3,300 ha.
- (2) Areas of natural looking pinewood at low density or mixed with birch *Betula*. Total occupied area c.4,000 ha.
- (3) Plantations. Total occupied area c.35,000 ha.

Average densities for the natural pinewood (category 1) were taken as 0.15 pairs per hectare (S. Taylor pers. comm.). In plantations densities vary considerably, from 0.1 pairs per hectare in part of Culbin Forest (Deadman 1973) to 0.01 pairs per hectare in Lossie Forest (pers. obs.). The issue in planta-

tions is of course further complicated by the fact that the species and age composition of the forests is of a patchwork nature, sometimes being suitable for Crested Tits and sometimes not. The Culbin density includes only suitable breeding habitat while the Lossie figure is an average for the whole wood, including much unsuitable habitat. For this reason the Lossie figure is adopted though for some forests this may be rather low. No figures are available for the second category, of low density natural pine, and the plantation density is therefore adopted for these areas also. From these figures it is possible to arrive at some estimate of population size (table 3).

**Table 3. Population estimates of Crested Tits in different woodland types**

Woodland	Area (ha)	Pairs per ha.	Total pairs
Pure natural looking pinewood	3300	0.15	495
Low density natural pinewood	4000	0.01	40
Plantations	35000	0.01	350
		Total population	885

Although no claim of great accuracy is attached to the estimated total of 885 pairs it seems unlikely that, even in a good year, the population will greatly exceed 1,000 pairs. Following a severe winter the numbers could be considerably less, perhaps leading to extinction of small populations on the periphery of the range. 1979 and 1980 followed, respectively, severe and mild winters so the results of this survey might be expected to show an average situation.

### Acknowledgments

I am pleased to acknowledge the help of the many people who spent time in the woods obtaining records for this survey. My special thanks are also due to Stewart Taylor and David Whitaker for supplying unpublished details of Crested Tit status in their areas, and to Roy Dennis and Tony Mainwood for constructive criticisms of an earlier draft of this paper. Lastly I acknowledge generous financial help from the SOC Endowment Fund which enabled me to travel extensively to the more remote woodlands during 1980.

### Summary

The breeding distribution of the Crested Tit during 1979 and 1980 is described and recent changes are pointed out. Reasons for the present distribution are discussed. Information on habitat preference is given and current threats to the native Scots Pinewoods are described. The current breeding population probably fluctuates around 900 pairs, according to the severity of the preceding winters.

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## Wintering waders on the Atlantic shores of the Uists and Benbecula

NIGEL E. BUXTON

*The great sweeps of sand along the Atlantic shores of these Outer Hebridean islands are known to be important for waders in summer and autumn but have been little studied in winter. This survey demonstrates that in February they support nationally significant populations of several species.*

Although many of Scotland's estuaries have been censused regularly for waders during the last decade, through the Birds of Estuaries Enquiry, few data have been forthcoming on the waders of the southern isles of the Outer Hebrides. Buxton (1979) has quantified the wintering birds of the Eye Peninsula (Lewis), examined much of the coastline of Lewis and Harris (1982) and monitored several sites in those islands through the year (1981). Prater (1973a) suggested that large numbers of some species winter in the Uists and Summers & Buxton (1979) have shown that considerable numbers of Ringed



Plover, Dunlin, Turnstone and Sanderling occur on autumn passage. However, due to the scarcity of observers through the year, and especially in midwinter, the situation has never been clarified. This survey of almost 200 km of coastline, wet machair and floodings, carried out between 11th and 15th February 1980, was designed to determine the numbers of waders on the Atlantic coasts of the Uists and Benbecula in winter (figure).

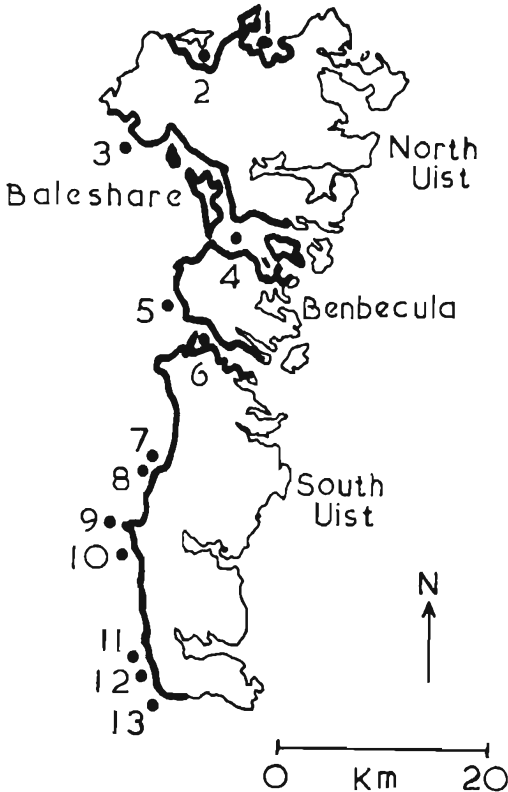


Fig. The Uists and Benbecula showing the area counted for waders (thick line). 1—Traigh Ear, 2—Vallay Strand, 3—Lagan Maskeir, 4—Oitir Mhor, 5—Peinavalla, 6—South Ford, 7—Howmore Estuary, 8—Peninerine, 9—Rubha Ardvule, 10—Trollaskeir, 11—North Boisdale, 12—Garrynamonie, 13—Smerclate.

#### Habitat and methods

The west coasts of the Uists and Benbecula are mainly extensive shell-sand beaches backed by dune systems, which

are occasionally interrupted by rocky shore or shingle, e.g. Peninerine, Trollaskeir (figure). In some places this rocky shore takes the form of a promontory, as at Rubha Ardvule. Landward of the dunes is the machair—a floristically-rich, calcareous grassland plain. During the winter much of this low-lying area floods to form marshes and shallow pools. The majority of the west coastline, including most of the machair, was visited once during the study period; only northwest North Uist was omitted due to lack of time but it is believed that only Turnstones and Purple Sandpipers occur there in any significant numbers. Occasional visits to the east coasts of the Uists have shown that the latter support very few birds.

### Results

The counts are summarised in table 1.

**Table 1. Numbers of waders on the west coasts of the Uists and Benbecula**

	North Uist	Benbecula	South Uist	Total
Oystercatcher	568	154	1,102	1,824
Ringed Plover	849	247	742	1,838
Golden Plover	—	36	102	138
Grey Plover	71	2	27	100
Lapwing	338	45	515	898
Knot	5	—	3	8
Sanderling	255	88	917	1,260
Purple Sandpiper	70	412	940	1,422
Dunlin	2,113	26	1,036	3,175
Bar-tailed Godwit	1,178	4	713	1,895
Curlew	163	129	435	727
Redshank	34	105	237	376
Turnstone	139	284	1,030	1,453
Total	<u>5,783</u>	<u>1,532</u>	<u>7,799</u>	<u>15,114</u>

**Oystercatcher.** The main concentrations were on the large sandy flats of the Oitir Mhor and the South Ford between the three islands (209 and 569 birds respectively). One other strand and two areas of rocky coast supported flocks of over 100 birds but usually distribution was in loose flocks of 10-80. Excluding the Oitir Mhor and the South Ford, the shores of South Uist carried the largest numbers of birds although the totals on both North Uist and Benbecula were still considerable.

**Ringed Plover.** This was one of the most common species with over 1,800 present, mainly in North and South Uist where the favoured sandy habitat is most widespread. In North Uist the largest flocks frequented the sheltered northern strands, but in South Uist birds were distributed more or less continuously along the relatively more exposed linear shore. However,

certain foreshore localities in the latter island did support sizeable concentrations (30-120 birds) whilst the biggest flock was 349 birds feeding on flooded machair at Rubha Ardvule. These birds probably moved to the adjacent shore at a suitable state of tide or weather conditions. In North Uist the largest flock was 447 birds on Traigh Ear, but two other strands supported flocks of over 100, with smaller numbers further south, mainly in the Oitir Mhor.

**Golden Plover.** Very few occurred on the coast and these were mainly in Benbecula and South Uist. More detailed counts of the croftland would undoubtedly have revealed the true status.

**Grey Plover.** The favoured habitats were mainly the fords between the islands and the extensive strands of North Uist. The largest single flock was 51 birds feeding amongst Bar-tailed Godwit and Oystercatchers on Vallyay Strand, but usually numbers were far smaller; a minimum of 10 in the Oitir Mhor, 12 in the South Ford and 10 in the vicinity of Baleshare.

**Lapwing.** The largest coastal flocks were at Baleshare and the southern part of South Uist. Further large numbers, which were uncounted, frequented inland crofts, probably with the majority concentrated in South Uist.

**Knot.** Very few wintered in the Uists; a situation which is typical throughout the Outer Hebrides (Buxton 1981). It is probable that some wintering Knot had already left since evidence from Harris suggests that the majority of Knot leave the islands in February (Buxton 1981). Small flocks are certainly common on the strands during migration; for example, 66 were on Traigh Ear in April 1979 and 35 more near Baleshare.

**Sanderling.** The islands supported 1,260 Sanderling, a total which compares very favourably with the 2,912-4,814 counted in the Birds of Estuaries Enquiry during the winters of 1971/2-1974/5 on mainland Britain. The most important sites were along the Atlantic shores of South Uist with only 255 in North Uist and 88 in Benbecula. The largest flock (306) roosted along with Dunlin and Ringed Plovers in the Howmore Estuary, and seven other flocks contained more than 50 birds.

**Purple Sandpiper.** Benbecula and South Uist supported most (95%) of the 1,422 counted, although the northwest corner of North Uist would certainly have held additional birds. The four largest flocks of c.200 each foraged mainly on rocky shores and outcrops, but several of the other groups fed on beds of cast kelp in association with Turnstones.

**Dunlin.** This was the most numerous of the small waders with

10 flocks of over 100 birds and one of c.1,000, mainly on North and South Uist. Most of the larger strands and flats supported flocks of between 150 and 300 with the greatest overall concentration in North Uist. In South Uist the largest intertidal concentrations were near the South Ford (141) and the Howmore Estuary (220) but even bigger numbers (446) fed on flooded machair to the north of Rubha Ardvule.

Snipe. Few occurred on the shore in the mild weather of 1980 but numbers would be far greater in a hard winter. Observations in the Isle of Lewis have suggested that the numbers of birds on the shore are also greater in late autumn.

Bar-tailed Godwit. This is the common godwit of the Outer Hebrides with the population in the southern isles exceeding 1,800 birds. It was most abundant in North Uist with 410 in Traigh Ear and 503 in Vallay Strand. Another 200 frequented the Oitir Mhor, although only four occurred on Benbecula itself. In South Uist they were once again more common: the South Ford held over 500 with four other flocks of 30 to 70 birds distributed along the west coast.

Curlew. These were scattered along all the coasts but were most numerous in the southern half of South Uist. Except for the fords and the large strands of North Uist Curlew mostly frequented the machair rather than the foreshore. Flocks on the shore tended to be small (<10), whilst the largest flock on the machair consisted of 150 birds. As with Golden Plover and Lapwing, the 727 birds counted almost certainly do not represent the true population; many more were probably dispersed inland.

Redshank. Although 376 were counted, this species was probably underestimated due to extensive inland feeding. Few occurred in North Uist but Redshank were common in Benbecula and South Uist with flocks of up to 80 in the latter island.

Greenshank. As in Lewis and Harris (Buxton 1981), the numbers (6) wintering on the west coasts of the Uists were small, with the majority feeding around the edges and channels of the North Ford.

Turnstone. Although the overall total was large (1,453), relatively few were counted in North Uist, except near Lagan Maskeir (120). However, the vicinity of Balranald, which was uncounted, is known to support more. About 300 frequented the west coast of Benbecula with over 100 concentrated in the northwest of the island, but the largest numbers were in South Uist. Turnstones were not confined solely to rocky shores but fed also amongst the heaps of kelp on the strandline and on flooded machair with Dunlin and Ringed Plover.

Keip forms an important feeding site; large flocks (50-140 birds) foraged amongst it at six locations, whilst only two flocks of equivalent size were on rocky areas or boulder beaches.

### Discussion

Over 15,000 waders winter on the Atlantic coasts of the Uists and Benbecula. A few more, particularly Oystercatchers, Redshank and Turnstones, may winter on the east coasts, giving a total winter population of about 16,000 birds. This is a far greater number than winters in Lewis and Harris (Buxton 1982), although important concentrations do occur there on certain sites. The majority (52%) frequent South Uist, mainly along the beaches, although large numbers of the smaller species feed on the flooded machair. North Uist supports most of the remainder (table 1) with high densities in Traigh Ear (640/km<sup>2</sup>) and Vallay Strand (150/km<sup>2</sup>). The Oitir Mhor and South Ford are locally important for Oystercatcher and Dunlin while internationally and nationally important concentrations of several species occur along the western seaboard (table 2). The total of 1,800 Ringed Plover is large compared with both the mainland Scottish (950-1,613) and British (6,430-7,648) estuarine populations counted during the Birds of Estuaries Enquiry (Prater 1973b-1977). Two of the concentrations are internationally important whilst two others are of national importance (table 2).

Table 2. Sites where important numbers of waders occurred

	Ringed Plover	Sanderling	Purple Sandpiper	Bar-tailed Godwit
Traigh Ear	447**			
Vallay Strand	122*			503*
Lagan Maskeir		150**		
Peinavalla			213*	
South Ford				500*
Howmore Estuary		306**		
Peninerine			198*	
Rubha Ardvule	349**		241*	
Trollaskeir		139*		
North Boisdale		100*		
Garrynamonie	121*			
Smerclate			200*	

\*\* internationally important; \* nationally important (see Prater 1981)

Prater and Davies (1978) calculated a total of 1,175 Sanderling for Scotland from the average winter maxima during 1969-75. They estimated the numbers in the Outer Hebrides to be 750, but this study shows the numbers to be well in excess of 1,000. This makes the Outer Hebrides, with two internationally important concentrations, second only to Lancashire as a wintering area in the British Isles.

Two other species, Purple Sandpiper and Bar-tailed Godwit, winter in nationally important numbers (table 2). The numbers of Purple Sandpipers, again underestimated by previous workers (Atkinson *et al.* 1978), with 940 on the west coast of South Uist alone, bear comparison with those on east Scottish coasts (Summers *et al.* 1975).

Even species which do not attain international or national standards are of immense importance in the local Outer Hebridean or regional northwest Scotland context. Dunlin, birds occurring elsewhere in Britain in tens of thousands, are normally present only in small numbers scattered throughout the Outer Isles. Over 3,000 birds is a huge proportion of the local population and 1,000 in a single flock is an unusual concentration.

There is an intrinsic difficulty in discussing nationally or internationally important sites in the Uists since few in these islands are discrete entities. Consequently flocks may not be static and the importance of the site will move with the flock, i.e. along the shore or between machair and shore. In the short time period of this census there was no evidence that birds moved between areas, but whereas during February 1980 the number of Ringed Plover in the North Ford was 71, in October 1980, well after peak migration in the Hebrides, over 400 were present. Several areas where these waders concentrate are already noted as Sites of Special Scientific Interest by the Nature Conservancy Council and a further measure of protection from disturbance, even if only from birdwatchers, is given by the army ranges. Certain of these areas are traditionally good for waders, but before their true importance can be fully understood further counts and ringing studies are needed to determine the amount of movement along the coast and between sites.

### Acknowledgments

My thanks to Colin Brown for help with transport throughout the survey. Dr R. W. Summers offered valuable criticism and discussion on an early draft of the paper.

### Summary

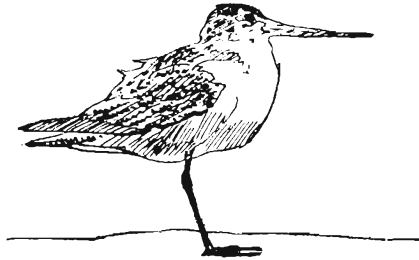
Over 15,000 waders were counted wintering on the Atlantic coasts of the Uists and Benbecula during February 1980. Dunlin was the most numerous species but Ringed Plover and Sanderling were both present on some sites in internationally important numbers. Bar-tailed Godwit and Purple Sandpiper also occurred in nationally important numbers in places. Previous studies of both Sanderling and Purple Sandpiper have underestimated the numbers in the Outer Hebrides.

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BAR-TAILED GODWIT John Busby

## Birdwatching in Sutherland

IAN DURANCE PENNIE

One day I walked a transect in west Sutherland for the Winter Atlas preliminary survey. In 4½ hours I saw two birds—a Hoodie Crow and a Golden Eagle. A few days later a couple of hours in a birchwood produced two Blue Tits and a Woodcock. Even in early summer one can walk for several hours on some of the Sutherland moors and see no birds other than Greenshanks and Skylarks. Had I gone instead to the Dornoch Firth at the opposite end of the county, I could well have seen 2,000 Eiders, 800 Long-tailed Ducks and 1,000 each of Oystercatchers and Bar-tailed Godwits.

The Dornoch Firth is one of the greatest holding grounds for Wigeon in the northern half of Britain, with probably over 10,000 if Loch Fleet is included, and 1,000 each of Teal and Mallard. Offshore between Brora and Tarbat Ness the Eider

was still relatively uncommon even in the 1950s but now there are up to 3,500 in autumn. Long-tailed Ducks in the same area are over 1,000 with similar numbers of Common and Velvet Scoters. All this, with the occasional bonus of King Eiders and Surf Scoters, makes one of the most attractive seaduck watching areas in Scotland. Unlike Easter Ross, however, Sutherland is not noted for goose watching. Small numbers of Greylags do turn up from time to time but it is uncertain whether these are migrants or local birds from Badanloch/Loch Brora.

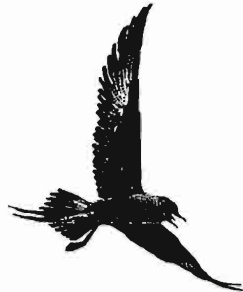
For waders—superb!—both Dornoch and Loch Fleet, and the latter has the advantage of the road round the south side within a few yards of the tide edge. There is not much to choose between them otherwise—1,000 Oystercatchers with a climax of 2,000 Bartails at Dornoch and 3,000 Knot on the Golspie shore. Embo Pier and the mouth of Loch Fleet are best for seaducks, and Dornoch Point and Ardnacalce Point for surface feeding ducks and waders. Skelbo Point, preferably with a telescope, is an excellent place to see ducks and waders—from your car—and the Golspie sea wall is also good.

Inland in the southeast corner there is much of interest. The coniferous plantations, which still have a few Capercaillies, are now sufficiently mature to have attracted Crested Tits and Crossbills. Up to the 1950s there were Corncrakes in every field, but an even stranger loss in the last ten years has been the once familiar song of the Corn Bunting. South of the Ord of Caithness there are no sea cliffs worthy of note but Fulmars have colonized every possible site as far inland as Morvich Rock in Strath Fleet. Many years have passed since Fulmars mistook Dunrobin Castle for a cliff and now Fulmars and Rabbits live side by side along the edge of the raised beach between Dunrobin and Strathstevan.

The march between Sutherland and Caithness runs from The Ord to Drum Hollistan and at no point on this line are you within sight of human habitation. In this seldom-visited area of desolate moorland, flows and dubhlochans Black-throated Divers, Common Scoters and Arctic Skuas all breed. West from Drum Hollistan to Strathy is fine cliff scenery with a few scattered colonies of auks and Cormorants. For migration studies this coastline is proving to be of great importance. Attention to this was first drawn in 1931 when John Berry witnessed the greatest immigration of Snow Buntings ever recorded, and recent trapping studies by Graham Crittenden around Melvich have shown a regular passage of small passerines. Records from Strathy Point, Farr Point and Faraid Head indicate that these are potentially good spots for sea-watching.



Further west lies Island Roan, in reality a group of three islands, Eilean nan Ron, Eilean Iosal and Meall Halm. The cliffs here are poor in nesting birds, probably because they do not form good ledges, but there is a Cormorant colony on Meall Halm and Bonxies are now nesting on the main island. The greatest interest lies in the Storm Petrel colony which seems to be a large one, though their status in Sutherland is really little known. Island Roan is a wintering ground for Barnacle Geese, which may be identified and counted with a telescope from the adjacent mainland. Barnacles winter also on Hoan Island and are frequently seen on the grasslands near Balnakeil, with smaller numbers on Handa, Badcall and the Assynt shores.



ARCTIC SKUA *Donald Watson*

Although the Kyle of Tongue cannot compare with the east coast firths for birds it is a place of outstanding beauty, greatly enhanced by the magnificent new causeway which might have been designed for bird and seal watchers. The great Moine Peninsula, vast and remote, will reward the energetic birdwatcher with spectacular scenery but, Fulmars apart, he will have to work hard for his birds: a pair of Peregrines and Ravens, skuas possibly, and many breeding Dunlin and Redthroats on the tarns, but in this sort of terrain one must never overlook the possibility of northern waders on the tundra-like higher slopes. From the cliff tops on a clear day the twin islands of Stack and Skerry are clearly seen on the northern horizon, the Stack with its gannetry like a great white haystack and the Skerry a low reef with a lighthouse looking no bigger than a candle.

West again round birdless Eriboll to the lime rich grasslands of Durness and Balnakeil and a different world! Here the birdwatcher should consult his geological map and move inland to a unique series of lochs, lime and bird rich, Caladail, Croispol, Lanlish and Borralie, but even without a map the *Dryas octopetala* at the roadside gives the show away at

once. Here are inland tern colonies and Black-headed Gulls (rare in the west) but these lochs are most noted for their breeding Tufted Ducks, and there have been recent breeding records of Gadwall and Shoveler. Back on the coast, from the Balnakeil car park walk along the sands to Faraid Head. The bay itself is worth a look in spring for Long-tailed Ducks, Eiders, Great Northern Divers and grebes but the main interest is the Puffin colony on the east side of the headland, reckoned by Mike Harris to have 1,800 occupied burrows. Here, with reasonable care and proper footwear, the Puffins may be watched and photographed at close range.

Across the Kyle of Durness a minibus runs from Keoldale Ferry to Cape Wrath lighthouse and the Clo Mor—the 'Great Web of Cloth' as the striated cliffs appeared to early mariners. Here are the highest cliffs and largest Puffin colony on the British mainland, together with uncountable colonies of Guillemots, Razorbills, Kittiwakes and Fulmars. Leave the minibus at the top of the Kearvaig track, walk to Kearvaig and, approaching the Clo Mor from the west, follow the clifftop eastwards for about three miles, skirting the east side of Sgribhis-bheinn (pronounced 'Skreeshvein') to be picked up (by prior arrangement) at Inshore. This is a tough walk but a memorable one. The Capeside hills have the lowest (altitudinal) Ptarmigan in Scotland and the only Dotterel nest ever recorded in Sutherland was found here. There is little to be gained by going on to Cape Wrath itself unless, hopefully, to see North Rona from the lighthouse, but it can be seen equally well from the top of Sgribhis-bheinn or Far-mheall given a good day.

From Cape Wrath southwards the cliffs, though imposing, have no significant bird colonies, apart from inaccessible Bulgach Island, until Handa is reached. Handa has cliffs and bird colonies scarcely less impressive than the Clo Mor, though many fewer Puffins, but the added attraction of Great and Arctic Skuas. The island is a RSPB reserve with a summer warden and is reached by boat from Tarbet. Between Handa and Point of Stoer to the southwest lies Eddrachillis Bay, studded with islands, which are of little ornithological significance apart from two Cormorant colonies and an uncertain number of Storm Petrels. An interesting feature of several of these islands and the adjacent mainland cliffs is the number of cliff nesting Herons. There are no large heronries in the west but small groups scattered along the coast from Loch Inchard to the Assynt shore.

The visitor to Sutherland may be surprised to see the amount of afforestation in a land once regarded as a treeless

wet desert. Most is of course coniferous plantation, a source of much criticism; nevertheless new habitats have been created. Short-eared Owls and Hen Harriers have flourished in the early stages. Crossbills and Crested Tits are now established breeders in some of the older parts, Sparrowhawks have recovered and there are even rumours of Goshawks. The Sutherland birchwoods are still a delight, sometimes appearing rather birdless it must be admitted; it needs a sunny day to bring the Wood Warblers into song and a second Brambling nest has yet to be found. Redwings come and go—strangely, many of our nests have been in gardens and rhododendron thickets.

One does not have to look far for Greenshanks but Wood Sandpiper has been recorded only from one or two remote and nameless marshy lochs. Red-necked Phalaropes have been seen in similar situations but it seems most unlikely that they are regular breeders. Scoters and Arctic Skuas are very scarce indeed, apart from the established colony of the latter on Handa; Great Skuas have increased remarkably, however, and there are probably several mainland sites in addition to the islands mentioned.

No account of Sutherland would be complete without some mention of divers. Redthroats breed on small lochs and tarns throughout the county but there is considerable cause for concern regarding the Blackthroat which prefers larger lochs, many of which are subject to great fluctuations in water level. Anglers cause a lot of disturbance and one of our best known sites has now been abandoned following two successive years' robbing by egg collectors. There are plenty of Great Northern Divers on the sea, right into the summer on the west coast, but they are seldom seen on fresh water and there is no confirmed breeding record.

Where can I see an eagle? A frequent question, but difficult to answer. Opportunities of seeing eagles from the road are becoming less as fewer of the low ground eyries are now occupied. Probably the best bet is along the Strathmore road (Altnaharra to Hope) near the west cliffs of Ben Hope, but even on the high tops it is quite impossible to predict when and where an eagle will appear.

This brief sketch tries to give some idea of the variety of habitats in Sutherland, which is a county of great contrasts and superb birdwatching places, some of which can be enjoyed even by those unable (or unwilling!) to walk a step.

*Ian Durance Pennie,  
5 Badcall, Scourie, IV27 4TH*

## Short Notes

### Storm Petrels attacked by Peregrines

On 28 July 1981 at 0830 hrs I was releasing ringed Storm Petrels at the pier on an island in the Strathclyde region when I noticed a Peregrine gliding c.60 m above the tidal convergence midway between Sanda and Sheep Island. About 90 birds were released and I watched their progress as they flew erratically over the sea towards Sheep Island. Many of the petrels had reached the tidal race c.250 m from the pier and had turned to follow its course into the Sound of Sanda when the Peregrine swooped hard. A 'kill' looked certain as the raptor levelled out behind one of the petrels and rapidly overtook it, but just as it was about to be caught the petrel dived into the water and remained submerged for five seconds. The petrel took flight immediately it resurfaced, whilst the Peregrine mounted quickly to about 30 m. Over the following three minutes the Peregrine stooped at the same petrel about 25 times and on each occasion the victim avoided capture by diving underwater from full flight just as it was about to be seized. The outcome of this incident is unknown as both birds disappeared from view to the West.

On 31 July 1981, T. D. Dick, P. Ellis and I had released several Storm Petrels at the pier when we saw two Peregrines leaving the cliffs at the Eastern extremity of the island. We watched the Peregrines and petrels alternately with tripod-mounted telescopes. Both Peregrines took about one minute to station themselves c.50 m above the petrels, which were zigzagging swiftly through the tidal race. The Peregrines employed a co-operative hunting technique and proceeded to stoop in turn at the same victim, which dived obliquely, entering the water with a splash each time one of the Peregrines was about to strike. On each occasion the petrel resurfaced within five seconds and was quickly on the wing again, but eventually it was seized and carried off.

Co-operative hunting in pairs by Peregrines has been noted, however it is interesting that it was executed to secure a Storm Petrel which could be termed a difficult species for a single Peregrine to catch, in view of this previously unrecorded evasive diving behaviour. The Peregrine's choice of prey varies with availability and type of habitat and although at least 117 bird species are known to have been taken in Britain, I have been unable to find any reference in the literature which includes Storm Petrel on the prey list.

ED MAGUIRE





PLATES 12 (overleaf) & 13. The breeding habitat most favoured by Crested Tits in Scotland (p. 97) is fairly open woodland with well developed shrub and field layers. Nests are generally excavated in dead stumps at least 15 cms. in diameter.

Overleaf - *R. T. Smith*

Upper & Lower - *M. J. H. Cook*





PLATE 14. Internationally significant concentrations of Sanderling (upper) and Ringed Plover (lower) winter on the sandy shores of the Uists (p. 106).

*S. R. D. & E. S. da Prato*





PLATE 15. Among Sutherland birds whose status is currently changing (p. 113) are Sparrowhawk—benefiting from extensive conifer planting, and Great Skua—increasing in several areas.

Upper - *R. T. Smith*

Lower - *W. S. Paton*





### Common Tern attacking Little Tern chick

On the evening of 21st June 1981 my wife and I were watching the mixed Common/Little Tern colony at Tynninghame, East Lothian. A Common Tern was observed flying with a Little Tern chick, a few days old, in its beak. While in flight the Common Tern was mobbed by the parents of the chick until it was dropped. The Little Tern's parents then offered food to the chick but it did not accept this, and appeared to be injured.

Common Terns have been noted attacking Little Tern chicks twice at Titchwell, Norfolk in 1976 (N. Sills pers. comm). In one attack the adult was seen to fly off with the chick but what happened subsequently was not recorded. The nests of the Common Tern and Little Tern were 35 m apart. Common Terns have not been noted attacking Little Tern chicks at St Cyrus (N. Atkinson pers. comm). Common Terns usually attack intruders such as young gulls, sometimes with fatal results.

A. J. CLUNAS

### Inland colonies of Lesser Black-backed Gull

On 23 June 1951 G. L. Sandeman and D. G. Andrew found 150 pairs of Lesser Black-backed Gulls and 2-3 pairs of Herring Gulls breeding on Flanders Moss (*Scot. Nat.* 1951: 196). When I visited the Moss on 27 May 1974 c.500 pairs of Lesser Black-backed Gulls, 50 pairs of Herring Gulls and 500 pairs of Black-headed Gulls were breeding. On 21 May 1975 numbers of Lesser Black-backed and Herring Gulls had increased to 700 pairs and 100 pairs respectively, Black-headed Gulls remained at 500 pairs, and at least 20 pairs of Common Gulls were present. In 1976 a further increase in Lesser Black-backs was noted but the number of Black-headed Gulls was down. No further check was made until 6 May 1981 when it was found that Lesser Black-backs numbered over 1,000 pairs, Herring Gulls were down to 5 pairs, and only 2 pairs of Black-headed Gulls were on their usual nesting area. No Common Gulls were seen on that occasion but on 30 May 1982 10-20 pairs were seen on the northern fringe of the Lesser Black-backed Gull colony, which now numbers well over 1,000 breeding pairs. It seems that the Lesser Black-backed Gull is gradually taking over, and eliminating other gull species from, this inland site.

A similar colony of gulls exists on Meall a'Choire Odhair (335m) on the north side of the Braco-Comrie road. Alex Cross of Monifieth visited this site on 23 May 1947 and found Black-headed Gulls breeding and one pair of Herring Gulls

at a nest (*Scot. Nat.* 1953: 195). On 16 May 1982 I found at least 700-800 pairs of Lesser Black-backed Gulls and 6 pairs of Herring Gulls on nests there, and about 200 pairs of Common Gulls breeding 500m to the north-west: no Black-headed Gulls were seen. Quite a lot of shredded polythene is present on the ground around the nests, indicating that the birds are foraging far afield on rubbish dumps; this may account for a number of dead birds in the area.

P. W. SANDEMAN

### St Kilda Gannets in 1980

Murray (1981) estimated the Gannet population of St Kilda, Western Isles to be  $c.40,000 \pm 20\%$  nests in May 1979, and thought that the population had not increased markedly, if at all, since the last full count in 1959 (Boyd 1961). St Kilda has about a fifth to a third of all eastern North Atlantic Gannets, depending on which estimate of the St Kilda population is taken (Dixon 1973, Murray 1981). Any change in numbers there will have a great effect on the calculated rates of change of the total eastern North Atlantic population which was last put at +2.9% per annum (Nelson 1978) based on counts in 1939 and 1969. We visited Boreray, St Kilda in July 1980 to check on Murray's findings.

Table 1. Counts of Gannet nests in four sections of the Boreray gannetry

Section	1	2	3	4	Total
1979*	2,663	288	870	1,074	4,895
1980	2,860	298	950	1,192	5,300

\*from Murray 1981

Our totals of nests in the four areas counted in both years were on average 7.5% higher in 1980 (table 1) but this difference is well within the normal range of variation of different observers counting the same area at the same time, and the monthly variation in counts of a single colony within a single season (Wanless 1979). The colony extent in 1980 was the same as in 1979 and included the three areas colonised 1959-79; that is on the landward side of Clagan na Ruskochan (16 and 25 nests in 1979 and 1980 respectively), the northerly tip of Ant Sail and the slight increase in the centre colony on Stac an Armin (712 individuals in 1959, 828 nests in 1979 and 840 in 1980). Thus the colony appears to have shown no great change 1959-80.

We examined the contents of 1,680 well-built nests in four parts of the Boreray gannetry and found that 819 (48%) con-

Table 2. The proportions of nests containing eggs or chicks in four sections of the gannetry on Boreray in July 1980. Comparable data from 3 sections are given for Ailsa Craig 1974-76 (pers. obs.)

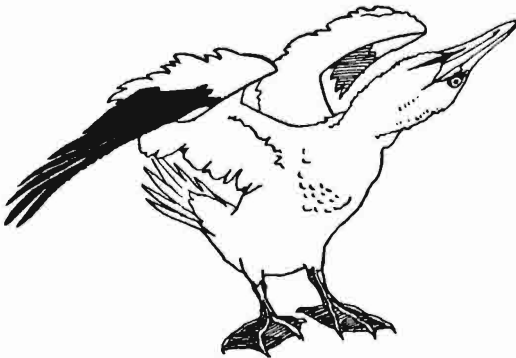
Section		Number of nests	Number of eggs/chicks	% nests with eggs/chicks
Boreray	1	325	172	53
	2	144	39	27
	3	553	266	48
	4	658	342	52
Ailsa Craig	1	686	446	65
	2	544	370	68
	3	630	460	73

tained eggs or chicks. This is a far lower proportion than was found on Ailsa Craig in 1974-76 (table 2). Thus the available evidence suggests that the gannetry on St Kilda may have a lower breeding success, and is not increasing at present, in striking contrast to more northern and east coast colonies which are expanding. Other St Kildan seabird populations are either stable or only increasing slowly (Harris & Murray 1979), again in contrast to east coast colonies. Conditions are presumably not so good for seabirds off north-west Scotland as they are in the North Sea.

### References

- Boyd (J. M.) 1961. The Gannetry of St Kilda. *J. Anim. Ecol.* 30: 117-136 ■  
 Dixon (T. J.) 1973. Estimates of the numbers of Gannets breeding on St Kilda 1967-1973. *Seabird Report* 1971: 5-12. ■ Harris (M. P.) & Murray (S.) 1979. Birds of St Kilda. *I.T.E. Publication*, Cambridge. ■ Murray (S.) 1981. A count of Gannets on Boreray, St Kilda. *Scott. Birds* 11: 205-211. ■ Nelson (J. B.) 1978. *The Sulidae*. Oxford University Press. ■ Wanless (S.) 1979. Aspects of population dynamics and breeding ecology in the Gannet *Sula basana* (L) of Ailsa Craig. Unpublished PhD thesis, University of Aberdeen.

S. WANLESS and V. E. WOOD



GANNET John Busby

## Reviews

**Der Zug europäischer Singvogel: ein Atlas der wiederfunde bernigter Vogel, Vol. 3** by Gerhardt Zink, published by Vogelwarte Radolfzell at the Max-Planck Institute, Moggingen, West Germany, 1981; 49 pages text; 51 pp maps; 27 x 36 cm; £16.10.

This is the third volume of a series covering European ringing recoveries of passerines. It is entirely in German and this review is based largely on the maps which are the basis of the book and the part most likely to be consulted by English speaking readers. 25 species are covered: most of the European crows (except Rook, Carrion Crow and Jackdaw), the titmice (except Blue and Great), two Treecreepers, Nuthatch, Wren, Dipper, four thrushes (Redwing, Mistle Thrush, Ring Ouzel and Rock Thrush) and the two redstarts. When the series was announced it was stated that maps would not be prepared for several common species but it is not clear if the obvious omissions from this volume are to be dealt with later. There are 178 maps in all but several species e.g. the Choughs, Siberian Jay and Crested Tit have either no map or one small summary map, due to the dearth of recoveries over any distance. Several of the species dealt with are relatively sedentary within Britain so it is interesting to see Dippers moving the length of Scandinavia or continental Coal Tits moving as far as Morocco. Perhaps the 25 maps for Redwing will provide the most interesting feature for many British ringers especially as the complex movements of this thrush are soon to be investigated in a special European-wide co-operative ringing project.

Besides the maps, a written summary and list of literature is provided for all 25 species. It is a great pity that this could not have been in English as well as German: apparently original plans called for an English translation but this is now unlikely. For most British ornithologists this means the book will probably be consulted in libraries rather than purchased: it is certainly a monument to the industry of its author and an essential starting point for future research.

S. R. D. DA PRATO

**The Plovers, Sandpipers and Snipes of the World** by Paul A. Johnsgard; University of Nebraska Press, Lincoln & London, 1981; 493 pages; 60 colour & 60 monochrome plates; many drawings & maps; 28 x 21 cm; £31.50.

This book aimed to cover the biology of shorebirds, but editing has cut it severely. Even in its main area of taxonomy, much of the evidence for conclusions is lacking. Despite lavish physical production, some terms, methods and diagrams are poorly explained.

After two chapters on Taxonomy and Evolutionary Relationships, and Reproductive Biology (oddly including long subchapters on 'Wattle, Spur and Toe Variations in Lapwings' and 'Outer Retrix Variations in Snipes'), follows a key to families, subfamilies and tribes. Each species is then described under names; subspecies (usually not described) and range; measurements and weights (but no mention of seasonal variation); description; habitats and food; social behaviour; reproductive biology; status and relationships (mixing conservation and taxonomy). The book concludes with an interesting list of derivatives of scientific names.

Population dynamics, migration and moult are not considered, and ecology only peripherally. Events outside the breeding season are not really considered, and the author seems unaware of the large quantity of European work on feeding ecology and behaviour. Maps concern only

breeding distributions. Although Palaearctic winter censuses are mentioned for some species, for others we are told that no counts are available.

Much space is devoted to drawings which appear to have been taken from skins and show little experience of the birds in the field; they compare poorly with the photographs. There is much repetition, and information is not always under the expected heading; indeed, sections appear to have been written separately. For example, 'Habitat and Food' records local concentrations of Ringed Plovers reaching one pair per ha, but less than 20 lines later 'Social behavior' reports two studies with contiguous territories each under 30m in diameter. I was also surprised to read that, without qualifications, this species is essentially coastal in the breeding season; it is increasing in Britain; and—perhaps most surprisingly—that the black of the facial and breast bands is replaced by brown for the early winter! Major discrepancies occur also between introductory and species accounts.

This book is intended as a "companion volume" to the author's *Ducks, Geese and Swans of the World*. With commendable honesty, Professor Johnsgard admits that he started to study waders only two years before finishing the book. Production of such a volume is a remarkable achievement but the lack of familiarity shows. I cannot recommend this book unless the reader is prepared to use it as an initial source to be checked against other reviews and original sources—and its price tends to discourage this.

MICHAEL W. PIENKOWSKI

**A Natural History of Aberdeen** by Peter Marren; R. Callander, Finzean, Aberdeenshire, 1982; 184 pages; 17 illustrations and folding map; 22 x 15 cm; £4.95 (soft back).

This is an interesting and readable book. The scope is general, but the author is primarily a botanist and his main objective is to trace the changes the growth of the city has wrought on the native flora, since the first books on the subject were written nearly 150 years ago. He is greatly interested in his illustrious predecessors, MacGillivray, Dickie and (especially) Trail. He voices the view that, in this "city-in-bloom", with miles of rose-beds and millions of daffodils, it is less than enlightened to have our dunes, links and estuaries landscaped and formalized too, with their whins, Skylarks, Stonechats and Linnets gone or confined to precarious remnants.

VERO WYNNE-EDWARDS

**The Thick-billed Murres of Prince Leopold Island.** A study of the breeding ecology of a colonial high arctic seabird. Canadian Wildlife Service Monograph Series - No. 6, by A. J. Gaston & D. N. Nettleship. Supply & Services Canada, Ottawa, 1981, xxvii + 350 pages; many photographs and diagrams; 16 x 24 cm CN\$38.40.

This is a worthy successor to the first C.W.S. monograph, Tuck's *The Murres*. All serious students of seabirds should buy it. It presents the results of a three-year study, part of a general investigation of the seabirds of Lancaster Sound. The style is succinct and clear and the presentation well-designed. Masses of data are shown in figures and tables, allowing the narrative to flow easily. Methods and potential biases are lucidly explained.

An introductory chapter and numerous good colour photographs set the scene well. Besides the usual aspects of breeding biology, particular attention is paid to patterns of colony attendance and to nutrition. Finally, the study is reviewed from a broader perspective.

This work is an outstanding example of sound descriptive biology, the necessary bedrock on which the theorising that has attracted many of the better minds of biology in recent years must be based. Those responsible for cutting the planned research programme from five years to three have done science a great disservice, to which the great service done by the research team should not blind us.

JEREMY J. D. GREENWOOD

**Vanishing Eagles** by Philip Burton, illustrated by Trevor Boyer. Daleguild for Eagle Star Insurance, London, 1982. 140 pp, 30 full page colour plates, many other illustrations, some in colour, and maps, 37 x 48 cm. £9.95.

A selection of 30 of the world's eagles, mostly those which glared from insurance company posters at public transport users, are gathered here with a text on each species. Trevor Boyer's plates vary from splendid to disappointing; designs and styles effective as large posters have sometimes not reduced happily to book plates. His supporting illustrations are splendid, as are Mike Long's habitat drawings. Philip Burton's text is a readable compilation from the main sources, especially Leslie Brown, and is enhanced by his own cosmopolitan field experience. Some statements are questionable; few Golden Eagles are now shot from aircraft in Texas and immigrant birds there may include many from the arctic. The range maps ignore recent findings, such as widely scattered breeding by Verreaux's Eagle in the Middle East. An attractive and reasonably priced book (with too many creased pages in the review copy) for a place between the coffee table and the library shelf. The eagles are indeed vanishing and books like this may help to bring the message home but they prompt the thought that we spend too much on books and too little on action.

DOUGLAS WEIR

**The Spur Book of Countryside Conservation** by Kev Reynolds. Spurbooks, Edinburgh 1982. 64 pages; 13 plain illustrations; 18 x 12 cm. £1.25 (soft back).

A small book inadequately tackling a big subject. It attempts to fire the emotions and stimulate active involvement. Its outline of the current major problems and their histories is superficial and lacking in hard facts. It concentrates on practical habitat management and the work of the BTCV, which will be useful to the very keen, but fails to point out many of the obvious ways in which everyone can contribute. The legislation is dismissed in less than a page without mention of birds or habitats, the coverage of the roles of the statutory and voluntary bodies is inadequate and the list of conservation societies in the appendix is incomplete and out of date.

PETE ELLIS

**Thorburn's Landscape—The Major Natural History Paintings** by John Southern; Elm Tree Books, London; 120 pp, 52 colour and 12 plain plates; £12.50.

In this book John Southern, curator of the Thorburn Museum at Liskeard, presents fifty of the larger and less familiar bird and animal-inhabited landscapes of this popular Master. These range from the amber snows of Gaik to the Surrey woods and seashore, and have such subtlety of background that one could wish the departure of an over-sharp

pheasant—but would Thorburn's sporting patrons have appreciated them minus quarry?

The most natural composition is the youthful Mallard family. For the rest, high drama is never far away.

Mr Southern, who contributes an excellent essay on the artist, also describes the paintings in prose which matches the Victorian spirit of the pictures but serves to distance Thorburn from today's experience of nature.

Despite this the book is welcome, and though the plates occasionally suffer from a red bias, and an 8-inch picture is shown the same size as one 4-foot long, it is very good value.

JOHN BUSBY

**The Life of Birds** by J. C. Welty; Holt-Saunders, Eastbourne, 1982; 754 pages; many plain photos and diagrams; £19.95.

This revision of Professor Welty's well-known book is to be welcomed. It is written at a level suitable for the beginner in ornithology lacking formal biological training. As well as the anatomy and physiology of birds, it covers their behaviour, life-histories, ecology, and evolution. Particular attention is paid to flight and migration, in which birds are, of course, specialists. The only major areas not covered by the book are embryology and genetics.

Apart from a few American colloquialisms and the occasionally unnecessary use of technical terms, this book is well written. The design and presentation are good.

Unfortunately, while the book presents an array of facts in a well-organised fashion, it does not clearly present many of the broad principles underlying these facts. Since facts are always easier to assimilate when supported on a framework of principles, and since it is the formulation of explanatory principles that distinguishes science from stamp-collecting, this is a serious weakness. The chapter on evolution, the greatest of all biological principles, is the weakest part of the book.

In summary, this book is a useful source of facts about birds but does little to promote a full understanding of ornithological science.

JEREMY J. D. GREENWOOD

**Swallows** by Peter Tate; Witherby, London, 1981; 96 pages; drawings (by Alan Harris); £5.95.

Of its main three sections the first, *Breeding and Behaviour*, gathers together, in a non-scientific format, information on population size, nest building, incubation, feeding, brooding and growth, and highlights some of the as yet unanswered questions on mating, incubation and voice. The *Migration* section gives a succinct account and incorporates comment upon theories of passage, wintering and navigational techniques. The final section, *Legend and Literature*, presents an enjoyable collection of swallow-lore.

The book is no monograph. It is "intended for all who see and admire swallows". My disappointment was in its lack of a key within the text to the main sources listed. For many, however, it will make easy and enjoyable reading, while the illustrations by Alan Harris capture twenty-one episodes of this beautiful bird's life-style.

D. MCGINN

**Birds in Medieval Manuscripts** by Brunsdon Yapp; The British Library, London, 1981; 190 pages, 60 black and white figures, 48 colour plates; £9.50.

This beautifully illustrated book is the happy consequence of a retired zoologist's interest in medieval illustration. The manuscripts consulted, nearly 500 of them, are predominantly English, but Dr Yapp saw enough French material to become convinced that for accuracy of ornithological observation the English were often superior. The birds most often illustrated are cranes, herons, storks, geese, Peacocks, domestic fowl, doves, eagles, hawks and a variety of passerines ranging from Goldfinches and Great Tits to Hooded Crows and Wrens. Much of the best must have been drawn from life rather than (as art historians have often assumed) just copied from earlier models: the author says of the birds in the Alphonso Psalter (pre-1284) 'I do not think such good pictures were drawn again until the nineteenth century'. Altogether, a must for those interested in the history of bird illustration.

T. C. SMOUT

**Seasonal Movements of Summer Migrants** by Nick Riddiford and Peter Hindley. B.T.O. Guide 18; 84 pages; £1.75.

Compiled wholly from the records of nine selected Bird Observatories around Britain, this guide examines 39 summer migrants, mainly using data covering the years 1974-78 inclusive. The guide provides information on the timing of summering species entering and leaving Britain, presented in the form of histograms, and enables the major periods of visible migration to be checked at a glance. A page of text is devoted to each set of nine histograms; this describes the patterns of migration for each species, and includes paragraphs summarising breeding range and British status and winter range. Scottish records are solely from Fair Isle; sadly, Isle of May data were not included, although readily available in past reports for that Observatory. However it is reassuring to know that summer starts on 1 March and ends on 30 November!

B. ZONFRILLO

**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.

*The feeding distribution of birds on sea lochs in the Clyde sea area in 1979.* (68 pp). J. B. Halliday, Dept. of Biology, Paisley College of Technology.

*St Abb's Head seabird sample counts in 1981—4th year results.* (26 pp). C. E. Hellowell, C. O. Badenoch & S. R. Warman 1981. Nature Conservancy Council.

*Perthshire Peregrines in 1981.* (4 pp). P. K. Stirling-Aird 1982. Old Kippenross, Dunblane, Perthshire FK15 0LQ.

*Forth Islands bird counts in 1981.* R. W. J. Smith 1982. *Edin. Nat. Hist. Soc. Jnl.* for 1981: 16-17.

*Young Cuckoo's interesting food [toads and frogs].* D. McDougall 1982. *Edinburgh Nat. Hist. Soc. Jnl.* for 1981: 26-27.



- Seabird movement at coastal sites around Great Britain and Ireland in 1978 to 1980.* (78 pp). P. H. Jones & M. L. Tasker 1982. Nature Conservancy Council & Seabird Group. £2 post free from authors, 17 Rubislaw Terrace, Aberdeen AB1 1XE.
- Colonsay, Jura and the Garvellachs: 1981 expedition results.* (14 pp). S. Bond *et al.* (no date). Brathay Exploration Group, Brathay Centre for Exploration and Field Studies, Old Brathay, Ambleside, Cumbria.
- Ayrshire Bird Report for 1981.* (32 pp). A. Hogg (ed) 1982. £1.25 post free from SOC Bird Bookshop.
- Preliminary estimates of the number of Waders wintering in the Outer Hebrides. N. E. Buxton 1982. *Wader Study Group Bull.* 35: 6-7.
- Lothian Bird Report for 1980.* (45 pp). G. F. Bell *et al.* 1982. £1.50 inc. postage from 434 Lanark Rd, Edinburgh EH13 0NJ.
- Midlothian, West Lothian and Forth Islands Bird Report for 1981.* (35 pp). A. W. & L. M. Brown 1982. (Not for distribution).
- Clyde Area Bird Report for 1978-80.* (45 pp). I. P. Gibson (ed) 1982. £1 inc. postage, from Renfrew District Council Museums Service, High St, Paisley, Renfrewshire PA1 2BA.
- Orkney Bird Report for 1981.* (62 pp). C. Booth *et al.* 1982. £1.75 post free from SOC Bird Bookshop.
- Winter occupation of breeding territories and winter diet of Peregrines in South Scotland. R. Mearns 1982. *Ornis Scand.* 13: 79-83.
- Wick High School Bird Report for 1981.* (43 pp). D. Leith (ed). 75p incl. postage from Wick High School, West Banks Ave, Wick, Caithness KW1 5LU.
- The effects of the severe weather in December 1981 and January 1982 on Waders in Britain. N. A. Clark 1982. *Wader Study Group Bull.* 34: 5-7.
- Loch Lomond Bird Report for 1981.* (18 pp). J. Mitchell (Comp.) 1982. Nature Conservancy Council.
- The breeding bird community of Inchmoan, Loch Lomond in 1979-80.* (14 pp). C. M. Waltho 1982. Nature Conservancy Council.
- Wetland birds of the Balmore Haughs and surrounding area [near Glasgow].* (8 pp). B. Zonfrillo 1982. Nature Conservancy Council.
- Notes on the Hen Harrier in the Loch Lomond area. J. Mitchell 1980. *Western Naturalist* 9: 3-8.
- 1981 Census of breeding Waders on the Ring Point Loch Lomond National Nature Reserve. (2 pp). J. Mitchell 1981. Nature Conservancy Council.
- Moult in the Sparrowhawk [in south Scotland]. I. Newton & M. Marquiss 1982. *Ardea* 70: 163-172.
- Breeding behaviour, productivity and survival of colonial and non-colonial Shelducks [in the Firth of Forth]. M. W. Plenkowski & P. R. Evans 1982. *Ornis Scand.* 13: 101-116.
- Report on the breeding success of the Peregrine in the Loch Lomond/Trosachs area of Scotland in 1981.* (7 pp). J. Mitchell 1982. Nature Conservancy Council.
- Hebridean Naturalist* no. 6. (58 pp). J. A. Crummy (ed) 1982. Includes 'Birds of the Outer Hebrides in 1981', 'Small Petrel studies on North Rona', etc. £2.25 post free from SOC Bird Bookshop.
- Forth Naturalist and Historian* vol. 6. (130 pp). Univ. Stirling and Central Regional Council, Stirling, 1982. Includes 'Forth area bird report (Clacks, Stirling, SW Perth) for 1980' and 'Nocturnal migration in SW and C Scotland detected by moonwatching'. £2 post free from SOC Bird Bookshop.
- A Report on the wintering and one mortality incident among Whooper Swans (*Cygnus cygnus*) on the River Teviot, Roxburgh. C. O. Badenoch 1982. *History of the Berwickshire Naturalists' Club* 41: 221-226.
- Notes on the breeding of the Buzzard in Kintyre. E. J. Maguire 1979. *Western Naturalist* 8: 3-13.
- The breeding birds of the Clyde area—Supplementary notes. J. A. Gibson 1979. *Western Naturalist* 8: 27-45.

Autumn Waders in the Outer Hebrides. R. W. Summers & N. E. Buxton 1979. *Western Naturalist* 8: 75-82.

Caerlaverock Bird Report for 1981. (13 pp). M. Wright 1982. Nature Conservancy Council.

## Notices

### BRANCH SECRETARY

New Galloway Will members please note that, following the very sad death of the secretary, Dr Grace Fleming, in September, the new secretary is Miss J. E. Howie, 60 Main Street, St John's Town of Dalry, Kirkcudbrightshire.

### LOCAL RECORDERS

Please note the following change in the list published in the autumn journal:

Shetland (except Fair Isle) D. Coutts, 'Da Knowe', Twageos Road, Lerwick.

### WILDFOWL COUNTS

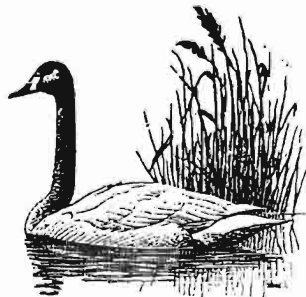
Please note the following omission from the list published in the autumn journal, and change of address for the Argyllshire organiser:

Dunbartonshire, Lanarkshire, Renfrewshire R. A. Jeffrey, 1a High Cal-side, Paisley, Renfrewshire.

Argyllshire and Inner Hebrides (South) S. Newton, 11 Jameson Place, Leith, Edinburgh EH6 8NZ.

### 1981 SCOTTISH BIRD REPORT

Publication of the 1981 SBR has unfortunately been delayed and it will not now be available until early 1983. It will be priced at £1.25 (post free) to members and £1.75 (post free) to non-members.



WHOOPER SWAN Donald Watson

### ABERDEEN BRANCH - EXCURSIONS

The following excursions are planned. For further details please contact the Outings Secretary, L. D. Steele, 15 Gladstone Place, Queens Cross, Aberdeen AB1 6UX (tel. 0224 322 532).

**Sunday 12 December 1982** GLEN DYE. Meet Feughside Hotel car park 10 a.m.

**Sunday 23 January 1983** Rivers DON, DEE and GIRDLENESS. Meet Bridge of Don 10 a.m.

**Sunday 20 February** MONTROSE BASIN.

**Sunday 20 March** GLENTANAR and DINNET.

**April** GLEN GAIRN and INSH MARSHES.

**May** ISLE OF MAY.

**June** ANGUS GLEN.

### ABERDEEN BRANCH LIBRARY

Aberdeen branch has a library which has been inactive for a number of years, and it is proposed to reactivate it. Unfortunately a number of books are missing which the borrower has forgotten to return; some of these would be of great interest to members, such as Baxter & Rintoul's *The Birds of Scotland*. Anyone who has any Aberdeen branch book in their possession is asked to return it direct to Alistair Duncan, 12 Cairncry Avenue, Aberdeen (0224 43717), or pass it through the SOC office in Edinburgh if that is easier. The name of the borrower will not be divulged, or the book can be posted anonymously!

**BTO Mute Swan Census 1983** The BTO is undertaking a Mute Swan Census in April/May 1983 and the intention is to obtain complete coverage of Britain. The SOC has agreed to co-operate in organising the census in Scotland and the Scottish organisers will be A. W. and L. M. Brown, 7 Trelawney Terrace, Penicuik, Midlothian, EH26 0NB. Further details including a list of local organisers will appear in the Spring 1983 issue of the Journal.

**East Scotland Mute Swan Study** Mute Swans have been colour-ringed in East Scotland this year as part of a three year project to study the breeding success of local pairs, the dispersal of cygnets and the movement of swans to and from moulting sites. White rings with black numbers (read from the foot upwards) have been used and reports of sightings, including date, location, grid reference and ring number should be forwarded to Dr C. J. Spray, Culterty Field Station, Newburgh, Ellon, Aberdeenshire, AB4 0AA.

**British Birds** The form giving details of the reduced subscription to SOC members was not ready for posting with the autumn journal; it is enclosed with this issue.

**Natural History Collections Research** The Council for Museums and Galleries in Scotland has set up a Collections Research Unit to compile and publish a register of botanical, zoological and geological collections in Scotland, as part of a scheme to register the whereabouts of natural history collections throughout Britain. This will facilitate the study of Scotland's natural history by providing researchers and naturalists with a means of rapidly locating collections relevant to their studies. Information is already being collected from museums, universities, colleges and schools, but it is hoped to include details of collections held by private individuals or societies.

A 'collection' can be anything from a few rocks to a herd of elephants, and if there are accompanying records or notes all the better. Older collections often lie dormant in attics, their true scientific value unrecognised by their owners. Unless details of such collections are made available to other naturalists, valuable collections are effectively lost to science. If you own or know of any such collections and you think their existence should be recorded, please contact us at the address below. Details of the location and ownership of collections can be withheld from the Catalogue on request to preserve the confidentiality of valuable private collections.

Please write to: The Council for Museums and Galleries in Scotland (NSCRU), 20/22 Torphichen Street, Edinburgh EH3 8JB.

**Colour marked Herons** A number of nestling Herons in Fife and East Perthshire have been fitted with wing tags of various colours, each tag in addition bearing an individual code number. In Aberdeenshire nestling herons have been colour ringed above the knee joint. Anyone seeing a marked bird please take note of the colours (and if possible the numbers) on both wings and inform either: Mick Marquiss, Institute of Terrestrial Ecology, Bush Estate, Penicuik, Midlothian. EH26 0QB (telephone outside working hours: Inverkeithing 412712) or Keith Brockie, Gardener's Cottage, Millhill House, Inchtute, Perthshire (telephone Inchtute 774).

## The Scottish Ornithologists' Club

### REPORT OF COUNCIL

#### For Year to 30 June 1982

**General** In common with many similar organisations, the club found the past year particularly difficult with recession affecting membership and sales. For only the second time in the past 15 years bookshop sales decreased and resulted in a slightly lower surplus than last year; the previous decrease was in 1970. Also, while there was an increase in total membership, it was very small compared with the previous year and indicates a need for vigorous efforts to recruit members in 1982/83 following the increase in subscription rates.

**Membership** On 30 June 1982 the club had 2936 members, a net increase of 22. 327 new members joined during the year, 80 less than last year, of whom 43 were juniors and 18 children nominated for family membership; 16 existing members took out life membership. 362 paid the reduced rate for pensioners. In the table family members are counted as two people; nominated children pay no subscription.

Year to 30 June	1977	1978	1979	1980	1981	1982
Honorary	1	1	1	5	6	5
Life	29	49	51	58	62	84
Ordinary	2536	2572	2357	2387	2555	2570
Junior	282	271	211	208	211	195
Nominated children	98	87	82	74	80	82
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	2946	2980	2702	2732	2914	2936
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	+128	+34	-278	+30	+182	+22

**Covenants** The revenue from covenanted subscriptions continues to increase in spite of the reduction in the number of covenants, which fell from 776 to 717 covering 854 members. The decrease in covenants is due to the number which completed their seven year term and were not renewed until the increase in subscription took place; this will be reflected in the total increase next year. The value to the club of this source of income is considerable. Council is extremely grateful to those who do help in this way, and encourages those who do not have a covenant to sign one which, under the new regulations, can now last for only four years.

**Deaths** Council records with deep regret the deaths during the year of Alastair Anderson, and William Brotherston an honorary member whose obituary appeared in *Scottish Birds* 11: 265.

**Finance** Two items in particular contributed to the very large deficit: one reduction by £148 in the bookshop surplus and a large increase in the cost of running the Scottish Centre. The extent of the former could not be forecast, but it was appreciated that when the two basement rooms at 21 Regent Terrace were taken into use by the club, there would be extra cost in rates, heating and, this year, furnishing and new equipment for the rooms. Other items have shown a commendable reduction in cost or a welcome increase in income, though the sale of *Scottish Birds* suffered from the same effect of the recession as the bookshop. The deficit will hopefully be stemmed by the increase in subscription rates, but careful budgeting, coupled with good marketing to increase bookshop sales and efforts to increase membership at all branches, will be needed. On the recommendation of our Auditors, Council agreed to transfer annually 10% of the Life Membership Fund to subscription income.

**George Waterston Memorial Fund** Donations, accrued interest, and a very successful series of film shows at seven branches, brought the total in this fund to just over £5000. Details of the film shows are given in *Scottish Birds* 12: 95. Council records its thanks to Mr Chris Mylne for presenting the enjoyable and successful evenings; many members at the branches concerned are also thanked for their help in organising the events. After consulting members through their branch representatives, council agreed to donate two hides in memory of George Waterston; one to the Royal Society for the Protection of Birds and one to the Scottish Wildlife Trust at their reserves at Vane Farm, Loch Leven, Kinross, and the Montrose Basin, Angus, respectively. Both were due to be opened in the autumn. A decision had still to be made on the use of the remaining funds.

**Branches** In spite of the very severe weather conditions during the winter, the majority of evening lectures took place as scheduled though numbers attending were at times understandably reduced. Council thanks all the speakers who gave their time so generously to lecture at the evening meetings, and pays a special tribute to those who braved terrible conditions during the worst of the winter and arrived on time to give their talks. Only six of the 75 lectures had to be called off and two of these were rescheduled for a later date; a truly remarkable demonstration of dedication for which members and council alike are extremely grateful.

Summer and winter excursions were once again arranged by branches for the enjoyment of all members, and the education of those new to birdwatching. This is an important aspect of branch activities and is undoubtedly a valuable way of encouraging and retaining new members.

There has been a weekend excursion to the Soiway, based on the County Hotel, Dumfries, each year since 1960, and it was with considerable regret that the weekend had to be cancelled in 1982. The decision of the owner to close the Hotel at the end of January came too late for suitable alternative arrangements to be made, but it is hoped to find somewhere else to revive this enjoyable weekend in future years.

**Annual conference** The 34th annual conference and 45th annual general meeting were held in the Marine Hotel, North Berwick. The hotel was once more filled to capacity and the warm welcome and friendliness of its staff ensured that the weekend was enjoyed by all who attended. An account appeared in *Scottish Birds* 12: 29.

**Scottish Birds and the Scottish Bird Report** Four issues of the journal with 152 pages of plates and text, and the index to volume 11, were published during the year, and the 1980 SBR was published in time for the conference. Council takes this opportunity to thank all those who contributed to the journal and who sent records to local recorders for the annual bird report; in particular it thanks all those responsible for their production including the recorders, referees and editors.

**Research and fieldwork** Club members have given support to a number of research projects during the past year. Outstanding among these has been the wader breeding survey which is being organised in Scotland by Hector Galbraith and Bob Furness. Other surveys include the Wildfowl Trust's goose and wildfowl counts, the RSPB beached bird survey, the BTO common bird census and nest record scheme, and the start of its very important Winter Atlas. The latter, which is to cover three years, started in what was probably the worst winter in memory and it will be of considerable interest to observe any changes which may occur during the next two winters.

**Conservation** The outcome of the public enquiry into the development of ski-ing facilities in the Cairngorms, reported last year, is still awaited, and also a decision about the route for power lines from Torness power station in East Lothian. A letter was sent to the Department of the Environment to express the concern of the club and its members that the new Wildlife Inspector, appointed to police the laws in the 1982 Wildlife and Countryside Act, should be linked to the British Field Sports Society for administrative purposes. It was considered that naturalists would be more likely to give full support to the Inspector if he was appointed directly by the Nature Conservancy Council or worked with the RSPB. an official reply is still awaited.

**Endowment fund** It was reported last year that the fund was to receive a one-sixth share of the Gunn estate. In addition to the £2500 received last year, a further £5650 has been received and a small balance is still to come when the estate is finally wound up. Interest now accruing to this fund enables council to award more and larger grants than formerly, and from the 17 applications it awarded 14 totalling £1915; subsequently one could not be taken up and another has been held over until next year. The following grants were made totalling £1665: £50 to Chris Booth towards costs of seabird surveys around Orkney; £50 to Andrew Ramsay and Bob Hogarth to study Tysties and Storm Petrels on Auskerry, Orkney; £50 to David Budworth for a seabird survey on Sule Skerry; £100 to Bob Swann and Andrew Ramsay towards costs of their long term seabird studies on Canna; £100 to Keith Brockie and Mike Nicholl for their continuing studies of breeding Herons on Tayside; £100 to Graham

Rebecca for Merlin studies in the Grampian region; £100 to the Grampian and Tay Ringing Groups towards their costs studying Purple Sandpipers in Norway; £150 to Chris Spray for his work on Mute Swan movements in east Scotland; £150 to Bob Furness monitoring seabird populations on Foula; £200 to Ron Summers to carry out wader population studies in Orkney; £215 to Hector Galbraith towards the costs of organising the Wader Breeding Survey in Scotland; and £400 to the Isle of May Bird Observatory towards the cost of replacing the Bain Trap.

Short reports from all recipients of a grant from the fund are now published in the journal; those for 1981 appeared in *Scottish Birds* 12: 61.

**Waterston Library** In addition to the £250 allocation from general funds, some further money obtained from the sale of duplicate books was spent on the purchase of books and journals and on the binding of journals. Almost 100 journals are received on exchange making an extremely useful addition to the reference library.

**Bookshop** Sales just exceeded £89,000. Although this was less than last year the profit on sales showed a marginal increase which was very creditable in these difficult times. Many customers come to the bookshop when visiting Edinburgh, and it is a particular pleasure to meet those from overseas. Council is most grateful to the BTO for its invitation to take books to its annual conference in December at the Swanwick Conference Centre.

**Scottish Centre** Although bookshop sales were marginally less than last year, the amount of stock held at 21 Regent Terrace increased. This, combined with an increase in staff last year, meant that more space was needed and the basement rooms, formerly leased to other organisations, were taken back into use in July 1981. Members visiting the Centre will have noticed changes in staff locations which took place in the autumn. Many visiting birdwatchers were welcomed throughout the year, and postal enquiries answered. The council and its committees continued to meet in the building, and it has been used for informal meetings organised by the Edinburgh branch during the winter. These have become increasingly popular. Fair Isle Bird Observatory Trust, and the Isle of May Bird Observatory and Field Station Committee, both held their meetings in the Centre during the year.

**Club representation** Continued service on two committees by three club members is recorded with gratitude. Frank Hamilton and Dr Derek Langslow serve on the British Section of the International Council for Bird Preservation, and Bede Pounder is a member of the Duck Working Group of the International Wildfowl Research Bureau.

**Staff** No new member joined the staff but Mr David Bates left the club's employment during May. His work as editor of the journal is being carried out by the editorial committee under its chairman, Miss Valerie Thom, until a new editor is appointed. Council is extremely grateful to Miss Thom and all the committee members for their help. It is hoped to appoint a bookshop manager/assistant secretary in the autumn.

**Acknowledgments** Many members contribute to the organisation of branches and serve on committees of the club, as well as those who make arrangements for meetings and excursions, and Council takes this opportunity to thank them all for their work during the year. In addition Council records its gratitude to all those who have spent time compiling and editing records for *Scottish Birds* and the annual bird report. The

council would like to acknowledge the efforts of all those members of staff who have worked loyally on the club's behalf. The members of the council were heartened by the secretary's return to good health and look forward to his continued well being.

For the Council,  
IVAN T. DRAPER, President.

### Revenue account for the year ended 30 June 1982

INCOME	Year to 30/6/82	Year to 30/6/81
Subscriptions, including transfer from		
Life Membership Fund ... ..	£12963	£12075
Income tax on covenanted subscriptions ... ..	1750	1730
Dividends and interest (gross) ... ..	793	942
Surplus on bookshop (sales £89059) ... ..	22036	22184
Advertising revenue—"Scottish Birds" ... ..	1501	1284
Sale of "Scottish Birds" ... ..	877	1054
Sundry sales less purchases (ties, etc.) ... ..	50	77
Donations ... ..	150	127
Raffle ... ..	667	595
V.A.T. recovered ... ..	—	89
	<u>£40787</u>	<u>£40157</u>
 <b>EXPENDITURE</b>		
Branch expenses including lectures ... ..	£1628	£1699
Travel expenses for council members and delegates to conferences ... ..	896	1026
Secretarial and editorial expenses ... ..	27694	23751
Office expenses ... ..	3071	2598
Scottish Centre for Ornithology and Bird Protection : Club's share of running expenses ... ..	3931	2273
Library books and binding ... ..	251	506
Publishing "Scottish Birds" ... ..	6226	6185
Publishing Scottish Bird Report ... ..	760	1256
Expenses in production of 1980 SBR ... ..	£117	
Less contribution from "Scottish Birds" Appeal Fund ... ..	<u>£117</u>	
Reprinting back numbers of "Scottish Birds" ... ..	—	801
Loss on conference ... ..	117	134
Subscriptions to other Societies ... ..	85	94
V.A.T. not reclaimable ... ..	68	69
	<u>44727</u>	<u>40392</u>
Excess of Expenditure over Income ... ..	3940	235
	<u>£40787</u>	<u>£40157</u>



## Balance Sheet as at 30 June 1982

	Year to 30/6/82	Year to 30/6/81
<b>FUNDS OF THE CLUB</b>		
Accumulated surplus from previous year ...	£11107	£11342
Subtract deficit for year ... ..	3940	235
	<u>7167</u>	<u>11107</u>
Life membership fund ... ..	6019	4363
"Scottish Birds" Appeal Fund ... ..	1244	1415
Library fund ... ..	685	699
George Waterston Memorial fund ... ..	5052	3077
	<u>£20167</u>	<u>£20661</u>
<b>REPRESENTED BY</b>		
Cash in hand and at bank ... ..	£1464	£798
Cash in Dunfermline Building Society ... ..	5861	6640
Bookshop stock ... ..	21167	18294
Tie, badge, car sticker & notelet stock ... ..	545	683
Debts due to club ... ..	3891	4560
Due from Endowment fund ... ..	—	56
Investments at cost as below ... ..	2506	2506
	<u>35434</u>	<u>33537</u>
<i>Less</i>		
Subscriptions paid in advance ... ..	£109	£25
Debts due by club ... ..	14128	12851
Due to Endowment fund ... ..	1030	—
	<u>15267</u>	<u>12876</u>
<b>TOTAL NET ASSETS</b> ... ..	<u>£20167</u>	<u>£20661</u>

## Investments as at 30 June 1982

	Market value	At cost	At cost
Safeguard Industrial Investments Ltd.—			
875 Ord. shares of 25p each ... ..	£936	£508	£508
£2100—10% Treasury Stock 1983 ... ..	2053	1998	1998
	<u>£2989</u>	<u>£2506</u>	<u>£2506</u>

### Endowment Fund

(The free income of which is available for the advancement  
of ornithology)

#### Revenue account for the year ended 30 June 1982

	30/6/82	30/6/81
<b>INCOME</b>		
Interest and dividends received (gross) ... ..	£1537	£1011
<b>EXPENDITURE</b>		
Grants as detailed in Report of Council ... ..	1665	795
Excess of expenditure for year ... ..	<u>£128</u>	<u>(£216)</u>

#### Balance Sheet as at 30 June 1982

Endowment fund as at 30 June 1981 ... ..	£6061	£3561
Add Donations ... ..	5650	2500
	<u>11711</u>	<u>6061</u>
Accumulated revenue as at 30 June 1981 ... ..	2692	2243
Excess of income for year ... ..	—	216
Grants refunded ... ..	—	240
Gain on redeemed stock ... ..	—	81
General No. 2 account : donations and interest	10055	2556
	<u>24458</u>	<u>11397</u>
Less Excess of expenditure for year ... ..	128	—
Decrease in cost value of investments ... ..	—	88
	<u>£24330</u>	<u>£11309</u>

#### Made up of :

Investments at cost as below ... ..	£3063	£3063
Dunfermline Building Society :		
Capital account ... ..	6907	2906
General No. 1 account ... ..	3677	2940
General No. 2 account ... ..	9853	2556
Due by Club's general funds ... ..	1030	—
	<u>24530</u>	<u>11465</u>
Less Grant allocated but not yet paid ... ..	200	100
Due to Club's general funds ... ..	—	56
	<u>£24330</u>	<u>£11309</u>

**Investments as at 30 June 1982**

	Market value	At cost	At cost
£1220—9¼% Treasury Stock 1983 ...	£1186	£1140	£1140
£352 British Printing Corporation—7¼% Non Cumulative Preference shares £1	95	353	353
500 St Andrew Trust Ordinary 25p ...	800	570	570
1952 M & G Equity Investment for Charities	3328	1000	1000
	<u>£5283</u>	<u>£3063</u>	<u>£3063</u>

EDINBURGH, 21st September 1982.—I have audited the foregoing revenue accounts for the year to 30 June 1982, and the balance sheets as at that date. I have accepted as correct subscriptions and other receipts shown as received in the books and the value placed on the bookshop stock. I certify that in my opinion the foregoing accounts are correctly stated and sufficiently vouched.

(Signed) ROBERT CAVEN,  
Chartered Accountant.

**COUNCIL AND OFFICIALS OF THE CLUB FOR SESSION 46**

**Hon. Presidents** Sir Charles G. Connell WS, LL D, FRSE; Sir Arthur B. Duncan; W. J. Eggeling, CBE, BSc, FRSE; Professor V. C. Wynne-Edwards CBE, LL D, MA, D Sc, D Univ, FRS, FRSC, FRSE, FI Biol.

**President** Dr Ivan T. Draper.

**Vice-President** John M. S. Arnott.

**Law Agent** D. G. Andrew WS.

**Council** (elected at AGM) R. A. Broad, A. W. Brown, Dr D. M. Brvant, D. L. Clugston, R. W. Forrester, Mrs H. Halliday, R. H. Hogg, M. B. Ross, B. J. Stewart, Dr I. R. Taylor. **Young members** (elected by Council) L. Steele, A. Williams.

**Branch Representatives** (elected by their Branch) B. J. Stewart (Aberdeen); R. H. Hogg (Avr); M. B. Ross (Borders); R. T. Smith (Dumfries); Dr K. M. Watson (Dundee); P. R. G. Marriott (Edinburgh); Dr J. T. Knowler (Glasgow); R. A. Rroad (Inverness); Mrs H. Halliday (New Galloway); P. K. Kinnear (St Andrews); H. Robb (Stirling).

**STAFF**

**Secretary, Treasurer and Business Editor** Major A. D. Peirse-Duncombe.

**Bookshop Manager/Assistant Secretary** Miss M. R. Doran.

**Membership Secretary** Mrs R. D. Smillie.

**Hon. Treasurer and Librarian** W. G. Harper.

**Bookshop and Clerical** Mrs H. L. Harper, Mrs D. J. Ridley, Miss H. Barul, A. G. MacKay.

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**Aberdeen** Chairman, S. M. D. Alexander; Vice-Chairman, L. Steele; Secretary, D. J. Bain; S. T. Buckland, A. Duncan, J. A. England, Miss M. C. Hartnoll, W. G. D. Hendrickson.

- Ayr** Chairman, D. A. Smith; Vice-Chairman, Dr R. Hissett; Secretary, B. C. Forrester; Committee, J. Burton, Mrs J. Burton, Mrs E. M. Hissett, Major N. A. D. McCance, G. Riddle.
- Borders** Chairman and Secretary, M. B. Ross; Vice-Chairman, A. J. Smith; Committee, A. Buckham, T. D. Dobson, R. D. Murray, Mrs E. Ross.
- Dumfries** Chairman, Dr N. E. Armstrong; Vice-Chairman, Dr E. C. Felloses; Secretary, J. W. Barclay; Committee, Miss A. MacDonald, T. Shannan, R. T. Smith, R. M. Wright.
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- Thurso** Chairman, Mrs P. M. Collett; Secretary, S. Laybourne.
- Wigtown** Chairman, Dr P. G. Hopkins; Secretary, G. Sheppard; Committee, J. H. Hollands, D. L. Irving, D. J. Mould, D. J. Rennie, G. Shaw.

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- Management** Dr I. T. Draper (Chairman), D. G. Andrew, J. M. S. Arnott, D. L. Clugston, B. J. Stewart.
- Library** D. L. Clugston (Chairman), Ritchie Seath (Hon. Librarian), Dr J. J. D. Greenwood, P. W. G. Marriott, Dr I. D. Pennie, Mrs M. I. Waterston.
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- Research** Dr I. R. Taylor (Chairman), A. W. Colling, R. H. Dennis, H. Galbraith, Dr J. J. D. Greenwood, Dr D. R. Langslow, J. A. Love, M. Marquis.

#### CLUB REPRESENTATION

- British Section, International Council for Bird Preservation** : F. D. Hamilton, Dr D. R. Langslow.
- International Wildfowl Research Bureau, Duck Working Group** : B. Pounder.

#### HONORARY MEMBERS

- Dr John Berry, Maxwell Hamilton, Dr Ian Pennie, Mrs Irene Waterston, Donald Watson.

## Branch News

The New Galloway branch had a happy winter session (1981-82), with an average of 26 members attending. There was a boost to 47 in February when members from Dumfriesshire and Wigtownshire joined the group.

The session began with contributions by local members. Mr Donald Watson gave interesting notes on his report "Birds in Galloway, 1980". Dr and Mrs Halliday, Dr Grace Fleming and Miss Joan Howie showed film slides including alpine swifts, waxwings and ospreys. A Scandinavian osprey had been caught in a net at a local fish farm.

The final meeting was also a members' night, with a quiz and film slides, including some by Dr Neal Rankin and Mr Valery Vasilief.

From further afield came the other speakers, all with excellent slides. They were Gordon Riddle who was keenly interested in kestrels, Don Smith on birds of Canada, Mark Beaman (speaking on an appropriately freezing night) about birding in Siberia and Mongolia, Gordon Yates on Islay geese, John Love describing the re-introduction of sea-eagles to Rhum and one which later proved topical—Henry Robb on the birds of Patagonia and the Falkland Islands.

In November, Mr Chris Mylne showed films at a well-attended public meeting, in aid of the George Waterston Memorial Fund.

Outings were arranged to Caerlaverock Nature Reserve, Loch Ken and in Glenlee Park.

JEAN GIBSON

### THE GEORGE WATERSTON HIDES

During the autumn Mrs Irene Waterston formally opened the hides gifted by the club to the RSPB and the SWT in memory of her husband, the late Dr George Waterston, the costs of these being met from the George Waterston Memorial Fund. On both occasions the opening ceremony fortunately coincided with one of the comparatively few fine days in a period which was notable for its excessive rainfall.

The first of these ceremonies took place at the RSPB's Vane Farm on 17 September 1982 and was combined with the official opening of the new underpass which now gives safe access to the lochside section of the reserve. From the hide visitors can enjoy good views of two new lagoons created near the shore of Loch Leven and also a much closer view of the loch itself than has been possible in the past. A screened approach ensures that disturbance to the birds is minimal. The full cost of the hide, £1,790, was met by the George Waterston Memorial Fund; the underpass—built during road reconstruction—was paid for by the National Coal Board, and the Edinburgh RSPB Members' Group and Union Oil both made substantial contributions towards the cost of the excavation and screening work. This new facility adds greatly to the bird-watching opportunities at Vane and it is particularly appropriate that it was opened in time for the goose season; the first Pinkfeet of the autumn arrived within 24 hours of the opening! The hide is open daily (except Fridays) from 10 am to 5 pm until Christmas, thereafter on Saturdays and Sundays only, 10 am - 4 pm until 1 April, when weekday opening resumes.

The opening of the SWT hide at Montrose Basin LNR took place on 17 October 1982, when the approach route across the fields was awash after recent heavy rain. Situated to the northwest of the Basin, the

hide offers excellent views of an extensive area of mudflats, much frequented by waders and ducks. The materials used in its construction, costing £1,100, were paid for by the George Waterston Memorial Fund; much of the associated work was carried out by voluntary labour. As the screening of the approach route is still incomplete the hide is not yet open to the public on a regular basis; members will be advised when this situation changes. Meantime groups wishing to visit the hide should contact the Reserve Ranger, Chris Eatough, N. Tillysole Cottage, Kinnaid, Brechin (tel (0356 2) 3480).

### AUTUMN HIGHLIGHT - A RUSSIAN INVASION

After a prolonged period of easterly winds and bad weather the weekend of 9th and 10th October produced a trickle of good birds on the east coast but gave no hint of what Monday would bring. From Fair Isle to England thousands of Goldcrests and thrushes and hundreds of Bramblings could be seen at many of the regular migrant-watching sites. Rare birds included several Parrot Crossbills and the Siberian Radde's and Dusky Warblers, Black-throated Thrush and Olive-backed Pipit. But this huge fall will be particularly remembered for the exceptional numbers of Pallas's Warblers. At least 34 of these Siberian gems were seen by lucky birders from Shetland to St Abbs.

PETE ELLIS

### STOP PRESS

**Bookshop Manager/Assistant Secretary** We are very pleased to welcome Miss Maureen Doran to the SOC staff. She took up her duties as Bookshop Manager/Assistant Secretary on 19 October and members who attended the annual conference will have met her during the weekend. Miss Doran graduated from Glasgow University with a Zoology degree in 1974. Since then she has worked for some time as Scientific Officer at the Poultry Research Centre at Lasswade and, latterly, as a research associate in Edinburgh. She hails from Edinburgh and Eyemouth, is a club member, and is well acquainted with the Lothian coast and its birds. We wish Maureen every success in her new post.

**Photographic competition** In this first season only four members submitted entries for the competition—a disappointing response which we hope will be rectified in future years. A start has, however, been made and we are confident that once established the competition will attract entries not only from potential new contributors of photographs to *SB* but also from those who have provided illustrations in the past.

The judging was carried out by a panel of three: Don Smith, Stan da Prato and Valerie Thom. Technical quality, originality and aesthetic appeal were the main criteria applied, while "difficult" shots or species were rated more highly than "sitting ducks". On this basis the first three places were all awarded to the same photographer, Sam Alexander of Aberdeen, for his prints of (1) a displaying cock Capercaillie, (2) a dive-bombing Arctic Skua, and (3) a Golden Plover. We congratulate Sam on his success and thank the other contestants for submitting entries. In addition to the modest monetary prize (see *SB* 12:1) the winner received a suitably engraved shield, which he will hold for one year. This was generously donated by Don Smith, to whom the club is most grateful.

As judging took place later in the year than originally planned it was not possible to include the winning photographs in this number: they will appear in the spring issue. Examples of the work of the three contestants who entered prints were displayed at the conference.

## Scottish Books

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### **EDINBURGH ROYAL CHORAL UNION**

All concerts for the 125th Anniver-  
sary Season will be held in the  
Usher Hall

Saturday, 4th December 1982  
7.30 p.m.

#### **Mass in B Minor (Bach)**

Conductor: Christopher Seaman  
*Concert given with generous support  
from Esso Petroleum Co. Ltd.*

Saturday, 1st January 1983, noon  
**Messiah (Handel)**

Conductor: John McLeod

Saturday, 23rd April 1983  
7.30 p.m.

**Symphony No. 2 in D Major  
(Beethoven)  
A Sea Symphony  
(Vaughan Williams)**

Conductor: Sir Chas. Groves, KBE

Programme incorporating series  
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Lothian Road, Edinburgh EH1 2EA  
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## Kindrogan Field Centre

### *Birdwatching Courses 1983*

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BIRDS—a weekend course. John Edelsten	May 13-15
SCOTTISH BIRDS—hills and lowlands. R. M. Ramage	June 8-15
SCOTTISH BIRDS—a relaxed course. Paul Croft	June 22-29
HOW BIRDS WORK—their biology and natural history. Ron Freethy	July 13-20
HIGHLAND BIRDS—a strenuous course. Ted Green	July 27-Aug 3
BIRDS OF HILL AND GLEN—YOC course. Ian Walker	Aug 3-10
BIRDS OF HILL AND GLEN—YOC course. Jim Flint	Aug 10-17
AUTUMN BIRDS—winter visitors. Nicol Mutch	Oct 14-21

All applications and requests for information on these and other courses should be addressed to The Warden, Kindrogan Field Centre, Enochdhu, Blairgowrie, Perthshire, PH10 7PG. Tel. Strathardle (025 081) 286. S.a.e. appreciated.

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## BIRDS OF THE ARCTIC

**Y**OU have a good chance of seeing some rare Arctic birds if you go on an Erskine Expedition. These mostly last 2½ weeks in June, July and August and are led by experts. Gyr falcon, Sabine's Gull, Ivory Gull, Arctic Redpoll and Snowy Owl were seen last year. And many species of geese, waders and auks are around in large numbers in the relevant habitats. There are camping treks in three wild parts of Greenland and Baffin Island, or stay at hostels in Iceland, South Greenland or Alaska, or cruise in a converted fishing boat in Spitsbergen (80°N), landing each day. You will also see mammals like the Muskoxen, Reindeer and Ermine, and many boreal flowers including the elusive 'spider plant'. £780 up, inclusive from Glasgow.

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## Heron £38.80 NEW 10x40

Wide-angle Binoculars

Quality, power and light weight too – a mere 20 ozs! 367 ft. field of view at 1,000 yards. Slim Zeiss-type body, centre focus, black finish, fully-coated lenses, also suitable for spectacle wearers. Excellent value at £38.80 inc. case, straps and lanyard, plus £1.95 p&p



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Swift Grand Prix 8x40 MK.I (24oz)	-	£64.58
Carl Zeiss 10x40 B DIALYT (24oz)	-	£325.35
Zeiss Jena Notarem 10x40B (24oz)	-	£148.95
Zeiss Jena 8x30 Jenoptem (17oz)	-	£38.94
Zeiss Jena 10x50 Jenoptem (35oz)	-	£68.24
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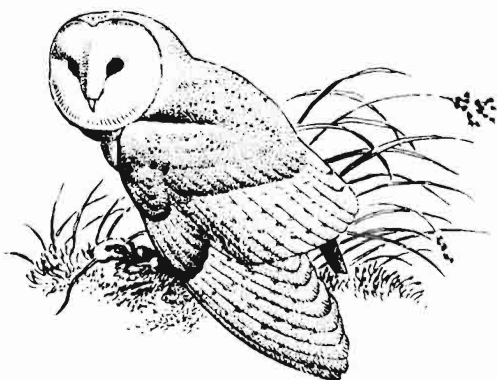
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