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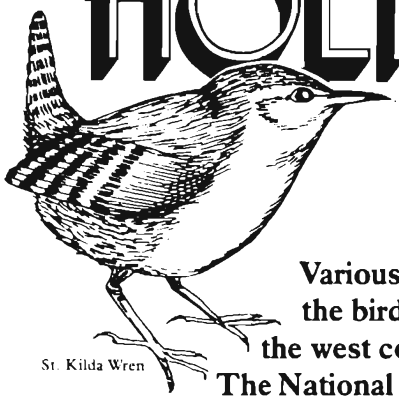
SCOTTISH BIRDS

THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB

Volume 10 No. 5 Spring 1979

HOLIDAYS



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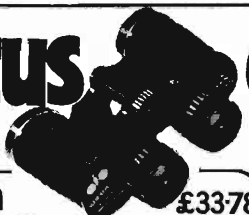

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SPRING, 1959

Editor D. J. Bates

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RSPB

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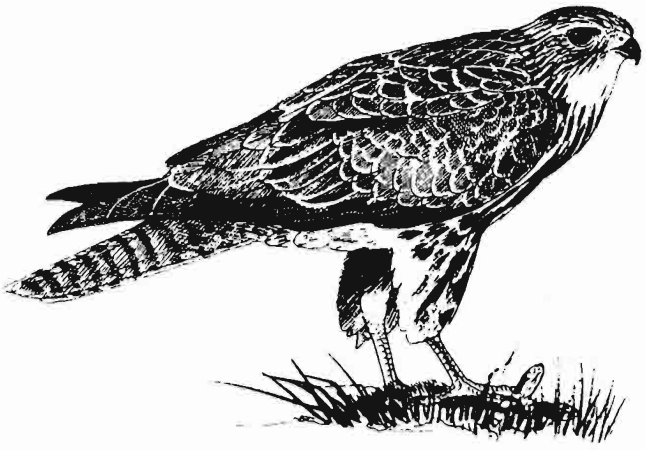

POISONS

ARE A
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OUR BIRDS OF PREY (see editorial)

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2. Distribute leaflets explaining the problem and the law to anyone you think would benefit. Already 20,000 have gone to hill farmers throughout Scotland.
3. Put up posters in rural areas in libraries, post offices and other public places.
4. Send a donation to offset the cost of this operation.

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SCOTTISH BIRDS

THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB

Volume 10 No. 5 **Spring 1979**

Edited by D. J. Bates

Guest Editorial

Birds of prey have been under siege for a very long time. Just when it seemed that persecution was diminishing came the insidious peril of environmental pollution. Now, as that crisis recedes, comes yet another threat.

Poisons in the countryside

The problem Poisoned baits are used in many areas of Scotland to kill birds and mammals that are considered pests. In the form of treated eggs and carcasses they are most commonly found in the upland areas on sheep ground and sporting estates. The use of poisons in the open is illegal because of the obvious dangers to people, livestock and wildlife, but nevertheless this practice is widespread and apparently on the increase.

While in many cases baits are put down for Foxes, crows and gulls, they may often be taken by protected birds. Each year about six Golden Eagles are proved to have died from poison but most bodies are probably never found and we estimate that at least 50 eagles die from poison each year, as well as many hundreds of Buzzards and other protected species. There is little doubt that the distributions of both Golden Eagle and Buzzards are being affected by this mortality, particularly as it is often adult birds that are killed.

What can be done Enforcing the law is almost impossible because of the remote areas involved and the technicalities of Scottish law. An improvement can only come from a change in attitude by the people who are using poisons or who are in a position to influence what goes on in the countryside. Early this year the RSPB started an educational campaign to make the problem widely known and recognised as a serious threat to our important bird of prey populations. This will be a long term effort to keep the subject fresh in people's minds and to collect additional hard evidence which is needed to convince those who will otherwise pretend the problem does not exist.

I would ask every SOC member who comes across evidence

of poisoning to let the RSPB know immediately and, above all, I would urge that whenever possible you speak out and use your influence, however small that may seem, to stop this pernicious practice. It must be our aim to make the use of poisons thoroughly antisocial and quite unacceptable in the 1980s.

JOHN HUNT, *RSPB Scotland*

Colonization of Scotland by northern birds, 1820 - 1977

R. D. MURRAY

In recent years there have been considerable changes in the avifauna of Scotland. Species that previously bred sporadically now breed frequently and some are firmly established. Others have bred for the first time on record and a few of these may also become established. In the last ten years almost every summer has seen new additions to the Scottish breeding list and there have been tantalising observations of exotic species in suitable breeding habitat showing signs of territorial activity.

These changes suggest some kind of colonization trend, yet in spite of comment in the major journals only one paper has examined these remarkable changes (Williamson 1975). Williamson looked at a number of species that have colonized Scotland since 1950 and suggested that their immigration was related to short term climatic change in northern Europe. This paper will examine this suggestion and put forward an alternative explanation as to why many birds, including some not listed by Williamson, are currently expanding their ranges into Scotland.

Colonization trends

Table 1 shows a number of distributional and population level changes that have occurred in Scotland since 1950. All the species mentioned by Williamson are included but with the addition of others. The usual pattern of colonization is of occasional summering, followed by sporadic breeding, and then more or less regular breeding in small numbers, although perhaps not in every year. The list of species that have only been seen summering has been included as they might well herald future breeding records.

Geographically there are four groups of birds in table 1. The first includes the Little Ringed Plover, Little Owl, Green

Table 1. Changes in the Scottish breeding avifauna since 1950

Previously uncommon or sporadic

Now more frequent	Now firmly established
Spotted Crake*	Osprey*
Black-tailed Godwit	Dotterel*
Temminck's Stint	Whimbrel*
Lesser Whitethroat	Marsh Tit
Snow Bunting	Redwing

*Previously declined due to human interference.

Nested for first time on record

Great Northern Diver	Little Owl
Goldeneye	Green Woodpecker
Montagu's Harrier	Wryneck
Little Ringed Plover	Shore Lark
Green Sandpiper	Golden Oriole
Wood Sandpiper	Fieldfare
Spotted Sandpiper	Black Redstart
Ruff	Bluethroat
Glaucous Gull	Reed Warbler
Collared Dove	Red-backed Shrike
Snowy Owl	Lapland Bunting

Seen in summer in suitable breeding habitat

Red-necked Grebe	Pectoral Sandpiper
Garganey	Sanderling
King Eider	Long-tailed Skua
Honey Buzzard	Little Gull
Marsh Harrier	Nuthatch
Gyr Falcon	Great Reed Warbler
Hobby	Marsh Warbler
Grey Plover	Waxwing
Turnstone	Great Grey Shrike
Jack Snipe	Scarlet Rosefinch

Woodpecker, Marsh Tit and Lesser Whitethroat, all species that have spread northwards from England. The Collared Dove can be included in this group as its colonization parallels that of the others, except for its speed and scale, although many doubtless arrived direct from Europe. Most of these species have been spreading northwards for some time and the timing of their colonization of Scotland relates solely to how long they took to spread into northern England. The second group consists of the Spotted and Pectoral Sandpipers, two mainly Nearctic species that are well outside their normal breeding ranges. Their presence in Scotland may be accidental, although some underlying pattern may become apparent. The third group mainly comprises species with a British population extending little beyond central England. These are the Marsh Harrier, Honey Buzzard, Hobby, Wryneck, Golden Oriole, Black Redstart, Reed Warbler and Red-backed Shrike. Although it does not breed in Britain, the Great Reed Warbler

RED-NECKED GREBE *John Busby*

can be included in this category owing to its frequent occurrence in southern England. The cause of these colonizations is not obvious but it is probable that none of our immigrants come from the English populations, several of which are declining. The last group is the remainder of table 1 and these are primarily tundra and boreal forest birds from northern Europe. It is with these last two groups that uncertainty exists as to the underlying causes of the colonizations and it is these birds that were discussed by Williamson.

Bird distributions are never static. Parslow (1973) found that the distributions and population levels of most British birds constantly fluctuated. Some changes were clearly the result of man's activities (deforestation, persecution, drainage, pesticides) but other causes were less obvious. A recurring explanation for some was short term climatic change. Williamson discussed this idea and suggested an explanation for some of the species in table 1. He discerned three important features in the colonization trend: (1) the birds inhabited tundra and boreal forest habitats; (2) the colonization was from Fenno-Scandia; (3) the colonization was confined to the period after 1950; and proposed that the intensifying spring anticyclone over Scandinavia was affecting the migration of birds returning to breed there. This climatic change, which started in the early 1950s, produces stronger easterly winds on the southern flank of the air mass, displacing migrants to the west and northwest to Scotland. Any individuals that found suitable breeding habitat and were in a suitable physiological state remained to breed or summer in Scotland rather than reorientate themselves.

One difficulty with this theory is that while it explains some of the colonizations, it does not explain all the distributional changes involving northern birds. For example, the Great Northern Diver and probably the Black-tailed Godwit immigrated from Iceland, while in cases like the Goldeneye, Fieldfare and many others, it is not necessary to invoke easterly winds to explain their presence in Scotland in the spring. A

more serious difficulty is that such colonizations are not confined to the period after 1950, when the climatic change took place. If the history of such colonizations in Scotland is examined, similar trends are apparent since the first ornithological records were kept. Figure 1 shows that recruitment to the Scottish avifauna has occurred throughout the last 150 years. The most obvious feature of figure 1 is that there is no clear date when the immigrations, as a whole, began. However, if the birds are divided into the two groups mentioned earlier, the northern species and those with populations in southern

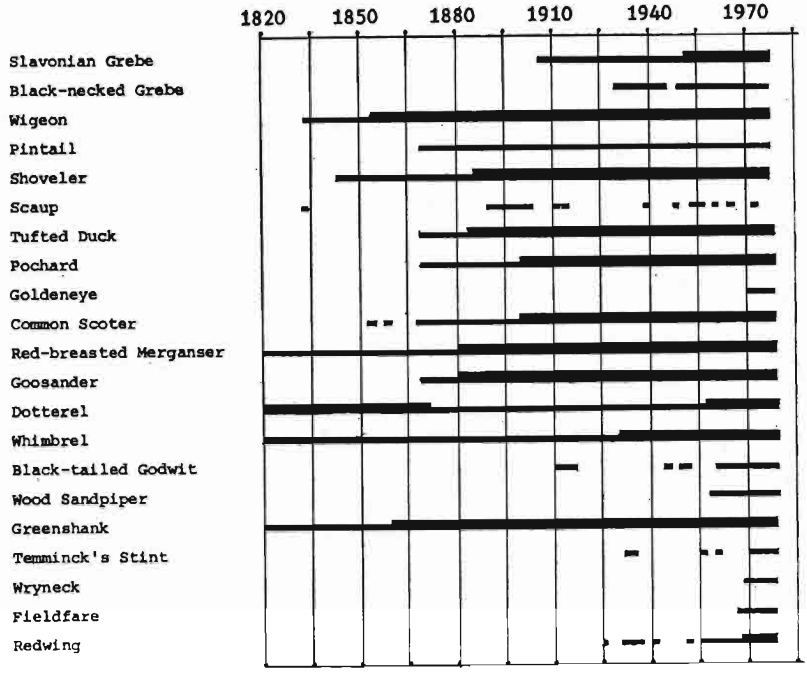

Fig. 1. Breeding in and colonization of Scotland by northern birds, 1820-1977. Sporadic or in small numbers (thin line); in large numbers (thick line).

The following species, probably all from N. Europe, have also nested sporadically between 1820-1977 : Great Northern Diver (1970-71*), Long-tailed Duck (1911*), Velvet Scoter (1945), Whooper Swan (1919-21, 1939, 1947*), Hobby (1887*), Green Sandpiper (1959*), Glaucous Gull (1975-7), Snowy Owl (1967-75), Shore Lark (1973, 1977*), Golden Oriole (1974), Black Redstart (1973), Bluethroat (1968), Reed Warbler (1973), Red-backed Shrike (1977*), Brambling (1920, 1971*), Lapland Bunting (1977).

*Suspected to have bred in other years. Sources : Baxter & Rintoul (1953), Nethersole-Thompson (1966), Scottish Bird Reports 1968-75 (1969-76), Parslow (1973).

England, it is clear that most of the latter arrived after 1950. It appears that while the spring anticyclone over Scandinavia may influence some recent colonists, many seem to be part of a much longer trend.

While Williamson explained *how* some of the recent changes occurred, he did not explain *why* they are occurring. Suitable breeding conditions exist in Scotland for many of these birds, as their successful breeding indicates, so what was preventing them from breeding in the past? This paper proposes that it is not short term climatic change that is responsible, but long term change.

The effect of long term climatic change

If the recent history of western Palaearctic tundra and boreal forest birds is examined it is evident that considerable changes in distributions have taken place for a long time. Tables, like that showing the changes seen in Scotland, could be compiled for all north European countries. Indeed, many of the species in Scotland have also been expanding their breeding ranges elsewhere, particularly in Scandinavia. It seems likely that what is seen in Scotland is part of a series of range expansions occurring on a larger scale and over a longer period that has generally been realized.

The appendix shows that 50-60 species, or 15-16% of the avifauna, have significantly changed in their distributions and population levels in northern Europe over the last 200 years or so. The observations from Scotland fit into a series of changes taking place across northern Europe. In several cases, such as the Tufted Duck, Pochard, Fieldfare and Redwing, colonization of Scotland is part of a westwards spread across northern Europe.

Two trends can be distinguished. The first is southeastwards from Iceland and involves the Great Northern Diver and probably the Icelandic Black-tailed Godwit *islandica*. The second trend is one of westwards range expansion of a much larger number of birds across the whole of northern Europe. The colonization of tundra species has been from northern Russia via Lapland to central Norway and Sweden and possibly later to Scotland. In the boreal forest species the range expansions are on a broader front but they also appear to progress westwards in a stepwise fashion. Typically they are: Russia to Finland and the Baltic coasts; from there to Sweden and northern Germany; from there to Norway, Denmark and the Netherlands; and from there to Britain and Iceland.

It is unlikely that short term climatic change is responsible since there is no climatic change of such a duration that has affected such a large area of western Eurasia. In any case,

many of the short term changes are cyclical and there is no evidence of the range fluctuations typical of short term climatic change. Similarly, genetic and non-climatic environmental changes can be discounted. It is inconceivable that so many species could have undergone genetic changes that all produced similar results, and no non-climatic environmental changes of such magnitude have been apparent.

The cause of this westward expansion that is to be examined here does not require any such changes. Fewer species breed in northern Europe than to the east in northern Asia. Lack (1954) thought that the imbalance in faunal and floral diversity was a result of the greater severity of the ice ages in Europe compared with Siberia and that the westward range expansion of several Siberian and eastern European birds was the redress of this imbalance through immigration from the richer to the poorer area. This theory has several advantages over any other. It satisfies the historical and geographical scope of the immigrations and does not depend on any contemporary environmental changes to have taken place.

Glaciations and bird distribution

Two basic suppositions are made about the nature of the European avifauna. The first is that it is relatively impoverished compared with that of northern Asia, and the second is that this is the result of the last glaciation. Both premises will be examined before the nature and effect of the faunal changes will be assessed.

Stegmann (1932) noted a core area of 40 species in central Siberia where most of the boreal forest birds were present. In western Siberia there are only 30-33, falling to 23-26 west of the Urals and 15-20 in Scandinavia. Only 8-12 of these reach the boreal forests of central Europe. In a similar geographical analysis of the tundra birds, Murray (in prep.) also found an area of maximum species diversity in northern Siberia, around the Taimyr Peninsula and the delta of the River Ob. In this area about 90% of all Eurasian tundra species could be found but the representation decreased to both the east and the west. Only 40% reached Scandinavia and even less, 25%, reached Scotland. Similar regions of maximum diversity were also found in northern Canada and around the Bering Strait. Exactly the same patterns of diversity in both tundra and forest habitats were found by Hulten (1937) for certain groups of plants. For both birds and plants, therefore, a diversity gradient exists between the relatively poor north European area and the richer Siberian region.

To find out whether these gradients are the result of the Pleistocene ice ages it is first necessary to examine the vegetational history of northern Eurasia revealed by pollen analysis

of peat sediments. In general terms cold climatic phases allowed tundra to spread at the expense of the forests, while forests encroached on tundra during warm interglacial periods. During the last glacial maximum, between 23,000 and 15,000 years ago, tundra occupied much of northern Eurasia in an almost unbroken belt from the Atlantic to Pacific Oceans (fig 2a). The only areas of Europe not covered by tundra were the massive ice sheets, and the woodland refuges in the south.

Forest refuges

In Europe small forest remnants were limited to the Mediterranean area. Even in this region their extent was further limited by arid climate so that they were mainly found in the mountain foothills between the subalpine grasslands and the arid scrub below. Beset by hostile climate extinction was undoubtedly widespread amongst the European forest wildlife. Large scale extinction has been recorded in the tree species that made up an important element of the vegetation and a similar degree of extinction occurred amongst the large forest mammals (Frenzel 1973, Kurten 1969). Although little or no data is available about birds, due to the poor preservation of avian fossils, Moreau (1954, 1972) speculated that many of the present European forest species must have had refuges outside Europe to have survived. Small refuges in Asia Minor and the mountains of Central Asia existed under similar conditions to those of Europe. The only area of forest of any size during glacial periods was in central Siberia. As this was extensive it seems likely that its fauna and flora did not suffer the high rate of extinction of those further west.

As the climate began to ameliorate 15,000 years ago the forests reclaimed areas of tundra and steppe-tundra. The spread was not rapid, due to climatic setbacks and poor soil conditions, and it was not until about 7,500-8,000 years ago that a continuous belt of forest existed once more across northern Eurasia. In Europe only one forest forming conifer, the Scots Pine *Pinus sylvestris*, had been able to spread northwards from the Mediterranean refuges. Consequently the forests of northern Europe were either composed of pure stands of Scots Pine or some mixture of pine and the hardier deciduous species such as willow *Salix* or birch *Betula*. In contrast, several species of conifer, *Pinus, Larix, Abies* and *Picea*, were dispersing from the Siberian refuge and the wildlife of these forests was probably not only richer but more stable due to the greater diversity. This situation prevailed until Norway Spruce *Picea abies* colonized northern Europe from Russia. This colonization was slow at first, possibly due to competition from the pine, but the first spruces reached the Moscow area about 8,000 years ago and eastern Finland

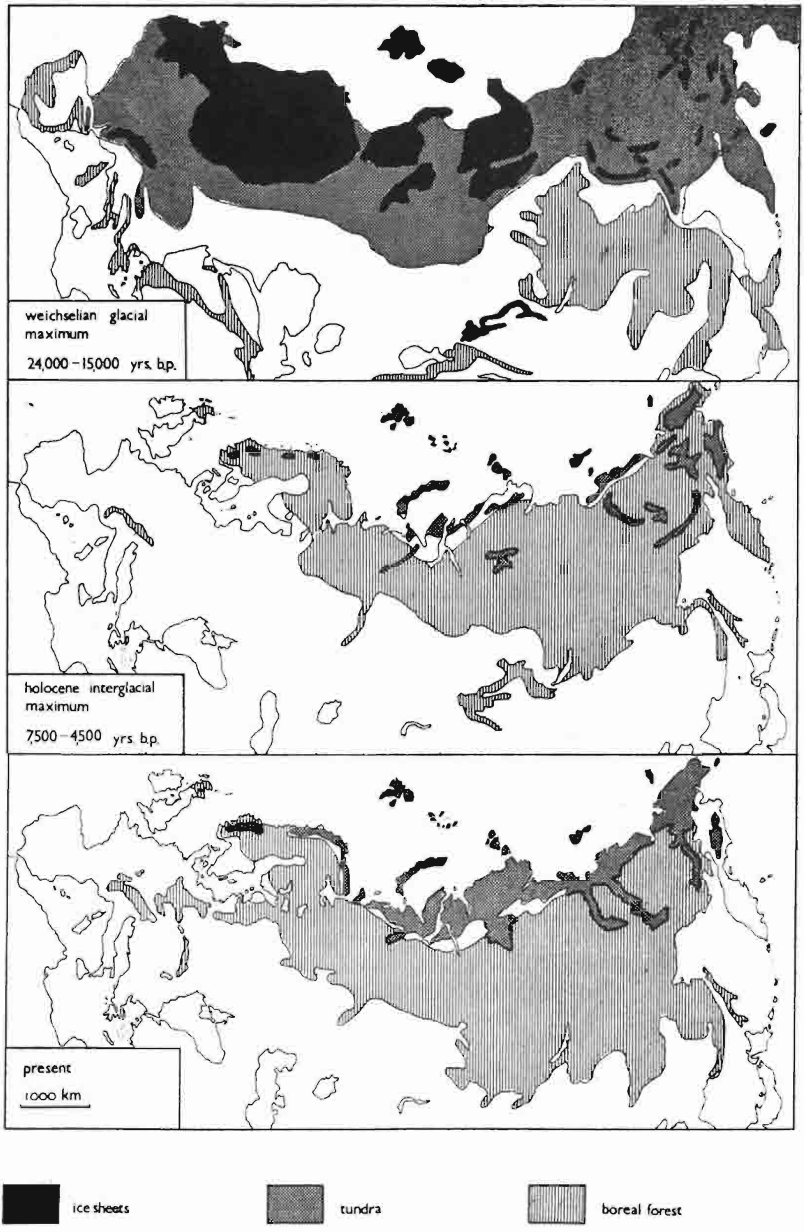

Fig. 2. Distribution of tundra and boreal forest in northern Eurasia during (a) the last glacial maximum, (b) the last interglacial maximum, and (c) the present, after Frenzel (1968).

Note (i) sea level changes, (ii) yrs. b.p.=years before present.

some 3,000 years later. The colonization of Scandinavia and Poland took another 4,000 years (Moe, 1970).

Tundra refuges

Warming climate allowed the boreal forest to encroach on the tundra from about 15,000 years ago until relatively recently, some 2,500 years ago, when there was a distinct climatic deterioration. The so-called climatic optimum, with average temperatures 2°C warmer than at present, lasted from about 7,500 to 4,000 years ago. During this brief interglacial maximum the boreal forests extended northwards to the shores of the Arctic Ocean and confined the tundras to very small refuges, principally around the Taimyr Peninsula in northern Siberia and the islands of the Arctic Ocean. It seems unlikely that any complex tundra communities survived anywhere in northern Europe during this period, with the possible exception of the mountain summits of northern Scandinavia and the northern Urals (fig 2b). The relict nature of the Scottish arctic-alpine flora and the extinction of small mammals like the Lemming *Lemmus lemmus* and Root Vole *Microtus ratticeps* suggest that extinction was common in marginal areas during this period (Darling and Boyd 1964, Connolly and Dahl 1970).

It was not until about 4,500 years ago, when temperatures fell slightly, that the forests began to give way again to the tundra. The revival of the tundra was slow at first but the rate of spread became more rapid after the much sharper climatic deterioration about 2,500 years ago which allowed the tundra and forests to attain their present distributions (fig 2c).

Present day implications

Extinction must have been common in both tundra and boreal forest over the last 25,000 years during the alternating periods of adverse climatic conditions, when the two habitats were confined to their respective refuges. In each case extinction rates must have been higher in those localities of the smallest extent and thus under the greatest stress. It is hardly surprising that in both the tundra and coniferous forest today the areas of greatest diversity are located exactly where the largest climatic refuges were and where the survival rates were probably highest. It also follows that it is from these core areas that the bulk of the flora and fauna dispersed after the periods of hostile conditions. What is presently being seen probably represents the dispersal of birds from these former refuges, just as pollen analysis has shown that the Norway Spruce and many other plants dispersed from their former refuges in the Soviet Union. Indeed, apart from the time element involved, the dispersal of the spruce closely resembles the patterns seen in some of the birds currently invading

northern Europe. The forest birds arriving in northern Europe at present are therefore occupying niches that have been vacant since the forests reasserted themselves 7-8,000 years ago. Similarly the tundra birds coming southeastwards from Iceland and westwards across Arctic Europe are occupying habitats that have only become available in the last 2-3,000 years.

Similar colonization trends have occurred on the eastern flank of both the tundra and forest refuges. In Alaska several species have extended their breeding ranges across the Bering Strait from Siberia. Most of these species, and others that possibly colonized Alaska at some earlier time, betray their Palaearctic origins by migrating every year to wintering grounds in the Old World rather than in the Americas like most Alaskan birds. These recent arrivals and anomalous migrations strongly suggest that these species have dispersed eastwards from former refuges in Siberia. These species are listed in table 2 and it is significant that some of them are also colonizing westwards from Siberia (appendix).

Table 2. Palaearctic immigrants to Alaska

Recent immigrants	Established species that winter in the Old World
Mongolian Plover *Charadrius mongolus*	Bar-tailed Godwit
Dotterel	Wheatear
Wood Sandpiper	Bluethroat
Curlew Sandpiper	Arctic Warbler
Red-throated Pipit	Yellow Wagtail
White Wagtail	

In addition the Siberian Tit *Parus cinctus*, a resident species in Alaska, would appear on distributional grounds to be a relatively recent colonist from the Palaearctic. Data from Voous (1960), Pitelka (1974).

However, it is difficult to account for the timing of the colonizations when thousands of years have been available to fill the vacant habitats. It is probable that each species has a different rate of dispersal from its former refuge and the continuous arrival of species, each at its own rate, appears to confirm this.

Migration trends

Extrinsic factors like the arrival of the Norway Spruce clearly influence the arrival of species like the Crossbill, which is dependent on that tree for food, but intrinsic factors are probably more important in limiting dispersal from refuges. One such intrinsic factor could be the acquisition of wintering grounds closer to the area to be colonized. For many species the highest mortality occurs on migration and if the

distance could be cut by adopting a new strategy, mortality may also be cut. As many central Eurasian species winter in eastern and southern Asia or East Africa, any westward shift in the breeding range would mean longer migration. Any westward shift in the wintering grounds would mean a shorter migration with higher survival and birds would be in better condition on arrival in the breeding range. The logical outcome of such a pattern of colonization and corresponding shift in the wintering range would be a migratory divide, a common feature in birds that have trans-Palaearctic breeding ranges.

Some species involved in westward range expansions have shown just such a corresponding shift in their wintering grounds. Both the Shore Lark and Lapland Bunting, for instance, have only started to winter in the North Sea area in the last 150 years (Niethammer 1937, Jacobsen 1963) while in other species, the Red-breasted Flycatcher, Red-throated Pipit and Little Bunting, there have been indications that a similar shift might be occurring at present (Jacobsen 1963, Curry-Lindahl 1962). The fact that other species listed in the appendix also appear to be occurring on migration in western Europe with greater frequency (Williamson 1975, Sharrock 1976, Rogers *et al.* 1978) could reasonably be expected as the western limit of their ranges approach the area, but it is also possible that these substantial numbers of migrants, as well as the occasional wintering individuals, might well be the start of similar changes in migration behaviour. These species include the Terek and Broad-billed Sandpipers, Greenish Warbler, Thrush Nightingale, Scarlet Rosefinch and Yellow-breasted and Rustic Buntings.

It is interesting to speculate that similar, sometimes huge, increases in the numbers of some migrants, such as the Richard's and Olive-backed Pipits, Pallas's and Dusky Warblers, and Siberian Stonechats *maura/stejnegeri*, may suggest that these too are extending their ranges westwards in Siberia, an area notoriously poor for recent ornithological news. Until recently the Citrine Wagtail would have been included in this list, but in 1976 and 1977 breeding and possible breeding occurred in Sweden and southern England (Sharrock 1977, O'Sullivan et al 1977).* These migrants and occasional breeding records may well be the vanguard of yet another group of species spreading westward across northern Eurasia.

*Range expansion in Russia has recently been confirmed (Wilson 1979).

Conclusion

This hypothesis provides a reasonable explanation of many of the features apparent in the colonizations of northern Europe by birds of the tundra and boreal forest, as well as by southern species that are beyond the scope of this paper. It also gives a reason as to why they are taking place and not just how. Nevertheless, explanations of how they occur are not excluded because while species might eventually come to occupy all available habitats, short term climatic changes that aid migration or reduce mortality would obviously have an advantageous effect on dispersal compared to periods of inhospitable conditions. Short term climatic changes, as suggested by Williamson, are likely to have aided the colonization of Scotland by some of the birds concerned, but they would probably have eventually reached Scotland by their own efforts. It is likely that the varying rates of range expansion seen in the spread of the Greenish Warbler, with greater expansion under favourable conditions and a reduced rate of expansion when the climate was unfavourable, were caused by just such a short term climatic fluctuation (Valikangas 1951). In the final analysis, however, short term climatic change can only partially regulate long term dispersal from former refuges.

This is not to say that bird distributions do not change as a result of short term climatic fluctuations. One group of birds, including the Bearded Tit and Cetti's Warbler, species sensitive to severe winters, are expanding their ranges in southern England in response to a run of mild winters. Few of the distributional changes seen in Scotland are controlled by such climatic changes however. Even the southerly species, like the Wryneck, Reed Warbler and Red-backed Shrike, may be in-

WRYNECK *W. R. Brackenridge*

volved in long term dispersal from former refuges. When their range expansions in northern Europe are viewed against contractions elsewhere in Europe, it is likely that different populations are involved and that the expanding populations may be part of the long term dispersal of boreal forest birds.

To appreciate the significance of these dispersals it need only be considered that just 150 years ago the Wigeon, Pochard, Tufted Duck, Goosander and Redwing did not breed at all in Scotland. What the situation will be like 150 years from now is impossible to say but it is probable that we will continue to see new breeding species arriving. Amongst the most likely candidates are those listed in table 1 that have already been observed in suitable habitats in Scotland. Others, like Little Stint, Scarlet Rosefinch and Little Bunting, have already been seen singing in Scotland during their migrations and it is possible that they too may breed at some time in the future. The presence in Scotland of two species that are sedentary in England, the Nuthatch and Lesser Spotted Woodpecker, also suggests that these birds may be the forerunners of an immigration by their migrant Scandinavian populations. In the longer term the spread of some birds in Scandinavia, such as Spotted Redshank, Red-throated Pipit, Greenish Warbler and Rustic Bunting, and their increasing occurrence on migration in Scotland, could mean that these too might one day be additions to the nesting birds of Scotland. Whatever happens the future looks attractive and interestingly uncertain.

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Appendix

Range expansions of birds in the European tundra and boreal forest regions

Compiled from the literature

Great Northern Diver ? bred Scotland, Norway 1880s, Spitsbergen 1920s, Scotland, Norway 1970s.

Slavonian Grebe colonized Scotland, Sweden 1900s; spread C. Norway, Faeroes 1930s, N. Norway, C. Sweden 1950s, S.E. Norway 1960s; bred Poland 1970s.

Black-necked Grebe increased Netherlands 1860s; colonized Denmark 1870s; increased Poland 1880s, Czechoslovakia 1900s; colonized Wales 1900s, Ireland, England 1910s; increased Netherlands 1910s; colonized Switzerland 1920s, Scotland 1930s; bred Belgium, Finland 1930s, Finland 1950s; increased Switzerland 1960s.

Gadwall colonized England 1850s; increased Iceland 1900s; colonized Scotland 1900s, E. France 1920s; bred Finland 1920s; colonized Ireland, S. Germany 1930s; bred Finland, Switzerland 1950s; colonized Denmark 1960s; increased Estonia 1960s; bred Norway, Finland, Switzerland 1960s, Italy 1970s.

Wigeon colonized Scotland 1830s; increased 1860s; bred Faeroes 1870s; colonized England 1890s; bred Netherlands 1910s, Ireland 1930s, Netherland, Faeroes 1940s, Netherlands, Ireland 1950s, E. Germany, W. Germany, Denmark, Czechoslovakia, Romania, Italy, Netherlands 1960s.

Pintail colonized Scotland 1860s; bred Faeroes 1870s; increased England, Ireland 1910s; bred Faeroes, Netherlands 1920s, Spitsbergen 1930s,

Portugal 1940s; increased Netherlands 1950s; colonized Romania, Yugoslavia 1960s.

Shoveler increased Scandinavia 1760s, England 1830s, Scotland 1840s, Norway, Denmark 1850s, Britain 1900s; colonized Switzerland 1910s; bred Iceland 1930s; increased S. Norway, Estonia 1930s, Sweden 1950s.

Scaup bred Denmark 1820s, Scotland 1830s, Denmark 1850s and 1880s, Faeroes 1890s; increase in records Scotland, Denmark 1900s; increased S. Norway 1940s; bred England, Spitsbergen 1940s; increased Estonia, S.E. Finland, S.E. Sweden 1950s; bred Denmark, England, Scotland 1960s, Denmark 1970s.

Tufted Duck bred Netherlands 1800s; colonized England 1840s; increased S. Finland, S. Sweden 1850s; colonized Scotland, Ireland 1870s, Norway, Iceland 1890s, E. Germany, Denmark 1900s; increased Netherlands 1900s; colonized Czechoslovakia, S. Germany 1920s; increased Czechoslovakia 1930s, France, Netherlands, Norway 1940s; bred Belgium 1940s, ? Bear Island, Belgium, Switzerland 1950s; increased Belgium, Austria, France, Sweden, N. Germany 1950s and 1960s; bred Hungary, Faeroes 1960s.

Pochard colonized Netherlands 1810s, England 1840s, Iceland, Sweden 1850s, Denmark, Finland 1860s, Scotland 1870s; increased Poland, Finland 1880s, Scotland 1890s; colonized Ireland, France, Moscow area 1900s; increased Estonia 1930s, France, E. and W. Germany, Netherlands 1950s; colonized Austria, Switzerland, Belgium 1950s; increased Austria, Belgium 1960s, Switzerland 1970s.

Goldeneye colonized W. Russia 1840s, Poland 1870s; bred Bulgaria, Romania 1900s, Denmark, England 1930s, Switzerland, Yugoslavia 1950s; colonized Czechoslovakia 1960s; spread S. Sweden, S. Norway 1960s; colonized Denmark, Scotland 1970s.

Common Scoter colonized Denmark 1840s, Scotland 1850s; increased Scotland 1870s; spread S. Scotland 1880s, Ireland 1900s; bred Spitsbergen 1900s; increased Ireland 1940s; bred Spitsbergen 1960s, Faeroes 1970s.

Red-breasted Merganser increased Scotland 1880s; colonized Ireland 1900s; bred Netherlands 1910s; colonized S. Scotland 1930s, N. England, N. Wales 1950s; increased Faeroes, S. Sweden 1950s; colonized C. England, S. Wales 1960s.

Goosander colonized Scotland 1870s, Switzerland 1880s, S. Yugoslavia 1900s, S. Scotland, N. England 1930s; bred Greece 1930s, 1960s; colonized Ireland, Wales 1960s.

Smew spread into Sweden in 19th century; bred N. Norway 1890s, increased 1920s; spread C. Norway 1930s, Baltic coast 1960s.

Barnacle Goose bred Iceland 1960s; spread Spitsbergen 1960s; increased 1970s; bred Iceland 1970s.

Marsh Harrier colonized Finland 1880s; increased Sweden, Denmark, England 1920s (pattern unclear due to persecution and drainage).

Osprey persecuted until 1930s; increased Sweden 1940s, C. Norway 1950s; recolonized Scotland 1950s; spread N. Norway, Scotland 1960s.

Dotterel bred Austria 1870s, 1910s, Alaska 1930s, Austria 1940s; colonized Italy 1950s, Netherlands 1960s; bred Wales, increased Scotland 1960s.

Black-tailed Godwit ?bred Scotland 1900s; increased Iceland 1910s; bred Scotland 1940s, W. Norway 1950s, S. Scotland, N. Scotland, S. Norway (*islandica*) 1960s.

Green Sandpiper increased Finland 1900s; bred England 1910s, ?Netherlands 1920s, Scotland 1950s.

Wood Sandpiper bred England 1850s, Scotland 1950s; colonized Scotland 1960s.

Spotted Redshank colonized N. Norway 1890s; increased 1920s; colonized C. Finland 1960s.

Greenshank increased Scotland 1860s, S. Sweden 1950s; bred Ireland 1960s.

Terek Sandpiper spread into W. Russia 1850s; colonized E. Finland 1880s, C. Finland 1910s, Baltic coast 1930s.

Temminck's Stint increased C. Norway 1900s; bred Scotland 1930s, 1950s, England 1950s; spread S. Norway 1950s, north Baltic coast 1960s; ?colonized Scotland 1970s.

Ruff increased C. Norway 1950s; bred Scotland ? 1960s, 1970s, England 1970s.

Little Gull bred Finland 1870s; colonized Finland 1880s, Denmark 1900s, Netherlands 1940s; bred N. Sweden 1950s, S. Norway 1960s, England 1970s.

Wryneck spread N. Norway, N. Sweden 1950s; colonized Scotland 1960s.

Shore Lark colonized Scandinavia after 1750s; spread into C. Norway 1830s, S. Norway 1880s; bred Scotland 1970s.

Fieldfare colonized E. Germany 1860s, W. Germany 1910s, Switzerland 1920s, Greenland 1930s, E. France 1950s, Denmark, Romania, Czechoslovakia, Belgium, Scotland, C. France 1960s; increased S. Sweden 1960s; bred N. England 1970s.

Redwing bred Scotland, Faeroes 1920s, Scotland 1930s, 1940s; increased C. Sweden 1940s; bred Scotland, Ireland 1950s; colonized S. Sweden, Denmark, Scotland 1960s; bred England 1970s.

Red-flanked Bluetail spread into European Russia 1880s, Kola Peninsula, Russian Karelia 1930s, E. Finland 1950s.

Black Redstart colonized Denmark 1890s, Sweden 1900s, England 1920s; bred Norway 1940s, Scotland 1970s.

Thrush Nightingale bred S. Sweden 1860s; colonized Finland 1890s; increased S. Finland 1920s, S. Sweden 1940s.

Great Reed Warbler increased Denmark 1850s; colonized Sweden 1910s, Finland 1930s.

Reed Warbler colonized S.W. Finland 1920s; bred Ireland 1930s; colonized C. Finland, S.E. Norway 1940s; bred Scotland 1970s.

Greenish Warbler increased W. Russia 1870s; spread into Lithuania 1900s, Poland, E. Germany 1930s, S. Finland, S. Sweden 1940s; bred Denmark, N. Sweden 1950s, C. Sweden 1960s.

Arctic Warbler bred N. Norway 1870s, E. Finland 1890s, N. Finland 1910s; increased N. Norway 1940s; spread into C. Sweden, C. Norway 1950s.

Red-breasted Flycatcher bred S. Finland 1870s; ?bred Netherlands 1880s; increased S. Finland 1900s; bred S. Sweden, Denmark 1940s; increased S. Sweden 1950s; bred Denmark, Netherlands 1960s.

Red-throated Pipit increased N. Norway 1890s; colonized C. Sweden 1940s; increased S. Norway 1960s.

Citrine Wagtail spread N.E. Russia 1920s, Ukraine 1950s, 1960s; bred Sweden, ? England 1970s.

Waxwing ?colonized N. Finland 1840s, N. Norway 1860s, C. Sweden 1960s.

Scarlet Rosefinch colonized S.E. Finland 1850s; bred Denmark 1890s; colonized C. Sweden 1930s, W. Finland, N. Sweden 1950s; bred Denmark, S. Norway 1960s.

Brambling bred Denmark, ? Scotland 1860s, Denmark 1870s, 1910s, 1920s;

Scotland 1920s; Faeroes, S. Sweden, Denmark 1960s; Scotland 1970s.

Yellow-breasted Bunting increased E. Urals 1820s; spread into European Russia 1840s, W. Russia 1870s, Karelia 1890s, E. Finland 1920s, C. Finland 1950s, N. Sweden, S.W. Finland 1960s, N. Norway 1970s.

Rustic Bunting colonized W. Russia 1850s, E. Finland 1880s, W. Finland 1910s, N. Sweden 1930s; spread into N. Norway, C. Sweden 1960s.

Little Bunting increased W. Russia 1880s, N. Finland 1930s; spread N. Sweden 1960s; bred C. Finland 1960s.

The following species have also shown some indications of range expansion, but there is insufficient detail in the literature for them to be included in the main table: Velvet Scoter, King Eider, Jack Snipe, Little Stint, Broad-billed Sandpiper, Long-tailed Skua, Glaucous Gull, Snowy Owl, Golden Oriole, Bluethroat, Red-backed Shrike, Pine Grosbeak and Lapland Bunting.

R. D. Murray, 143 Eskhill,
Penicuik, Midlothian.

GREEN SANDPIPER *R. H. Hogg*

Birdwatching on the Isle of Mull

R. F. COOMBER

(Plates 17-19)

Mull is a larger island than most visitors realise until they arrive. Large sealochs and many smaller indentations give a total coastline of over 300 miles and this, coupled with a total area of 225,000 acres, makes a lot of birdwatching country. Mull enjoys a wide range of habitats. The whole island is good for birdwatching and one should never be without binoculars. From our cottage at Tobermory we have seen a Peregrine hunting over the town several times, and twice in

summer I have looked up to see Arctic Skuas flying inland.

Certain places are essentially summer bird areas, where the population consists mainly of summer passerines. A typical example is the stretch of road from Dervaig through Glen Bellart and Glen Aros towards Salen. In summer it is very good, but in winter you are lucky if you see much more than a few pipits, corvids and the occasional raptor.

The island is rather disappointing for waders, especially migrants. Lapwing, Ringed and Golden Plover, Snipe, Woodcock, Curlew, Redshank, Common Sandpiper and Oystercatcher breed, and Greenshank and Dunlin may occasionally do so. Migrants are few and far between: a few Dunlin, Turnstone, Bar-tailed Godwit and Greenshank, with rather less in the way of Grey Plover, Knot and Sanderling. The best wader sites are Lochdon; Fidden—on the Ross of Mull near Fionnphort; Iona—especially the west coast; Loch Scridain—at the head of Loch Beg opposite The Kinloch; the south side of Loch na Keal and the head of Loch Cuin at Dervaig.

It is impossible to do justice to Mull in the space permitted, so the following are the best places I have found over the last five years. There are many more and birdwatchers should not limit themselves to the areas listed.

Loch na Keal is perhaps the premier site of Mull. It is west of Salen and cuts the island to a width of three miles. It is about six miles long and the road follows the shore quite closely for the most part. The best area for aquatic species is from Kellan on the north side round by the mouth of the River Ba to the Scarisdale River on the south. In winter it is good for divers and Slavonian Grebes. The first Great Northerns return in September or October and sometimes appear in family groups, with the adults still in breeding plumage. There are generally a dozen or so present until March when numbers build up prior to departure in early May. By the end of April there can be over 25 with most of them in full summer plumage and a certain amount of displaying taking place.

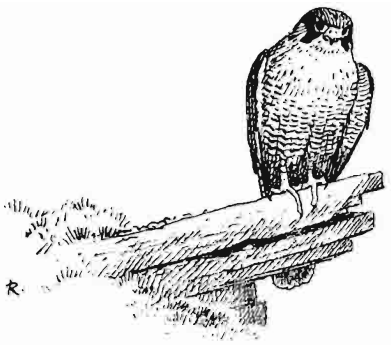
The numbers dwindle through May, so that by June only the odd individual remains. Black- and Red-throats are present in small numbers through the winter, but during the summer there are always Red-throats coming and going on fishing trips from their nesting lochans up in the hills. Slavonian Grebes appear in October and are present until April, by which time they are also in breeding plumage. The numbers vary from winter to winter and also decrease should there be a period of rough weather.

There are always Shags, a few Cormorants, Kittiwakes and Black Guillemots in the loch, and during the summer Manx Shearwaters and Gannets come in. However, during the win-

ter Razorbills and Guillemots are more plentiful than at other times of the year. The numbers of wintering Eiders and Mergansers depend on how the moulting flocks in the summer build up. In winter up to 30 Goldeneye collect in the fresh water at the mouth of the River Ba. Occasionally Goosander and Scaup also turn up there. Barnacle Geese appear on Inch Kenneth and at Ulva Ferry at the western end of Loch na Keal. They usually come in after Christmas from Staffa and the Treshnish Isles where the wintering flocks first find grazing.

The south side of Loch na Keal, where the mountains sweep up to over 3,000 feet from sea level, is probably the best area to watch for Golden Eagle from the road, although there is a chance of seeing a Golden Eagle from the road virtually anywhere on Mull. Both Peregrine and Merlin hunt the coastal belt round the loch, but one is less likely to see the latter here in summer. Anyone climbing Ben More (3,171 feet) or one of the neighbouring peaks should look out for the few Ptarmigan that haunt the tops.

Fidden is a good area near Fionnphort, where camping is permitted. It consists of low farmland, machair and tidal flats between Mull and Erraid. It is probably better during migration periods and winter, when there is less disturbance. Greenland Whitefronts (c.60) and occasionally Barnacles winter. When the ground is not frozen too hard you may find the only wintering Golden Plover on Mull. The pastures are a haven for Lapwing, Redwings and Starlings, where they join Rock Doves, Rooks and Jackdaws. The two corvids are commoner around Iona and Fionnphort than anywhere else on Mull. One can expect both Peregrine and Merlin hunting here and look out for divers offshore. It is one of the best sites on the island for waders and early migrants. Wheatear and



PEREGRINE *R. A. Richardson*

White Wagtail can often be found first at Fidden.

The area backs on to Loch Poit na h-I—a fresh water loch that often holds more Tufted Duck and Pochard than the rest of the island put together. I have often watched an Otter here and the Greenland Whitefronts sometimes come over from Fidden to bathe and preen. For the last few summers the loch has had a late Whooper Swan staying until June or July. Two other species to look out for around Fidden in summer are Corncrake and Twite.

There is much about Iona I don't really know. The best bird is the Corncrake which still occurs in some numbers. In 1978 there were at least five calling birds. In winter both Barnacle and Greenland Whitefronts occur, but I have yet to be sure that these aren't some of the Fidden birds. In summer the west coast is well worth visiting as there are some easily watched Fulmar colonies. On the beaches Oystercatcher and Ringed Plovers breed in good numbers and summering Sanderling and Dunlin may be found.

The Aros River and Salen Bay are a small estuary and bay halfway up the island on the east side, where the road runs close to the shore. Unfortunately the estuary has more stones than mud and does not attract the waders it deserves. Small numbers of Teal, Wigeon and Goldeneye winter and Goosander turn up at any time of the year. In the bay there are always Great Northerns in winter and spring. Red-throats fish here in summer, when the occasional Black-throats appear. Black Guillemots can always be seen and in rough weather shearwaters and skuas come close in. Anyone visiting the area in summer will find that Common Sandpiper and Rock Pipit are the commonest breeders. Approaching Salen from the north there is a nice bit of deciduous wood on the right with Redstarts, Wood Warblers and Spotted Flycatchers.

Mishnish Lochs, about three miles west of Tobermory on the road to Dervaig, are a string of three lochs and the surrounding hills have recently been planted by the Forestry Commission. This is another area that comes to life in the breeding season. In winter it is home to a few Goldeneye and Mallard and from time to time Whooper Swan and Goosander put in an appearance. There is a chance of Hen Harrier and Short-eared Owl. Most of the island's population of these two species leave soon after breeding, but in March the numbers increase dramatically. The first Red-throats and Mergansers return to fresh water in February, and a few weeks later the surrounding scrub, plantation and moorland come alive with many passerine species—pipits, chats, Whitethroat, Willow Warbler and Reed Bunting.

Most of the good woodland for birds on Mull is either

beech or oak or a combination. The best areas are Aros Park (Forestry Commission just south of Tobermory), the Ardura woods near Loch Spelve, and a number of small oakwoods on the west side of Mull bordering Loch Tuath. Most of these have Redstarts, Wood Warblers, Tree Pipits and Spotted Flycatchers, as well as Great Spotted Woodpeckers, which have spread into most areas of suitable habitat since the last war and were probably under-recorded in the *Atlas* survey.

Although there are many acres of young plantation there is little mature coniferous woodland. The best areas are at Fishnish, Loch Friza and Glen Gorm. The highlight in these places recently was the good number of Crossbills present during the second half of 1978.

I've left my favourite group—seabirds—until the end. The best seabird colonies are out on the Treshnish Isles and can be best seen by boat from Ulva Ferry with Colonel Anderson (phone 210) or with Ian Morrison from Croig. There are large numbers of auks, Fulmars, Shags and Kittiwakes breeding, especially on Lunga and the Harp Rock. During the breeding season the Arctic Skuas come over from Coll for easy pickings from the auks and give the observer wonderful views as they ignore the presence of the boat. Occasionally Storm Petrel and Manx Shearwater are seen on these boat trips, but the trip on the MacBrayne's boat to Coll and Tiree is better for these two. Some years Corncrakes breed on Carnaburg and can be heard but not seen.

Barnacle Geese winter on the Treshnish Isles and nearby Staffa. In summer the commonest species on Staffa are Puffin, Fulmar and *Homo sapiens*. It is hoped that the Puffins will be able to survive the increasing tourist pressure.

The best site on Mull for seabirds is Caliach Point, the most northwesterly corner. There is a handful of auks with all four species being represented by very small numbers. There are Fulmars and the Kittiwake colony has increased over the last few years. The point is well sited for seawatching and in a strong breeze with a bit of west in it the waters between Mull, Coll and Tiree can be very good. From the point I have seen Sooty Shearwaters, and Arctic, Great and Pomarine Skuas. However, when there is a really good blow by far the best way to see shearwaters and petrels is on a day-trip from Oban via Tobermory to Coll and Tiree. In the waters off Mull's west coast we have seen Great Shearwaters and at times quite large numbers of Sooties—on one day in August 1977 we saw c.120. Another memorable trip was in September 1978 with petrels everywhere—c.150 Stormies and 16 Leach's. Storm Petrels can be seen on most crossings and my earliest date for Leach's has been 28th June. Skuas are regular and most are

PLATES 17-19. Birdwatching on the Isle of Mull (pp. 174-9).

PLATE 17 (overleaf). Manx Shearwater. *D. A. Smith.* Large numbers of shearwaters can be seen off Mull in high winds.

PLATE 18 (a). Manx and Sooty Shearwater, Mull, August 1976. Note dark colour and large size of the Sooty (right). (b) & (c). Great Shearwater, Mull, August 1976. Note dark bill, cap, vent and speckles under wings, and whitish collar and band above tail. *R. F. Coomber*

PLATE 19 (a). Loch na Keal, Mull, a haunt of divers (three species), Slavonian Grebes, Golden Eagle and Peregrine, with Ptarmigan on the hill-tops. (b). Fidden, Mull, a site for waders and migrants, with divers, geese and raptors. *R. F. Coomber*

PLATE 20. Dipper at nest. *R. T. Smith.*
A triangular relationship is noted on p. 180.

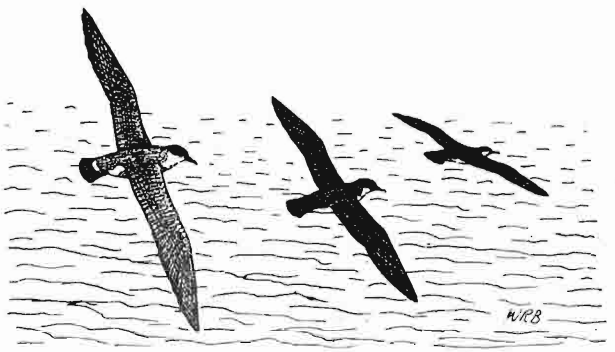
Arctics which breed on Coll and can be frequently seen in the harbour.

The best point to watch seabirds moving up and down the Sound of Mull is from the picnic area at Fishnish, not far from the jetty where the Lochaline ferry lands. So far I have seen all the usual seabirds except for petrels and the larger shearwaters in the sound.

During the summer boats cross frequently to Mull from the mainland but this service is drastically reduced in winter. Visitors should contact Caledonian-MacBrayne Ltd, The Pier, Gourock, Renfrewshire, and the Oban, Mull and District Tourist Office, Main Street, Tobermory, Isle of Mull. You may also wish to read two books, both called *The Isle of Mull*, one by Macnab, the other by Turner and Finlay.

Postscript I am planning a book on the birds of Mull and should be most grateful to hear from anyone with relevant observations, past, present and future, and any ringing recoveries involving Mull. In the event of publication acknowledgment will be made.

Richard Coomber, Staffa Cottages Guest House,
Tobermory, Isle of Mull, PA75 6PL.



GREAT and MANX SHEARWATERS *W. R. Brackenridge*

Short Notes

Redshanks swimming for food

On 15th April 1977 I saw a rather puzzling bird on Portmore Reservoir, Peeblesshire. There was a big hatch of fly and this bird was swimming 100 yards (c.90m) from the shore, picking industriously at the emerging insects. The front of the body was low in the water with the tail held high. The long reddish bill and dark body and the jerky mode of swimming gave it

the appearance of a Water Rail. After ten minutes a second bird joined it and five minutes later both flew off showing the conspicuous white trailing wing edges of Redshank. At least one of them flew out to the centre of the reservoir, alighted on the water and again began to feed energetically. The surface of the water was dead calm and the loch was dotted with birds surface-feeding on emerging insects, including 30 Black-headed Gulls, ten Mallard, four Teal, and most of the 83 Tufted Duck. The 55 Goldeneye present showed little interest in the flies at the surface although many of them were diving for food.

R. W. J. SMITH.

Kittiwake with red legs

Feeding amongst the numerous gulls and ducks at the sewage outlet into Newhaven Bay, Edinburgh, on 28th February 1977 were three adult Kittiwakes, one of which had vivid pillarbox red legs and feet. The unlikely possibility of it being a Red-legged Kittiwake *Rissa brevirostris* from the North Pacific can be discounted because its plumage was identical with the others.

Exceptions to the normal dark leg colour were noted by Stokoe (1958), Coulson (1959) and Greenwood (1963). The most frequent abberation appeared to be an amount of yellow, especially in second summer birds, but there were some with red. Stokoe drew attention to one with orange legs on the Bass Rock in 1955, and to three such birds there in 1958, two of which were rather dull.

COULSON, J. C. 1959. The plumage and leg colour of the Kittiwake and comments on the non-breeding population. *British Birds* 52 : 189-196.
GREENWOOD, J. 1963. Variation in leg-colour of Kittiwakes. *British Birds* 56 : 110.
STOKOE, R. 1958. The leg colour of the Kittiwake. *British Birds* 51 : 398-9.

ANDREW W. BARKER

[One with bright red legs was reported in the Netherlands in 1976 (*Limosa* 50 : 146).—ED.]

Polygamy in the Dipper

During the winter of 1976/7 three colour-ringed Dippers occupied adjoining territories on the River Gryfe, Renfrewshire. In upstream to downstream order they were: female A, female B and a male (sexed by a combination of wing length and weight). On 19th March the male was seen with A nest-building under a bridge on her territory; on this same day he was also associating with B on her territory. On 26th March he was again building with A. On 3rd April he kept company

with both females in their respective territories; the almost completed nest in A's territory had vanished and I observed the male mating with B. On 11th April B was incubating five eggs in a bridge nest site in her territory. Over the following two weeks while B incubated, the male was seen in both territories on four occasions. On 24th April he was assisting A with nest building at her original site. When B's eggs hatched he helped in feeding the chicks while also helping A to finish her nest. A began laying in her second nest on 11th May and on 15th May had a complete clutch of five eggs. On 19th May I examined these against strong backlighting and the embryos were visible, confirming that the eggs were fertile; on that same day while A was incubating the male was feeding the fledged young of B. On 21st May I found that A's nest had been destroyed and the eggs taken, and shortly afterwards A disappeared. During these events no other male was observed in the territories of the two females.

I can find only two other references to polygamy in the Dipper (Mork 1975, Hewson 1967) and it would appear that the habit is unusual. It is of interest that of the 43 species of European passerines in which polygyny has been recorded, 23 use enclosed nests (Haartman 1969). Skutch (1976) has discussed the reasons for this. Although it builds an enclosed nest, two factors militate against polygyny in the Dipper: lifetime pairing with associated pair territories, and the preponderance of males among many of the populations so far studied (this study, Mork 1975, Richter 1954). At the beginning of the 1977 breeding season, however, out of eleven birds holding territory on the River Gryfe study area only four were males, leaving three available females, and no visiting birds were observed in the study area during the winter or breeding season. This unusual sex ratio in a relatively static population perhaps explains the events that took place.

HAARTMANN L. v. 1969. Nest-site and evolution of polygamy in European passerine birds. *Ornis Fennica* 46 : 1-12.

HEWSON, R. 1967. Territory, behaviour and breeding of the Dipper in Banffshire. *British Birds* 60 : 244-252.

MORK, K. 1975. (Bigamy and two broods among Dipper.) *Sterna* 14 : 131-4.

RICHTER, H. 1953. Zur lebensweise der Wasseramsel. *J. Orn.* 94 : 68-82.

SKUTCH, A. F. 1976. Parent Birds and their Young. University of Texas Press, Austin.

HECTOR GALBRAITH

Collared Flycatchers in Shetland

On 13th May 1975, W. E. Oddie and I found a male Collared Flycatcher in a garden on Housay, Out Skerries, Shetland, after a morning of light easterly wind with drizzle. The wind direction may have prompted its arrival, but we found vir-

tually no other new migrants that day. The first impression was of a male Pied Flycatcher with more white on it than usual, having a larger area on the forehead, and on the closed wing it extended to the lower edge in a wide, inverted 'V'. It had a broad white white collar and a white rump with a few darker feathers. The brilliance of the plumage was striking, the black appearing particularly deep and glossy, perhaps in contrast to so much white. The only area in which the bird had less white than a Pied Flycatcher was in the outer tail-feathers. It flew off after two minutes and was not relocated until the evening when Dr B. Marshall and J. H. Simpson arrived from Whalsay.

It was only just over one year later, on 25th May 1976, this time in the Southern Gios on Housay, that I found a second Collared Flycatcher, this time a female. Though it was not as striking as the male, it took only seconds to identify. The principal features were: overall greyish coloration, not olivaceous as in female Pied Flycatcher; a frosty-grey collar and a rump paler than mantle; pure white wing markings, considerably greater in extent than those of female Pied which are actually off-white to buffish; and a white patch at the base of the primaries on the closed wing. When compared with a female Pied Flycatcher on another part of the island, the differences were obvious.

A. R. LOWE

[Recorded, also in May, from Shetland in 1947 and Orkney in 1963; these bring the British total to eight; breeds mainly in central and eastern Europe.—ED.]

Carrion Crow taking Blue Tit

On 24th March 1977 I was surprised to see a Carrion Crow on the bird table close to my window in New Galloway, Kirkcudbrightshire. A few seconds later a Blue Tit was feeding at the nut basket below the table. The tit suddenly rose to the table and in a flash the crow had it in its beak and flew off.

ANNE S. AITKEN

Reviews

Eagles of the World. By Leslie Brown. Newton Abbot, David & Charles, 1976, pp. 224, many photographs and drawings, 17.5 x 24 cm. £4.95.

This book provides an informative and readable account of the biology of eagles. It has six main sections which deal respectively with the various kinds of eagles, their physical characteristics, lifestyle, breeding, development and mortality, and conservation. It is written much in the

style of Leslie's earlier books, with which most of us are familiar, and contains a good deal of personal opinion. The claim on the dustjacket that the author is "the world's foremost authority on eagles" is undoubtedly true, and in this book he has added extensively from the literature to his own lifetime's experience in Scotland and Africa. He is also the most prolific writer on birds of prey, having had no less than three books on these birds published in the same year (1976). These followed his earlier review of world raptors with Dean Amadon, a book on African raptors, and at least two previous works on eagles. What, then, does the present one offer that the others do not ?

Since his earlier books on eagles, knowledge and understanding have advanced considerably. The author has incorporated much of this new material in the present book and, in the light of it, has re-interpreted some previous observations. His *British Birds of Prey* (1976) of necessity deals only with a minority of eagles, but there is rather more overlap with his other recent book *Birds of Prey, their Biology and Ecology* (1976). However, the eagle book contains a lot more detail on these birds.

It also brings out the great extent to which we are indebted for our knowledge of eagles to a few amateur enthusiasts working in their spare time. The reason is not far to seek, for the career-minded professional is usually concerned with smaller, faster-breeding birds that yield plenty of facts and figures in a short time, a requirement to which long-lived, low density eagles do not lend themselves. Some eagles are now among the best known birds in the world, including the Golden Eagles of Scotland and the Black Eagles that have been studied so meticulously in Rhodesia. Others are among the least known, as their nests and eggs have never been described. An appendix gives the present state of knowledge on each species, so the budding eagle enthusiast living in some remote part of the world can easily see where his efforts would be best applied.

The book is nicely produced and well illustrated.

I. NEWTON

Guide to the Identification and Ageing of Holarctic Waders (BTO Guide 17). By A. J. Prater, J. H. Marchant and J. Vuorinen. Tring, British Trust for Ornithology, 1977, pp. 168, 32 monochrome and 2 colour photographs, many text figures, 21 x 15 cm. £2.50.

The increase in wader studies has both shown the need and provided the information for this guide. Based largely on the experience of the Wader Study Group together with extensive examination of museum skins, the work covers all wader species breeding in the Palaearctic and Nearctic regions. After an introduction including notes on terminology, plumage, feather wear, moult and measurements, the main section devotes at least one page to most species under the headings Identification, Ageing, Sexing, Geographical variations, Biometrics and References. It is pleasing to see a bird book reversing recent trends and adequately listing support literature.

Ageing characters for most waders are based on plumage, amply supported by line-drawings and photographs. Non-ringers will also use this guide for it is possible to age many waders in the field, especially in autumn, and valuable information on annual breeding production could result from estimates of age ratios of flocks observed. To date, the general field guides have been woefully erroneous here, often labelling juvenile plumages as "adult winter".

Characters for sexing and racial identification, particularly out of the breeding season, are usually based on measurements, and my two main criticisms lie here. The authors have given measurements of museum

specimens instead of live birds. While in many species too few live birds have been measured, the large amount of information gathered by ringers for other species is not used. The relationship of measurements, particularly wing lengths, between live birds and skins is very variable and the statement that "the live measurements of all species can be estimated" from those given is misleading. Secondly, the authors give measurements in terms of means with ranges rather than with standard deviations. If sexes (and races) of waders had non-overlapping ranges so that each individual could be sexed this might present no great problem (except in relating live to dead birds), but this is rarely the case and measurements can usually be used rather to estimate the sex ratio of a catch. For this, an estimate of standard deviation is essential.

These criticisms should not, however, discourage the purchase of this reasonably-priced book for it is an essential aid for ringers and should give added interest to those watching waders in the field.

MICHAEL W. PIENKOWSKI

Current literature Articles and reports on the status and distribution of birds in Scotland are listed here. Strictly biological studies such as ecology and behaviour are excluded, as are references from widely read journals such as *British Birds* and *Bird Study*. Most listed items and many others are in the club library, and we would be grateful to authors for reprints of any ornithological work, biological or otherwise, published outwith the main bird journals.

Forth and Tay estuaries winter seaduck surveys 1977-1978. L. H. Campbell. South East (Scotland) Region Nature Conservancy Council report.

Glenrothes Birds 1948 *to* 1978. T. Gray. (No address).

Pentland Hills Dipper Survey, October 1976 - *March* 1977. B. R. Planterose, A. D. Mackie, M. Howard, 1977. Department of Forestry and Natural Resources, University of Edinburgh.

North-East Scotland Bird Report 1977. A. G. Knox (ed) 1978. Aberdeen University Bird Club. £1.20 plus postage. (Includes 'Seabirds in North-East Scotland' by W. R. P. Bourne and A. J. M. Smith).

Birds in the Kingsmeadows area of Peebles: October 1971 - *March* 1978. C. M. Morrison, 1978. SWT/NCC report.

Angus Wildlife Review 1976 & 1977. N. K. Atkinson & A. B. Ritchie (eds) 1978. (Includes Angus/South Kincardine bird reports). Dundee Museums, 50p.

Shetland Bird Report 1977. B. Marshall et al (comp.) 1978. £1.20.

A Checklist of the Birds of Tweeddale (Peeblesshire). C. M. Morrison (ed) 1978. Peebles Support Group, Scottish Wildlife Trust (out of print).

Wildlife potential in the Cairngorms region: a reply to Dr Adam Watson. J. P. Grant 1978. *Landowning in Scotland* 172: 28-30.

The Montagu's Harrier breeding in Scotland. E. A. Blake 1978. *Forth Naturalist and Historian* 2: 3-29 (1977).

Breeding of the Common Crossbill *Loxia curvirostra* in the Stirling region. J. Mitchell 1978. *Forth Naturalist and Historian* 2: 70 (1977).

Letters

Wader counting on the rocky shores of East Lothian

The low tide survey by Summers *et al* (8: 299-308) of eastern Scotland showed that rocky shores hold most of our wintering Turnstones and Purple Sandpipers and important

numbers of several other species. However, the East Lothian coast presented a problem as rock alternates with sand and occasionally mud, making it difficult to decide how many birds rely on the predominantly rocky areas, while offshore rocks and islands affect counting accuracy. The totals they obtained for certain species are far higher than those for other counties in the study and were of considerable concern to local ornithologists who count for the Estuaries Enquiry. For example, the 6,000 Oystercatchers compares with a midwinter high tide total of just under 7,000 for the whole Firth of Forth in 1973-4. Even allowing for slightly incomplete coverage in 1973-4 these figures suggest that high tide counts in the outer Firth underestimate the wader populations so badly that they are of little or no value.

In December 1976 and 1977 we counted at low tide (half ebb to half flood) the 35 km (22 miles) between Gullane Point and Berwickshire, excluding the bay at Tyninghame. These shores are a mixture of sand and rock but contain no large muddy areas and most waders feed on the rocks or the adjacent sand and weed. Weather was cold, especially in 1976 when even coastal fields were frozen, so few birds were likely to be feeding inland. Results were compared with the Estuaries Enquiry December high tide counts and the 1973-4 low tide survey.

	(1) High tide		(2) Low tide		(3) Low tide
	1976	**1977**	**1976**	**1977**	**1973-4**
Oystercatcher	1169	1026	1576	1502	6100
Ringed Plover	148	121	257	263	220
Turnstone	1266	1451	1515	1633	1299
Curlew	36	182	210	221	1140
Bar-tailed Godwit	32	—	42	17	102
Redshank	294	500	382	499	1540
Knot	132	—	422	813	1829
Purple Sandpiper	446	435	642	659	688
Dunlin	1006	871	1101	882	3253

Counters were (1) J. H. Ballantyne, D. C. Davidson, R. G. Nisbet, R. W. J. Smith, R. Weatherhead, E. S. and S. R. D. da Prato; (2) E. S. and S. R. D. da Prato, Dr L. H. Campbell; (3) data from Summers et al (8: 303).

The results confirm low tide counts as the best method of censusing rocky coasts. We cannot agree that high tide counts are without value provided they are carried out in good weather conditions by experienced local observers. Indeed they are essential when rocky coasts adjoin mudflats, as in the Forth, since birds can easily move between count areas and it is important that all sections of the estuary are counted at the same time. However, a midwinter low tide count, even if confined to Turnstones and Purple Sandpipers, is clearly a most useful addition which we hope to continue. All three low tide

surveys show similar totals for these two species which suggests that counting methods and accuracy were similar. We are puzzled by the high totals of Oystercatchers, Dunlin, Curlews and Redshanks obtained in 1973-4 and wonder whether bays adjoining our count area were included. Oystercatchers, Redshanks and Curlews all feed inland to some extent in East Lothian. However most Oystercatchers and many Redshanks go no further than golf courses and coastal fields and can still be counted at high tide. Many Curlew and some Redshank regularly feed up to three miles inland but we have never found either species in big numbers on rocky shores as they prefer to congregate on the mud at Aberlady and Tyninghame.

E. S. and S. R. D. DA PRATO

One of the findings of our study was that large differences occurred in the numbers of Oystercatchers, Redshanks and Curlews on a given part of the Aberdeenshire coastline within one winter season. We therefore concluded, "For most species variability of counts made it difficult to obtain accurate and comparable data, but relatively accurate data were obtained for Turnstones and Purple Sandpipers". Therefore it is not surprising that discrepancies occurred between two counts made three years apart. However it is interesting that the Turnstone and Purple Sandpiper numbers are similar. This is consistent with our findings for the populations of these species on the Angus coastline.

The discrepancies may have partly resulted from our inclusion of all substrata within the defined "rocky shore" study areas. It was not realistic to exclude the birds which occurred on areas of mud for all the species associated with rocky shores forage on mud to a greater or lesser extent (even Purple Sandpipers). Although East Lothian had the highest proportion of depositing shore we treated it in a similar manner to the other counties.

R. W. SUMMERS

Notice

Raptor and owl research register It has long been felt that there is a need to develop some means by which the many scattered field workers on raptors and owls can be contacted by the conservation agencies (and vice versa) when necessary. Also studies by various workers in isolation could probably benefit enormously by comparison and co-operation with others. The BTO is supporting a register of research on birds of prey and owls for these two main reasons. Research is given a wide interpretation as any systematic study of any aspect of the biology of birds of prey or owls. Full details and registration cards are available from C. R. Tubbs, c/o Nature Conservancy Council, Shrubbs Hill Road, Lyndhurst, Hampshire SO4 7DJ.

The Scottish Ornithologists' Club

Revenue account for the year ended 30th June 1978

	Year to 30/6/78	Year to 30/6/77
INCOME		
Subscriptions received for year	£7532	£7474
Income tax recovered on covenanted subscriptions	998	1166
Dividends and interest received (gross)	301	302
Surplus on Bookshop (sales £50172)	12640	9779
Sale of "Scottish Birds"	428	440
Sundry sales less sundry purchases	245	161
Donations, including annual raffle proceeds ...	669	356
Transfer from life membership fund	50	—
Gain on redemption of investments	—	352
	£22863	£20030
EXPENDITURE		
Branch expenses including lectures	£1025	£787
Travel expenses of Council members and of delegates to conferences	504	543
Secretarial and editorial expenses	14084	12942
Office expenses	2012	1607
Scottish Centre for Ornithology and Bird Protection: Club's share of running expenses	1437	981
Cost of books purchased for library	148	155
Cost of publishing "Scottish Birds" (less advertising revenue £833)	2979	2662
Net cost of annual conference	101	69
Subscriptions paid	75	73
	£22365	£19819
Excess of Income over Expenditure	498	211
	£22863	£20030

Balance Sheet as at 30th June 1978

	Year to 30/6/78	Year to 30/6/77
GENERAL FUNDS OF THE CLUB		
Accumulated surplus from previous year	£1271	£1060
Add surplus for year	498	211
	1769	1271
(Note : £1000 earmarked for House Fabric Fund)		
Life membership fund	3162	1612
"Scottish Birds" Appeal Fund	1751	1601
Earmarked for library binding	—	85
	£6682	£4569
REPRESENTED BY		
Cash in hand and bank	£395	£335

Cash in Edinburgh Building Society		78	209
Bookshop stock		9667	7559
Tie, badge and car sticker stock		125	64
Debts due to club		2308	1627
Investments at cost as below		1798	1798
		14371	11592
Less			
Subscriptions paid in advance	£93		27
Debts due by club	7596		6490
Due to Endowment Fund	—		506
		7689	7023
Total net assets		£6682	£4569

Investments as at 30 June 1978

	Market Value	At cost	At cost
Safeguard Industrial Investments Ltd.—			
875 Ord. shares of 25p each	£621	£508	£508
£1280—10½% Treasury Stock 1979	1280	1290	1290
	£1901	£1798	£1798

Endowment Fund

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

Revenue account for the year ended 30th June 1978

	Year to 30/6/78	Year to 30/6/77
INCOME		
Interest and Dividends received (gross) ...	£542	£509
EXPENDITURE		
Grants as detailed in Report of Council	460	175
Excess of income for the year	£82	£334

Balance Sheet as at 30th June 1978

Endowment Fund as at 30 June 1977	£3412	£3412
Add Donation received during year	5	—
	3417	3412
Add Accumulated revenue as at 30 June 1977 ...	1725	1307
Grants refunded	—	84
	£5224	£5137
Made up of:		
Investments at cost as below	£3011	£3010
Edinburgh Building Society: Capital Account ...	905	905
General Account	1028	916

Paid by Club's general funds on 30 June 1978 ...	490	—
Due by Club's general funds	—	506
	5434	5337
Less grants allocated but not yet paid	210	200
	£5224	£5137

Investments as at 30 June 1978

	Market Value	At cost	At cost
1952 M & G Charifund Income Units ...	£2791	£1000	£1000
£1140 5% Exchequer Stock 1976/78	1124	1000	1000
£440 Conver. Unsecured Loan Stock 1993/98 British Printing Corporation	275	441	440
500 St Andrew Trust Ltd. Ord. 25p	590	570	570
	£4780	£3011	£3010

House Fabric Fund

Summary of accounts for year to 30th June 1978

		Year to 30/6/78	Year to 30/6/77
RECEIPTS			
Balance as at 30 June 1977		£113	£120
Year's rent from Major A. D. Peirse-Duncombe		312	312
British Council for the Rehabilitation of the Disabled : rent and rates to 31 July 1977	£66		
Final rent	53		
		119	210
Half year's rent from Scottish Association of Voluntary Child Care Organisations		120	—
Grant from SOC Revenue account		300	—
Miscellaneous interest		13	8
		£977	£650
EXPENDITURE			
Property burdens	£646		
Less contribution from sub-tenant ...	36	£610	£444
Insurance		156	93
		766	537
On deposit with Edinburgh Building Society	£237		
Add contribution to rates still due from sub-tenant	36		
	273		
Less balance due to Morton Fraser & Milligan WS	62	211	113
		£977	£650

EDINBURGH, 14th September, 1978.—I have audited the foregoing Revenue Accounts for the year to 30th June 1978, 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. Subject to this I certify that in my opinion the foregoing accounts are correctly stated and sufficiently vouched.

(Signed) ROBERT CAVEN,
Chartered Accountant.

REPORT OF COUNCIL

FOR YEAR TO 30 JUNE 1978

Membership On 30 June 1978 the club had 2980 members. During the year 370 new members joined, including 61 juniors and 13 children nominated for family membership. Enrolment and transfers boosted the number of life members to 49, and provided valuable extra working capital for the club. Reduced subscriptions were paid by 358 members over retirement age. In the table, family members are counted as two people. Nominated children pay no subscription.

Year to 30 June	1973	1974	1975	1976	1977	1978
Honorary	4	4	4	4	1	1
Life	14	18	22	29	29	49
Ordinary	2230	2312	2175	2406	2536	2572
Junior	312	317	252	299	282	271
Nominated children	—	—	63	80	98	87
	2560	2651	2516	2818	2946	2980
Change	+189	+91	—135	+302	+128	+34

Branches were asked to consider ways of increasing membership, and the very small growth in numbers—only 34, though adult membership rose by 56—is a matter for concern. Increased rates of subscription for 1978-79 were approved at the annual general meeting in January 1978, to help offset the effects of inflation in the four years since the previous increase, and may be expected to lead to some fall in numbers. All members are urged to do as much as they can to enrol new members and to make sure that existing members renew their subscriptions.

Covenants The number of covenants dropped from 659 to 587, covering 700 members. This followed the decision not to ask those whose covenants had run out to sign new ones until after the increase in subscriptions. Council looks forward to making up the loss, and already there has been an encouraging increase in covenants for the new session. The tax recovered is a very important item in the income of the club.

Deaths Council records with deep regret the deaths during the year of Peter Gunn, who was an honorary member; Frank Elder, one of the founder members of the SOC; and Richard Richardson. Obituaries are being published in *Scottish Birds*.

Finance The accounts show a surplus of £498 for the year. This is better than planned, and much better than seemed possible for most of the year. It was mainly achieved by a late spurt in sales which produced a rise of almost £3000 in the bookshop surplus. This provided 55% of the club's income, compared with 33% from subscriptions. Expenses continued to rise, but some less than expected; and there was a fortuitous

saving from postponing the 1976 Scottish Bird Report to next year. A surplus of just under £100 was made on SOC notelets, sold at meetings during the past two years, and very kindly produced by Dr G. R. Fisher.

Constitution The constitution of the club has been amended many times, and by 1977 parts of it were obscure or out of date. Rather than change only the parts in most need of revision, a completely rewritten text was proposed, incorporating amendments and improved wording. Copies and explanatory notes were sent to all members, and the revised constitution was approved at the annual meeting on 21 January 1978. This meant that Dougal Andrew, who had been honorary treasurer of the house fabric fund since 1959, ceased to be a member of council by reason of that office. He was therefore co-opted to serve as law agent, so that council might still have the benefit of his professional services.

Branches Following recommendations made by council last year, all branches discussed ways of recruiting new members and of retaining their existing ones. Some arranged meetings in addition to those in the main winter syllabus, to encourage particularly members new to bird-watching. A number of branches held social functions during the year; and, as well as raising funds, these helped to maintain the essential club atmosphere of the SOC. It is hoped that other branches will arrange similar functions and reap the benefit of increased local interest and membership.

Council again thanks all those who helped in the various activities of the club throughout the year, and particularly speakers at branch meetings and those who organised and led excursions. The annual weekends in the Solway area and in Argyll were greatly enjoyed by members and friends who attended, and the club is very grateful to those who organised them so well.

Council considered how smaller branches might be represented in rotation at its meetings, as envisaged in the revised constitution, and a proposal will be put to the annual general meeting. It was agreed that the minimum qualification entitling a branch to send its own representative should remain at 50 local members, with a comparable attendance at meetings, and that no change was needed in the list of qualifying branches.

Annual conference In October 1978 the conference will be back to the preferred late autumn date. As an interim step the 30th annual conference and the 41st annual general meeting of the club were held in North Berwick on 20-22 January 1978. About 280 members and guests attended. The return to a location where all the weekend events took place in comfortable surroundings under one roof was welcomed by everyone. Unfortunately, some members were unable to get there because of previous bad weather—the main objection to a January conference—but even those who had to travel further than usual were agreed that the excellent catering and other arrangements at the Marine Hotel were a great improvement on the spread-out facilities of a campus university. An account of this very successful conference appeared in *Scottish Birds* 10: 35.

'Scottish Birds' Four issues, with 160 pages of text and plates, and the index to volume 9 were published during the year. The reduced number of pages continues to reflect the need to contain the cost of the journal, but it is exaggerated by not publishing the 1976 Scottish Bird Report during the year. Council agreed to make a charge for the index, so that those requiring copies bear the cost, rather than have it restrict the limited funds available for *Scottish Birds*. Higher subscriptions paid by libraries and institutions since January 1978 automatically include the index.

Scottish Bird Report When it became clear that the 1976 Scottish Bird Report would not be ready for publication in 1977, it was decided to combine it with the 1977 report. The aim is to get back on schedule by the end of 1978, without having two annual reports in three issues of the journal. Council is extremely concerned at the delay in compiling the 1976 report, and aware of the disappointment this caused to many people. To spread the work of compiling the 1977 report, the local recorders' summaries were collated by the editor, with the help of members in Edinburgh, and divided between three authors, each to deal with part of the species list. Further details will be given in the report, and it is hoped that the new arrangements will overcome the delays of recent years.

Research and fieldwork The Corncrake enquiry, initiated by the Irish Wildbird Conservancy and taken up by the British Trust for Ornithology, was adopted as an official club enquiry and took place during summer 1978; a report will be published. Members took part in the European census of Mute Swans, organised by Malcolm Ogilvie for the BTO and the Wildfowl Trust; and also another breeding census of Great Crested Grebes, to assess damage caused by oiling incidents in the Firth of Forth in spring 1978. A draft report has been received of the club's Crow hybrid-zone enquiry, and its Redwing breeding survey continues. As usual, many members took part in continuing surveys organised by other ornithological bodies, such as the ringing scheme, common bird census, and Golden Plover enquiry of the BTO, wildfowl and goose counts arranged by the Wildfowl Trust, and the Royal Society for the Protection of Birds' beached bird survey.

Conservation Written objections were submitted to two proposed developments during the year. Strong protests against establishment of a mink farm on the important seabird island of Westray were made to the Orkney Islands Council in September 1977, and to the ensuing public local enquiry ordered by the Secretary of State for Scotland and held in February 1978; the Secretary of State decided that planning permission should be withdrawn.

In December 1977 the New Galloway branch reported on proposals to extend and change the layout of a caravan site at the Loch Ken Holiday Centre at Boreland of Parton. The club and other conservation bodies sent objections to the Dumfries and Galloway Regional Council and these were successful, the application being refused on the grounds (i) the proposed development was contrary to the council's policy on caravan sites, being in a Site of Special Scientific Interest and adjacent to an area of great landscape value, (ii) it would be obtrusive and detrimental to the amenity of the area, and (iii) it would prejudice the conservation of wildlife in an area of national importance for wintering and breeding wildfowl.

Endowment fund Council was encouraged to receive ten applications for grants from the endowment fund, many more than usual. In assessing the applications it was decided that, in the absence of special considerations, priority should be given to those for work in Scotland, then those for work on Scottish birds elsewhere, and finally any others. Grants of £460 were approved. Sandy Anderson, who led the Aberdeen University expedition to Mole National Park in Ghana, was given £50. The 1978 Cambridge Norwegian Expedition, led by John Innes and with Keith Brockie a member, was given £100 to study waders—in particular the Purple Sandpiper. Marc Brazil, at Stirling University, was given £50 to assist with travel to Iceland, where he studied Whooper Swans; and Jonathan Hardey received £50 to help with his Peregrine studies in northeast Scotland. Tony Mainwood and others were given £50 towards the cost of boat hire to Foula, where they are studying Storm Petrels.

Three members were given grants to continue work started in earlier years—David Lea (£70) for his study of Storm Petrels, and Andrew Ramsay (£40) for work on Black Guillemots, both on Orkney; and Bob Swann and others (£50) for boat hire and other costs of studies of Manx Shearwaters and Shags on Canna. Reports on the surveys and expeditions will be submitted for publication in *Scottish Birds* or deposited in the reference library.

Scottish Centre The Scottish Centre for Ornithology and Bird Protection continued to be a magnet for visiting birdwatchers from home and overseas, and advice on places to visit was given to many personal visitors, as well as those who wrote in. The SOC Council and committees met in the centre during the year, and branch and informal group meetings took place there regularly during the winter. Committee meetings of the Fair Isle Bird Observatory Trust, the RSPB, and the Isle of May Bird Observatory and Field Station were also held in the centre.

Bookshop The growth of the bookshop continued, with overseas sales showing a marked increase. A printed booklist, giving more information than before, was made possible by revenue from advertising in it, and this undoubtedly stimulated sales, which were up 29% to a formidable total of £50,000. The bookshop manager and the club staff are to be congratulated on their success and on the hard work that goes into keeping the wheels of this enterprise turning smoothly. Once more council is grateful to the BTO for inviting the club to display and sell books at its annual conference at Swanwick.

Library In October 1977 Bill Harper, whose wife is on the staff, took over as librarian, part-time, from Irene Waterston. Bill Harper retired earlier in the year as head of the meteorological office in Scotland and his appointment is warmly welcomed. Council acknowledged its gratitude to Mrs Waterston, and now records its sincere thanks to Mrs Daphne Peirse-Duncombe for her work in the library during the past three years.

The balance of funds set aside for library binding is now used up. The library committee has made proposals, still to be considered by council, for future purchases and binding. Many books, journals and reprints were donated during the year and these are gratefully acknowledged. The library also benefitted from a generous bequest of books and journals to ornithological libraries in Britain by the late Sir Landsborough Thomson.

Club representation Dr Derek Langslow was elected by council as the second SOC representative on the British Section of the International Council for Bird Preservation, following the death of Sir Landsborough Thomson, and council records its gratitude to him and Frank Hamilton for their service in the club. After representing the SOC for five years on the Duck Working Group of the International Wildfowl Research Bureau Dr Roger Bailey intimated his resignation in June, due to pressure of other work, and council is grateful for his work on behalf of the club; his successor has still to be announced.

Secretarial staff As already noted, Bill Harper became librarian in October 1977, and Mrs Peirse-Duncombe gave up her part-time work in the library. In February 1978 Mrs Christine Dunsire left, with good wishes for the future.

Acknowledgments During the year many members contributed to the organisation of the club by serving on council and committees, and helped by leading excursions, taking meetings, arranging fund-raising events and in other ways. Council is grateful to them all for their work in promoting the club and helping its members, and to many others who have helped in less obvious ways to recruit members and at branch functions.

Finally, the SOC is fortunate in having a thoroughly competent and extremely conscientious staff, and council thankfully pays tribute to their essential work in the day by day running of the club.

For the Council,
ANDREW T. MACMILLAN, President.

COUNCIL AND OFFICIALS OF THE CLUB FOR SESSION 42

Hon. Presidents David A. Bannerman, O.B.E., LL.D., Sc.D., F.R.S.E.; Sir Charles G. Connell, W.S., LL.D., F.R.S.E.; Sir Arthur B. Duncan; W. J. Eggeling, C.B.E., B.Sc., F.R.S.E.; George Waterston, O.B.E., LL.D., F.R.S.E.

President Miss Valerie M. Thom.

Vice-President Dr Ivan T. Draper.

Treasurer Maxwell K. Hamilton, C.A.

Law Agent D. G. Andrew, W.S.

Council A. Anderson, J. M. S. Arnott, Miss N. J. Gordon, Mrs H. S. C. Halliday, Dr J. J. D. Greenwood, T. Irving, Dr D. R. Langslow, J. K. R. Melrose, J. Mitchell, Hon. D. N. Weir. **Young Members** J. M. Dickson, I. H. Leach.

Branch Representatives to Council A. Anderson (Aberdeen); J. K. R. Melrose (Ayr); R. T. Smith (Dumfries); B. M. Lynch (Dundee); L. W. G. Alexander (Edinburgh); D. L. Clugston (Glasgow); R. H. Dennis (Inverness); Mrs H. S. C. Halliday (New Galloway); J. S. Wiffen (St Andrews); R. J. Young (Stirling).

STAFF

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

Editor and Bookshop Manager D. J. Bates.

Membership Secretary Mrs R. D. Smillie.

Librarian W. G. Harper.

Bookshop and Clerical Mrs H. L. Harper, Mrs D. J. Ridley, Mrs M. Suess.

BRANCH AND GROUP OFFICE BEARERS

Aberdeen Chairman, B. Stewart; Vice-Chairman, S. M. D. Alexander; Secretary, A. Duncan; Committee, T. D. H. Merrie, G. Rebecca, P. Shaw.

Ayr Chairman, J. K. R. Melrose; Vice-Chairman, R. H. Hogg; Secretary, J. Miller; Committee, J. Burton, Dr R. Hissett, Mrs E. M. Hissett, D. A. Smith.

Dumfries Chairman, J. Skilling; Vice-Chairman, R. T. Smith; Secretary, Dr N. E. Armstrong; Committee, J. W. Barclay, Dr E. C. Fellowes, A. G. Gibson, Miss A. MacDonald.

Dundee Chairman, D. B. Thomson; Vice-Chairman, B. M. Lynch; Secretary, Dr K. M. Watson; Committee, F. V. Ellmore, P. A. Kemp, Mrs A. Noltie, J. Rodger.

Edinburgh Chairman, L. W. G. Alexander; Vice-Chairman, I. V. Balfour-Paul; Secretary, Mrs M. Adams; Committee, J. M. Dickson, Mrs E. Ferro, P. W. G. Marriott, J. B. Murray, S. R. da Prato.

Glasgow Chairman, D. L. Clugston; Vice-Chairman, D. N. Brooks; Secretary, D. C. Shenton; Committee, J. Anderson, Mrs F. Dunlop, H. Galbraith, R. M. C. Lambie.

Inverness Chairman, R. H. Dennis; Vice-Chairman, R. L. Swann; Secretary, Miss E. M. Campbell; Committee, J. Carruthers, Mrs I. Grant, J. K. Lindsay, D. B. McGinn.

New Galloway Chairman, Mrs H. S. C. Halliday; Vice-Chairman, A. D. Watson; Secretary, Dr G. A. Fleming; Committee, J. Aitken, Miss J. E. Howie, Lady Anne Sinclair, Rev. G. Yeo.

St Andrews Chairman, J. S. Wiffen; Vice-Chairman, Miss D. E. Rowling; Secretary, Miss M. M. Spires; Committee, Dr R. W. Byrne, Mrs J. A. R. Grant, P. W. Kinnear, Lt. Cdr. E. F. B. Spragge.

Stirling Chairman, R. J. Young; Vice-Chairman, H. Robb; Secretary, A. B. Mitchell; Committee, C. E. Barth, R. L. Gooch, Miss E. M. Lapthorn, A. D. McNeill.

Thurso Chairman, Mrs P. M. Collett; Secretary, S. Laybourne.

Wigtown Chairman, Dr P. G. Hopkins; Secretary, G. Sheppard; Committee, D. L. Irving, G. Shaw.

COMMITTEES

Management Miss V. M. Thom (Chairman), D. G. Andrew, J. M. S. Arnott, Dr I. T. Draper, Miss N. J. Gordon, M. K. Hamilton.

Library Dr George Waterston (Chairman), Ritchie Seath (Hon. Librarian), D. L. Clugston, Dr J. J. D. Greenwood, A. T. Macmillan, P. W. G. Marriott, Dr I. D. Pennie, Mrs Irene Waterston.

Editorial A. T. Macmillan (Chairman), J. M. S. Arnott, D. L. Clugston, R. H. Dennis, F. D. Hamilton, S. R. D. da Prato, Miss V. M. Thom.

Research To be appointed (Chairman), R. H. Dennis, Dr I. Newton.

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 MEMBER

Mrs Irene Waterston.

NOTICES

EDINBURGH BRANCH SECRETARY

Please note that Mrs M. Adams' telephone number is now 031-339 4320.

PROJECTOR

Over the years a number of the old type 2½" x 2½" slides have been donated to the club, and these are kept at 21 Regent Terrace. However, the SOC does not own a suitable projector for these slides and those wishing to view them cannot do so adequately. If any member owns, or knows of a projector which can be donated to the club, will he or she please contact the club secretary at 21 Regent Terrace, Edinburgh EH7 5BT (031-556 6042).

SUMMER EXCURSIONS

Details of summer excursions arranged by branches are published on a separate sheet enclosed with this number of the journal.

ANNUAL CONFERENCE - 1979

The 32nd annual conference and the 43rd annual general meeting of the club will be held at the Marine Hotel, North Berwick, East Lothian, during the weekend 26/28 October 1979. The programme with full details will be sent to members with the summer number of the journal in mid-June.

In fairness to all members, bookings can only be made on the form

sent out with the programme; also the Marine Hotel has been instructed only to accept reservations made on a hotel booking form which is obtainable from the club secretary at the time of booking for the conference. It is regretted that advance bookings for the conference and the Marine Hotel cannot be accepted.

NORTHERN MEETING

In response to requests from members living in the north of Scotland, council has agreed that there should be an additional meeting of the club in 1980. A firm decision has yet to be made, but it is expected that the meeting will be held in Inverness towards the end of April. Full details will be published in the journal later this year.

BOOKS AND JOURNALS NEEDED BY THE LIBRARY

There are gaps in the runs of journals and of books in the club's library at 21 Regent Terrace. Some of these, mostly of Scottish natural history journals or by Scottish authors, are listed below :

Scottish Naturalist 1883-91.
Transactions of the Edinburgh Field Naturalists' & Microscopical Society 1913-15.
Proceedings of the Royal Physical Society for the promotion of Zoology and other branches of Natural History, Edinburgh; any before vol 18 No 3 (1911), any after vol 23 No 2 (1948), also vol 19 Nos 1-4, 7, 9; vol 20 Nos 1-4; vol 21 No 5.
Edinburgh Journal of Natural History and of the Physical Sciences vol. 2, 1839-40.
Edinburgh Journal of Natural and Geographical Science, any after vol 2 (1830).
Transactions of the Stirling Natural History Society vols 4, 6-9, 15, 48, 50, 53, 58, 60 and any after vol 61
Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society 1862/63, 1864/67, 1876/80, also vol 33 (1954/55) and any after vol 34 (1955/56).
Transactions of the Inverness Scientific Society and Field Club vol 1 (1876-80) and any after vol 9 (1925).
The Zoologist 1850-51, 1856, 1868-69, 1879, 1881, 1884-87, 1910, 1912-16.
The Naturalist 1891, 1892, 1904, 1906, 1907 and any after 1922.
Seton Gordon's *Birds of the Loch and Mountain.*
Seton Gordon's *Edward Grey of Fallodon and his Birds.*

If any member or friend of the club could donate any of these wanted journals or books the librarian would be most grateful.

He also asks the editors of all local bird reports, newsletters or natural history journals to consider sending a copy to the library if they are not already doing so. More generally the club welcomes donations of bird books and ornithological journals both for its reference library and for its lending library, or for sale to fund the purchase of books needed for the library.

Conference News

SOC conference, North Berwick, October 1978 Gamebirds were the main theme—not every birdwatcher's cup of tea perhaps, but bread and butter to some professional ornithologists, such is shooting's economic importance. Sportsmen kill to enjoy rather than to eat; nevertheless the lectures were meaty and gave us plenty of food for thought.

Art Lance discussed the long history of Red Grouse population studies

and demonstrated some new-fangled electronic gadgetry. He indicated how numbers were limited by the birds' own social behaviour—dominant birds displacing their rivals—rather than by disease, predation or even starvation.

Dick Potts investigated Partridge numbers, illustrating his results with unusually beautiful graphs, and showed how the recent decline was related to pesticides, but that unlike grouse, Partridge go up when predators are kept down. We seemed to be back where we started!

Even Capercaillie can be made to pay their way, said Bob Moss in his admirably pungent style, so long as they are in the richer Caledonian forest. The new plantations are less productive—interesting because the species' spread was undoubtedly aided by planting. Why are cocks so much bigger than hens, especially if larger size is a disadvantage during a food shortage? Because it seems the hens really prefer the heavies, even queueing up for them at the lek—clearly no place for the prudish! So there is no point being the right size to live to a ripe old age if no one wants your offspring.

On Sunday Bob McMillan described the comings and goings at Pied Wagtail roosts, and Alan Walker revealed how the recent moult migration of Canada Geese from England to the Beauly Firth is still developing. Stan da Prato on wader feeding ecology—studied just outside the conference centre as it happened—admirably showed how far an amateur could go in a complex field. Quite a long way if you clearly define your aims and methods, and put in a lot of time. Many species with adaptations for a particular kind of food often feed in the "wrong" way—for instance although Curlews are fitted for probing in deep mud they will feed from rock surfaces too—and he warned against too glib an interpretation of apparent specialization.

The conference was nicely rounded off by Gordon Hollands' excellent film 'Halcyon', a comprehensive portrayal of Europe's wetland birds, all the more remarkable for being an amateur production.

D. J. BATES

Scottish ringing conference, Aberdeen, November 1978 A good mix of amateurs and professionals contributed 15 talks over two days, and from such a wide choice I can only mention a few.

Many of the Fulmars ringed in Orkney by George Dunnet and company since 1950 are still breeding there. With an annual adult death rate of only 3%, life expectancy is currently estimated at about 45 years, but with no sign yet of mortality increasing with age, unlike humans, how long might some Fulmars live, and how many must be ringed before we find out?

The importance of ringers obtaining as much useful data as possible from every bird handled was stressed by Chris Mead, who illustrated the point well with a series of slides showing how to age various species by their state of moult. One of the least attractive habitats to work in must be rubbish tips, but Pat Monaghan has persevered to discover more about Herring Gull dispersal. Bob Furness pointed out where more effort is needed to expand our knowledge of seabird movements, and he even suggested the possibility of radio marking large birds and tracking them by satellite.

Other topics discussed were Canada Goose moult migration, colour ringed Ospreys, Dipper moult, co-operative wader studies, Pied Flycatchers in nestboxes, colour marked Mute Swans, and Dotterels, whose colour ringed chicks have oddly never been sighted on the breeding grounds in subsequent years. There was an opportunity too to see the storage and analysis of ringing data in the university computer.

D. J. BATES

World Pheasant Association, woodland grouse symposium and workshop, December 1978 In this Symposium at Culloden House, Inverness, workers from 14 countries read or submitted 31 papers on status, ecology, study methods, behaviour and management of, principally, Common Capercaillie or Black Grouse, with a few papers on Black-billed Capercaillie, Hazel Hen, Caucasian Black Grouse and North American species. The historic presence of Prof Cheng Tso-Hsin and Dr Lu Tai-Chun of the Peking Institute of Zoology was welcomed on behalf of international conservation by Prof Kai Curry-Lindhal. Prof Cheng spoke on the grouse family in China and later answered many questions on the pheasants, which are his own specialty, and on other aspects of Chinese ornithology.

Population declines in Capercaillie and Black Grouse were very commonly reported and were mostly attributed to habitat impoverishment. During Dr Franz Mueller's meticulous 15 year study of Capercaillie lekking behaviour in West Germany it was poignant that the study population fell from 24 birds to one. The isolated Scottish Capercaillie population of several thousand birds occupies a limited range at relatively high density and may, at present, be more or less stable. It cannot be immune from the pressures of changing forest management which are blamed for declines elsewhere and these declines have increased demand for shooting in Scotland. Moss, Weir and Jones emphasized the importance of 'granny' Scots Pines and of Blaeberry in good Scottish Capercaillie habitat, the semi-natural pine forest, and outlined the basis of conservative shooting recommendations for such areas. Jones is studying Capercaillie in the poorer habitat of planted forest and his work could form the basis of shooting recommendations for those low density areas.

The symposium ended with excursions to planted and semi-natural Capercaillie habitat at Cawdor and in Glentanar. For the few of us involved in Capercaillie studies in Scotland, the meeting strengthened our impression that the economic incentive of shooting rentals is critical in arguing to modify forest management sufficiently to permit substantial populations to survive. The proceedings will be a valuable reference (to be published by the World Pheasant Association, Daws Hall, Lamarsh, Bures, Suffolk CO8 5EX) and the association, with their co-sponsors, the ICBP, Royal Scottish Zoological Society and the Game Conservancy, are to be warmly congratulated.

DOUGLAS WEIR

Current Notes

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

This summary includes late spring, but mainly covers autumn to midwinter. Autumn was gale-swept, but American birds and especially seabirds were not as widely numerous as might have been expected in view of reports from further south. Perhaps this reflects observer scarcity on our western seaboard north of the Clyde. Is there another Cape Clear or Scilly awaiting discovery in the Western Isles ? Passerine arrivals were also sparse, principally thrushes and chats in the Northern Isles about 30 Sep and a brief Redwing rush in mid October. The Little Stint influx was a bonus, as was the abundance of Short-eared and Long-eared Owls. Ring-necked Ducks, Surf Scoters and Gyr Falcons are flourishing.

White-billed Diver Fair Isle crossing 6 Jun; 1 oiled Sullom Voe (Shet)

Jan (other casualties given below). **Slavonian Grebe** 150 Gosford (E Loth) 14 Jan. **Great Shearwater** Aug-Sep: Fair Isle (5), Noss Head (Caith); Turnberry (Ayr) (2); Corsewall Pt (Wig). **Manx Shearwater** 4000 Corsewall Pt 3 Sep; 1 Girdleness (Kinc) 20 Jan; Balearic Shearwater *mauretanicus* several St Abbs (Ber) Aug-Sep, 1 Corsewall Pt 3 Sep. **Little Shearwater** Barns Ness (E Loth) 5 Aug. **Storm Petrel** 150 Mull Sep. **Leach's Petrel** several Ayrshire Aug-Sep; 15 Corsewall Pt 3 Sep; 16 Mull Sep. **Bittern** Jan: 1 dying Blairgowrie (Perth); 1 L Lomond. **Little Bittern** L Lomond 5 Jun. **Great White Egret** Strathbeg (Aber) late Jun. **White Stork** Inverewe (Ross) 1 Aug. **Spoonbill** Strathbeg Jun; Campbeltown (Arg) 16 Oct; Hunterston (Ayr) Nov. **Whooper Swan** bred W Scotland. **Bean Goose** Fair Isle 28 Sep; 2 shot (out of 8-10 grey geese) Aboyne (Aber) 12 Jan; wintering flock Castle Douglas (Kirk). Green-winged **Teal** *carolinensis* Guardbridge (Fife) Dec. **Blue-winged Teal** S Uist 24 Jun; 3 Balranald (N Uist) 10 Oct. **Ring-necked Duck** 1-2 Shet May; Lewis (O Heb) Jun; trapped Fair Isle 9-16 Oct; 1 wintered Irvine (Ayr). **Ferruginous Duck** presumed hybrid x Pochard Duddingston (Midl) 27 Nov. **Surf Scoter** Handa (Suth) May; 2-3 Fraserburgh (Aber) Oct; 1 resident Spey Bay (Moray), 3 in Jun, 5 in Nov, 8 in Jan with 10,000 scoters, **Common:Velvet** ratio 10:1. **Red Kite** Portsoy-Cullen (Banff) 28 Dec; Drimmin (Arg) Jan. **Short-toed Eagle** Islay 1 Nov (1st British?). **Marsh Harrier** Jun-Sep: Fair Isle (2); Strathbeg; Rosyth (Fife); E Loth; New Cumnock (Ayr). **Rough-legged Buzzard** N Uist Apr, Jun; Forvie (Aber) Aug, Jan; Ayr Aug. **Red-footed Falcon** Skerries (Shet) 20 May. **Hobby** Dornoch (Suth) 20 Aug. **Saker Falcon** Fetlar (Shet) May. **Gyr Falcon** Ronas Hill (Shet) 13 May; several SW Scotland Oct-Jan. **Spotted Crake** S Uist 28 May; Lewis Jun; Insh (Inv) summer; 1 dead Strathbeg 12 Nov. **Corncrake** c170 calling Uists-Benbecula summer. **Crane** 2 summered Orkney; Newburgh (Aber) Aug-Feb. **Little Stint** influx 6-10 Sep: 82 Sumburgh (Shet); 30 Fair Isle; 28 Wick (Caith); 72 Aberlady (E Loth). **Temminck's Stint** 2 Musselburgh (Midl) 15 Sep. **White-rumped Sandpiper** N Ronaldsay (Ork) autumn. **Baird's Sandpiper** Tongue (Suth) 14 Aug. **Pectoral Sandpiper** Rhum May; Nesting (Shet) 4 Aug. **Curlew Sandpiper** small influx with Little Stints. **Buff-breasted Sandpiper** Walls (Shet) 28 May. **Ruff** 90 Unst, 150 Sumburgh Aug. **Jack Snipe** N Uist 30 Jun. **Greater Yellowlegs** Strathbeg Sep. **Lesser Yellowlegs** S Uist Jun. **Wilson's Phalarope** New Cumnock 6-7 Sep. **Grey Phalarope** Lerwick and Whalsay (Shet) Sep; Whitehills (Aber) 9-12 Dec. **Pomarine Skua** 139 Balranald 11-23 May. **Long-tailed Skua** 1-2 Little Minch 30 Jun; Sumburgh 19 Aug; Fetlar 17 Sep; Fraserburgh 25 Aug; Sound of Raasay (Inv) 25 Aug. **Great Skua** 3 Girdleness 20 Jan. **Laughing Gull** L Ken (Kirk) from 22 Sep. **Sabine's Gull** Scurdyness (Angus) Aug; 2 Corsewall Pt Sept; Musselburgh 30 Sep; Turnberry 5 Oct. **Sandwich Tern** E Loth Jan. **Brunnich's Guillemot** freshly dead St Cyrus (Kinc) 14 Jul. **Little Auk** 8 Girdleness 20 Jan; 5+ Forth (Loth) late Jan. **Snowy Owl** 2+ ♂♀ Shet summer. **Short-eared Owl** 30 Fair Isle 15 Oct. **Nighthawk** trapped Kirkwall (Ork) 12 Sep. **Alpine Swift** Ardtreck Pt (Skye) 23 Jul. **Bee-eater** Endrick Mouth (Dunb/Stir) 9-11 Oct. **Hoopoe** Yell (Shet) 7 Oct; Glen Finglas (Perth) Nov. **Bimaculated Lark** Mull (Arg) 29 Aug. **Short-toed Lark** Fair Isle 23 Sep. **Shore Lark** Skerries (Shet) 12 Oct; 3 Tyninghame (E Loth) Feb. **Richard's Pipit** Skerries 23 Sep; 13+ Fair Isle 29 Sep-15 Oct. **Pechora Pipit** Fair Isle 8 Sep. **Red-throated Pipit** Papa Westray (Ork) 4 Jun. **Citrine Wagtail** Skerries 28 Sep; Fair Isle 14-20 Oct. **Waxwing** only reports: 2 Scalloway (Shet) 28 Oct; Fair Isle 12 Oct; few NE Scotland Dec-Jan; Mull Jan. **Robin** 160 Fair Isle 30 Sep. **Nightingale** Fair Isle 24 Jun; Fetlar 30 Sep. **Bluethroat** only 5 Shet-Fair Isle Sep-Oct. **Redstart** 65 Fair Isle 1 Oct. **Whinchat** 80 Fair Isle 9 Sep; 1 Gladhouse (Midl) 25 Nov. Siberian **Stonechat** *maura/stejnegeri* 3 Whalsay 30 Sep-21 Oct; Fair Isle 14 Oct. **Blackbird** 400+ Ackergill (Caith) 12 Nov. **Eye-browed Thrush** Lochwinnoch (Renf) 22 Oct. **Black-**

throated Thrush Fair Isle 17 Oct. **Song Thrush** 150 Whalsay and 230 Skerries 30 Sep; 300 Fair Isle 1 Oct. **Redwing** 1500 Kergord (Shet) 1 Oct; 800 Skerries 12 Oct; 900 Fair Isle 9 Oct, 5000 on 12th; 1970 Barns Ness and 1000 North Berwick (E Loth) 11 Oct. **Lanceolated Warbler** 2 Fair Isle 8 Sep-1 Oct; Skerries 23 Sep; one caught in rig bathroom Forties Field, 120 mls (200 km) E of Fraserburgh, 14 Oct, released Aberdeen. **Aquatic Warbler** 2 Fair Isle 14-17 Aug. **Reed Warbler** 17 Fair Isle 29 Sep. **Icterine Warbler** Skerries 19 Aug, 7 Sep; Islay (Arg) 26 Aug. **Greenish Warbler** Fair Isle 4 Aug. **Arctic Warbler** Sumburgh 1-2 Sep; Wick 7-8 Sep; Fair Isle 28 Sep; Unst (Shet) 1 Oct. **Pallas's Warbler** Saxavord (Shet) 15 Oct. **Willow Warbler** 1000+ Isle of May 14 Aug. **Two-barred Crossbill** Glen Feshie (Inv) 29 May. **White-throated Sparrow** Fair Isle 17 Jun. **Snow Bunting** influx NE Scotland Feb, 1500 Macduff (Banff). **Rustic Bunting** Oct: Fetlar; Fair Isle (2); N Ronaldsay. **Little Bunting** Skerries 2 Oct; Fair Isle 30 Sep-2 Oct. **Yellow-breasted Bunting** Skerries 7 Sep; 4 Fair Isle 5-10 Sep. **Black-headed Bunting** Strand (Shet) Jun-Jul; Fair Isle 11 Aug. **Painted Bunting** Yell 9-27 Jul.

D. J. BATES

SULLOM VOE OIL SPILL

The fuel oil spilt when the tanker "Esso Bernicia" struck a jetty at the new Sullom Voe Oil Terminal just before New Year has now killed at least 3700 birds. Out of a total of 49 species, several have been particularly badly hit, as shown by the following numbers of dead birds counted by NCC and RSPB staff and local volunteers up to 3 March:

Great Northern Diver	155	Eider	552
Shag	644	Guillemot	345
Long-tailed Duck	307	Tystie (Black Guillemot)	615

The Great Northern Divers and Tysties in particular must represent substantial proportions of their Shetland wintering populations. With oil still present on several stretches of shore, and with breeding birds such as Red-throated Divers and auks beginning to return, it is feared that many more birds may yet be killed by oil being washed off the rocks.

Already this spill has reduced the present bird population of Sullom Voe to a handful and it highlights serious inadequacies in the facilities and clean-up capabilities at the port. Unfortunately there is probably little that can be done to clean up the last remnants of this oil, but members are invited to take up the broader issues with their MPs.

From the beginning of December to mid March a further 2800 oiled birds, mostly auks, have come ashore on our east coasts from Shetland to the Firth of Forth. A spill which killed 450 birds in Orkney and Caithness before Christmas was identified as being from tanker washings, and in the first three weeks of February a further 460 auks were affected on the northern isles of Orkney. The fact that tanker traffic has increased with the opening of the Sullom Voe Terminal at the end of November can hardly be regarded as merely coincidental.

DAVID MINNS, RSPB

LOCAL RECORDERS

Shetland (except Fair Isle) R. J. Tulloch, Lussetter House, Mid Yell, Shetland.

Fair Isle I. S. Robertson, Bird Observatory, Fair Isle, Shetland.

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Ross-shire (Black Isle only), Inverness-shire (within 18 miles of Inverness) M. I. Harvey, Clach Bhan, Loaneckheim, Kiltarlity, Inverness-shire.

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Dunbartonshire, West Stirlingshire, Renfrewshire I. P. Gibson, Arcadia, The Glen, Howwood, Renfrewshire.

Lanarkshire H. Galbraith, 96 Neilsten Road, Paisley, Renfrewshire.

Ayrshire, Arran, Bute R. H. Hogg, Schoolhouse, Crosshill, Maybole, Ayrshire, KA19 7RH.

Dumfriesshire R. T. Smith, Applegarthtown, Lockerbie, Dumfriesshire, DG11 1SX.

Kirkcudbrightshire, Wigtownshire A. D. Watson, Barone, 54 Main Street, Dalry, Castle Douglas, Kirkcudbrightshire, DG7 3UW.

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Papers, longer articles and short notes

1. The high cost of production and distribution means that it is of the utmost importance that contributions are concise, interesting and readable to justify their publication. They should be typed on one side of the sheet only, in duplicate, with double spacing and wide margins.

2. Authors are urged to consult recent issues of *Scottish Birds* for style of presentation, in particular of headings, tables and references. Headings should not be in capitals nor underlined. Tables and figures must be designed to fit the page. Tables should be used sparingly and be self explanatory, and, like figure captions, typed on a separate sheet.

3. Short notes, if not typed, must be clearly written and well spaced.

4. English names of species (but not group names) of birds, other animals and plants, except domestic forms, have initial capitals for each word, except after a hyphen. English names and sequence of birds follow Voous (1973-7) 'List of recent Holarctic bird species' (*Ibis* 115: 612-638; 119: 223-250, 376-406). Scientific names are generally unnecessary for species in this list but they are required (underlined, with no brackets) for subspecies, species not in the list, and for other animals and plants, except domestic forms, where these receive significant mention.

5. Proofs are sent to all contributors and these should be returned without delay. Authors of papers and longer articles are entitled to 25 free copies of the journal but these must be requested when returning proofs. Extra copies can be supplied at cost.

6. Illustrations of any kind are welcomed, whether alone or to illustrate an article. Drawings and figures should be up to twice the size they will finally appear, in Indian ink, neatly lettered, on good quality paper separate from the text. Photographs, either glossy prints or colour transparencies, should be sharp and clear with good contrast.

Scottish Bird Report

1. Records should be sent to the appropriate local recorders, a list of whom is published regularly, but in cases of difficulty they can be forwarded by the editor.

2. These records should be on one side of the sheet only, well spaced and in species order, following the Voous sequence (see 4. above). The only exception is that Aberdeenshire and north Kincardineshire records should be in place and date order. Observers should consult previous reports for the sort of information required. To avoid duplication of records by the recorders, names of other observers present should be given where appropriate.

3. Notes for the year should be sent promptly, generally in early January, but some recorders prefer more frequent records and regular contributors are asked to consult local recorders about this. Reports of occasional visits to areas outwith the observer's regular territory, such as holiday lists, should usually be sent to recorders as soon as possible. Records of rarities, including species only locally rare, should be sent to recorders without delay. The editor invites short notes on rarities for publication, with any illustrations, up to the third Scottish record or after a long gap since the previous occurrence.

4. The editor will be glad to receive, preferably via the local recorders, records of special interest for publication in Current Notes. Please send them at the end of March, June, September and December for publication in the issues following.

5. To save recorders' (often considerable) time and expense, correspondents should enclose a stamped addressed envelope or indicate that no acknowledgment is required.

THE SCOTTISH ORNITHOLOGISTS' CLUB

THE Scottish Ornithologists' Club was formed in 1936 and membership is open to all interested in Scottish Ornithology. Meetings are held during the winter months in Aberdeen, Ayr, Dumfries, Dundee, Edinburgh, Glasgow, Inverness, New Galloway, St Andrews, Stirling, Thurso and the Wigtown District at which lectures by prominent ornithologists are given and films exhibited. Expeditions are organised in the summer to places of ornithological interest.

The aims of the Club are to (a) encourage the study of Scottish ornithology and to promote an interest in wild birds; (b) co-ordinate the activities of Scottish ornithologists; (c) encourage ornithological work in Scotland; (d) encourage conservation of Scottish birds and protection of threatened and rare species; (e) hold meetings for discussion and to arrange ornithological field meetings, and (f) appoint local recorders and publish material relating to Scottish ornithology, including *Scottish Birds*, the club journal.

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Scottish Birds, which is published quarterly, includes papers, articles and short notes on all aspects of ornithology in Scotland. The club also publishes the annual Scottish Bird Report.

Application for Membership form, copy of the Club Constitution, and other literature are obtainable from the Club Secretary, Major A. D. Peirse-Duncombe, Scottish Centre for Ornithology and Bird Protection, 21 Regent Terrace, Edinburgh, EH7 5BT (tel. 031-556 6042).