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Two new reserves (Skinflats, near Grangemouth and Marwick Head, Orkney) were announced recently bringing the total in Scotland to 23 reserves covering 17,500 acres.

MEMBERS GROUPS

With over 12,000 members now in Scotland, more and more wish to come together, not only to enjoy themselves and increase their knowledge but to assist the RSPB in a positive way. Local Group outings have ranged as far afield as Rhum and the Solway, while members have helped with tern and peregrine protection schemes and worked on reserves. There are now 11 Groups in Scotland, with new ones in Buchan, Kirkcaldy and Hamilton joining the established ones in Helensburgh, Glasgow, Dumfries, Dundee, Edinburgh, Aberdeen, North Ayr and Dunfermline.

FILMS

The 1976 programme of RSPB films has been shown throughout Scotland this winter in more venues than ever before. They appear to have been well received though attendance at some shows has been hit by the weather. The 1977 films include a major new film on the Hebrides as well as films about reserves and southern heathland.

* * *

APPEAL

The RSPB £1m Appeal ends in December 1977. Over half has been raised but £½m has already been committed to reserve purchases, including the pinewoods at Loch Garten. Please give a donation to help us reach our target.

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CONTENTS OF VOLUME 9, NUMBER 5, SPRING 1977

	<i>Page</i>
Wildlife potential in the Cairngorms region (Adam Watson)	245
Short Notes	
Weight increases and behaviour of Wrynecks on the Isle of May (Derek R. Langslow) ...	262
Further notes on a long-established Treecreeper nest site (D. Macdonald)	267
Dipper removing lining from used nest (C. M. Morrison)	268
Reviews	
Evolution Illustrated by Waterfowl by David Lack (J. J. D. Greenwood)	269
A Guide to Bird-Watching in Europe by James Ferguson-Lees, Quentin Hockliffe and Ko Zweeres (R. J. Raines)	270
Current Literature	271
Notice and Requests for Information	271
Scottish Ornithologists' Club	272
Branch and Group News	282
Current Notes	283
Correction	284

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Volume 9 No. 5

Spring 1977

Edited by D. J. Bates

Wildlife potential in the Cairngorms region

ADAM WATSON

(Plates 21-24a)

Introduction

The object of this paper is to assess the present value of the Cairngorms region for wildlife, to show that the present value is poor compared with what was once there and could be there again, and to suggest the management needed for achieving the full potential in future.

The Cairngorms region refers not just to the massif of Am Monadh Ruadh between Aviemore and Braemar, but includes Strath Spey and ground east of the A9 road, stretching north to Grantown and Tomintoul, east to Aboyne, and south to Blairgowrie. As this paper formed part of a lecture to the 1976 Scottish Ornithologists' Club conference, it gives more examples on birds than might be justified by its general title. Nevertheless, it does concentrate mainly on more general issues, as these are fundamental in conserving all the wildlife, including birds. It emphasizes principles and not specific details of management. Such details can be agreed only on a local basis, after managers have considered the present characteristics of each site and past local experience of it. To save space and make the paper more readable, I will mention only a few key references; Nethersole-Thompson and Watson (1974) give a fuller set. As most readers will be familiar with the geography of the area, maps have been omitted.

It is useful to imagine the wildlife of the Cairngorms as a resource in some distant country, free from human constraints such as who owns the land or which local-government districts or regions meet there. It then becomes easier to think objectively not just about the national or international value of what is there, but about what could be there. One can next consider the human constraints, asking how land-use practices, land ownership, and other kinds of human authority over the area (such as local government, public bodies) prevent the conservation aims for wildlife from being achieved. Finally, one can suggest a structure of organisation for realizing the wildlife potential, and can list the management policies needed to achieve this. The nation can choose to remove the human

constraints partially or wholly, or leave things as they are. The outcome will be determined by what conservation aim Scotland accepts, and how far it wishes to go towards achieving that aim. The conservation aim in this paper recognizes the national interest by putting recreation involving the conservation of nationally outstanding wildlife and scenery first, and traditional land uses of only local importance second, not the other way round as at present.

The importance of habitats, man, wilderness and research

Wildlife conservation increasingly hinges on conserving the habitats upon which the wildlife depends. For instance, the RSPB recently bought part of Abernethy Forest because it is a fine pine forest, not because very rare birds live there. We must also consider man, as habitats and birds themselves are greatly affected by man's land use and other activities. Furthermore, man gets much benefit and enjoyment from wildlife, including his appreciation of the places where the wildlife occurs. In the Cairngorms, this often means the experience of enjoying wild landscapes and wilderness, free from man-made objects. For modern urban man, it includes the enjoyment, which many now value, of going to places with few or no other people in sight.

Conserving a rare, cliff-ledge plant may require only a tiny patch to be managed. A larger area is necessary for the population of an uncommon insect, and even larger for a boreal forest community. A Red Deer *Cervus elaphus* has such a big home range that a conservation policy involving deer management will not succeed unless it includes a huge area, at least as big as that home range. Golden Eagles also have very large ranges. The Cairngorms National Nature Reserve, though said to be Europe's biggest, is not big enough to ensure the eagles' safety, as every pair nesting in the reserve goes outside. Such species require areas so large that they include nearby country which may not in itself be of high conservation value, even though frequently valuable as wilderness. Hence wildlife and wilderness in the Cairngorms cannot be separated. Nor should we try; the primary importance of both is that they are of great interest for human recreation.

Of secondary importance is their value for research, which also interests many people. The Cairngorms region includes some fairly natural areas, few of which remain in western Europe. These are valuable for research on natural processes such as the regulation of animal populations and the composition of plant communities in relation to climate. It is internationally important to keep sample areas of natural or semi-natural ground for research, so as to answer the many problems about how best to manage land or avoid polluting

our environment and ourselves. Research in a fairly natural area like the Cairngorms is also important nationally, for assessing such an outstanding wildlife properly, managing it better, and developing its full potential in future.

The physical background

What is so unusual about the Cairngorms region that it supports such notable wildlife? Being the biggest block of high ground in Scotland it also has the largest area with an arctic-alpine climate. Continents support more species and habitats than countries, and big islands more than small islands. The same principle holds for areas of different size within an island. Thus the Cairngorms have more arctic-alpine species and habitats than the smaller hill ranges. Also this region in the centre of Scotland gets a more continental climate than the coast. With the warmer summers and more sheltered valleys, trees thrive better than at the coast and grow to a higher altitude, up to about 2,000 feet.

The Cairngorms have had a complicated glacial history. The ice cut many corries with cliffs and lakes. Glacial deposits on the lower ground were built into numerous dry hillocks and ridges that dammed up lakes and bogs. Rivers from melting ice tore out many cliffs that now lie on dry hillsides, offering nest sites for birds of prey on otherwise smooth moorlands. Further variety came from later weathering of cliffs into screes, and from rivers cutting out gorges and depositing fine alluvial soil in valley bottoms.

The Cairngorms region has a great mixture of rocks. Although only one rock—acidic granite—makes up the main massif of Am Monadh Ruadh, a complex arrangement of lime-rich rocks such as limestone and epidiorite surrounds it, mixed with the granite. The soils from these rocks are also varied, supporting a great variety of vegetation, for instance the unusual communities of arctic-alpine plants on the calcareous rocks of Caenlochan and Glen Clova.

We need to discuss what is outstanding about the present wildlife and the threats to it, what could be there and the land-use practices and conflicts that prevent this future potential being realized, and what we need to achieve the future potential.

What is outstanding about the present wildlife?

Several kinds of wildlife are unique for Scotland (Nethersole-Thompson and Watson 1974). Most important is the vegetation. On the arctic-alpine ground, the Cairngorms have the most extensive snow-patch vegetation in these islands, with many plant communities whose composition varies according to how long the snow lies. They also have the biggest

plateaux covered by granite grit and studded with *Juncus trifidus*, a common species in the Arctic. Plateaux with more soil, long snow-lie, or damper ground support vast stretches of continuous alpine turf. The more fertile western hills, as at Carn Ban Mor and Drumochter, have a soft turf of the moss *Racomitrium lanuginosum* and the sedge *Carex bigelowii*, whereas the drier eastern hills such as the Glas Maol have less moss and more lichen; both types occur more extensively than anywhere else in Scotland. The mossy flushes, where streams spread out on flat ground, are also unique in this country for extent and variety. So are the ungrazed cliff ledges, which support a large number of species on diverse ground ranging from the acidic granite walls of Am Monadh Ruadh to the lime-rich cliffs of Clova. The arctic-alpine heaths, dominated by Blaeberry *Vaccinium myrtillus* and Crowberry *Empetrum hermaphroditum*, but with much local variety, cover bigger tracts of hill slope, plateau and corrie than in other parts of the Highlands.

There is an unusual variety and number of high, arctic-alpine and moorland lochs, and of streams, rivers and riversides at all altitudes; preliminary surveys show interesting vegetation there. The Cairngorms region also contains the most varied and largest block of moorland vegetation dominated by Heather *Calluna vulgaris* in Scotland, as well as a great variety of other moorland vegetation on locally varying patches of wet ground, fertile soil, peat, and cliff-side.

The region has the most extensive and varied boreal forests of Scots Pine *Pinus sylvestris* and birch *Betula* spp. in these islands. The Juniper *Juniperus communis* scrub in some woods, and occasionally on open moorland, is also very rich. Forest bogs and forest lochs offer the best set in Scotland. Moreover the forest is important internationally. Bigger areas of centuries-old boreal forest of Scots Pine remain at Mar and Ballochbuie than in most parts of boreal Scandinavia itself.

Insects and other invertebrates are important for maintaining the soil on which most other wildlife depends. Numerous arctic and lowland species occur on the summits and moors, and many boreal invertebrates in the forests (Welch 1974). The Cairngorms region has produced several species new to science. For decades, entomologists have come to the forests and summits, attracted by a richness of species rare or absent in other parts of these islands.

For current attraction, the birds are superlative. Most interesting are the arctic species, such as Ptarmigan, Snow Bunting and Dotterel, the Cairngorms region being the Scottish stronghold for all three. Fairly big stocks of Dotterel live on the plateau grasslands, the very small, marginal population

of summering Snow Buntings on boulder fields near long-lying snow beds and mossy flushes, and the abundant Ptarmigan on the vast arctic-alpine heathlands studded with stones and patches of scree. Ptarmigan occur at higher population densities than in many other parts of their extensive world range, and their population is interesting as it fluctuates greatly in a fairly natural habitat. Others of mainly arctic or subarctic distribution that nest here, such as Dunlin, Golden Plover, Meadow Pipit and Wheatear, also breed on the lower moors, as does the Ring Ouzel, a species of northern European distribution. More species breed than on other high hills in Scotland, and Snipe, Common Sandpiper, Lapwing, Common Gull and Skylark nest at higher altitudes than elsewhere. Occasional arctic rarities appear in summer, such as Snowy Owl, Long-tailed Skua, Sanderling, and Shore Lark.

The moors and lower hills are now internationally important for Peregrines, which have done well here in recent years at a time when breeding stocks and brood size declined drastically in most of the world range. The local Peregrines, feeding largely on moorland prey and not leaving in winter, suffered little from pesticides and other toxic chemicals. Golden Eagles also continued to breed well during the 1960s, a time when their breeding success in western Scotland declined greatly in association with toxic contamination from pesticides in sheep dips. In the moorland zone of the Cairngorms, the Greenshank is noteworthy as a scattered, rare, marginal population. More species of moorland birds have bred in the Cairngorms region than in most parts of these islands, a few of the more uncommon ones being the Red-throated Diver, Slavonian Grebe, Whooper Swan, Hen Harrier and Whimbrel.

The boreal forest here is the main area for breeding Scottish Crossbills *Loxia curvirostra scotica* and Crested Tits, and supports nesting Ospreys and high densities of Siskins and Capercaillies. Other species typical of the northern forest in Scandinavia and Russia occur in spring, and most have nested. Such are the Slavonian Grebe, Whooper Swan, Goldeneye, Whimbrel, Spotted Redshank, Green and Wood Sandpiper, Temminck's Stint, Waxwing, Bluethroat, Fieldfare, Redwing, and Brambling. Watson (1975) wrote 'The variety of the forest shows again in the fact that, here also, many typically southern or central European summer migrants occur or breed near or at their northern Scottish limit. They do so in pine and birch woods as in their Scandinavian boreal forest habitats, not in habitats more like England; the Wryneck, Garden Warbler, Chiffchaff, Blackcap and Pied Flycatcher are a few examples. You also see southern marsh-birds here near their northern limit for Britain, namely the Grasshopper Warbler,

Spotted Crake and Marsh Harrier'. To this list we can now add Great Grey Shrike in spring, Goshawks in the woods but often hunting out on the moor, and Green Woodpeckers at their northern Scottish limit in the old forest.

Threats to the wildlife

Many developments have been proposed as urgent for the Cairngorms, such as roads through Glen Feshie and up Glen Quoich, and ski lifts on Beinn a' Bhuid (see map in Watson (1967). If the Technical Planning Group's (1967) proposals are ever implemented, they would fragment this region with new roads and severely damage its potential for wildlife conservation and wilderness. Other proposals have included a church on Cairn Gorm, a village in Coire Cas, an air strip in Glen Quoich, and a road through the Lairig Ghru with ski lifts on either side. In 1975 the Countryside Commission for Scotland proposed to designate Grampian Way, a long-distance route through the Lairig Ghru and Glen Tilt. In my opinion, such a development is inappropriate for a remote path through the middle of a National Nature Reserve. After local councils, mountain rescuers and climbers opposed it the proposal was shelved, though not given up. Nethersole-Thompson and Watson (1974) described other developments threatening wildlife and wilderness, such as snowmobiles and helicopters for private sport. Both threats have since become real, spoiling the wilderness experience, disturbing animals, and damaging vegetation and soil.

Cheaply-made bulldozed tracks have spread in all parts of the region (Watson 1974) to save walking by shooters of deer and grouse. These gravel ribbons, which can be seen miles away, spoil fine views and the visitor's appreciation of wilderness. They also lead to erosion and attract tourists' vehicles which otherwise would not go there. Some tracks end on high ridges, where vehicles can roam freely on nearby plateaux, damaging the vegetation. The most remote grasslands on Beinn a' Bhuid and the Glas Maol now show signs of this.

On and near the ski grounds the most obvious damage is bare ground and eroded soil due to vehicles, human feet, and skiers (Bayfield 1971). Other changes are the green patches of reseeded, fertilized grass sown to stop erosion, black tar sprayed to prevent the grass seedlings drying out, and concrete drains taking water into the main streams. These are all local problems, and artificial methods were necessary to prevent erosion. More care earlier (for example, confining vehicles to tracks) would have avoided much of this artificiality. Nevertheless, the point remains that ski grounds are best limited to a few places where operators can work profitably, offer good facilities, and prevent erosion properly. In my

opinion, it would be unwise to allow them to proliferate in other parts of the Cairngorms, producing many struggling and unprofitable developments that would harm conservation values and cause big problems of mountain safety and rescue.

Away from the ski grounds themselves, human pressures have increased due to people attracted by the roads and chair lifts. Hundreds roam the plateau of Cairn Gorm on a fine summer day. The results include more erosion, new and wider paths, numerous new cairns, rocks broken by gem hunters and left on the vegetation, stones used by campers for weighing down their tents and then left on the turf, and litter. Parties practising winter survival dig snowholes and stick their garbage into the snow; it appears after the thaw, littering the small patches of snow-bed vegetation. Other people, individually and in organized parties, search for Dotterel and Snow Bunting and their nests and young, and spend long periods watching and photographing them. An example of poor planning on the plateau was the appearance of two refuges and a hut. Curran hut went up in 1967 before planning permission was received, and stayed up despite protests by people concerned about conservation, mountain safety and rescue. Some school children died nearby in 1971 after trying to reach Curran and it was removed in 1975. Apart from the question of mountain safety, it was, I think, inappropriate to permit such a hut in the middle of a plateau so valuable for wildlife, arctic-like scenery, and mountain wilderness.

Rock-climbers in the Cairngorms have often removed vegetation to clean the rock, but the best cliffs for vegetation are broken, wet and unsuitable for climbing. In any case, climbers are becoming increasingly conservation-minded and so this problem is now declining.

Hikers have long been unpopular on grouse moors and deer forests, as their disturbance is said to reduce bags of Red Grouse and spoil deer stalks. As walkers increase, complaints grow, for instance in the Peak District National Park. However, Red Grouse on areas there where walkers had access bred no worse than on areas out of access, and the smaller bags were related to the owners' poor management of the heather (Picozzi 1971). Stocks of Red Grouse have remained as big on much-visited ground near the car parks and chair lifts at Cairn Gorm and the Cairnwell as on ground nearby where very few people go (Watson, Bayfield and Moyes 1970). Therefore, there is no published evidence that walkers harm stocks of Red Grouse, but there is evidence of no measurable ill-effects on stocks. As for Red Deer, again there is no good evidence of damage. Hikers are sometimes seen to disturb stags which are being stalked, and so ruin the

stalk. However, there are occasions when stags, disturbed by hikers not seen by the stalkers, run within rifle range from outside and get shot. The loss of shots due to observed hikers must be weighed against the extra shots due to disturbance by hikers who have not been seen by the stalking party.

After the ski lifts were built, some people thought that Ptarmigan and Dotterel would suffer. However, Ptarmigan on the much-disturbed ski grounds at Cairn Gorm and the Cairnwell have maintained as high stocks and reared broods as big as on nearby slopes where few people go (Watson *et al* 1970). The same has happened with Dotterel on the much-visited parts of the plateau nearest the ski grounds, as compared with other, seldom-visited places. However, as more and more people go there, the possibility remains that disturbance of the birds and damage to habitats may increase so much that the populations decline, and so we need a continuing watch.

During the 1970s, the summering stock of Snow Buntings has been much bigger than previously on the central Cairngorms (Nethersole-Thompson 1976). In early summer, they are sometimes seen eating crumbs of waste food on the ski grounds. They may benefit from the ski developments, and certainly are very common in and near arctic villages. However, the summer stock was low in 1975. The cause of such fluctuations is uncertain, and any connection with human impact is impossible to prove, as no comparable control area without human impact exists.

Feeding much on food dropped by people, Snow Buntings have greatly increased in winter at ski grounds, car parks, and lay-bys, and Pied Wagtails in summer. Crows, Rooks, Black-headed Gulls and Common Gulls have increased in summer on ski grounds, upper moors and high plateaux, attracted by scraps. The 70 marines who spent a few days camping on the Cairn Gorm plateau in June 1975 while demolishing Curran hut, were attended by three Lesser Black-backed Gulls, 30 Common Gulls, and five Black-headed Gulls. Crows have taken to the new habit of roaming the high ground, where they rob the eggs of Ptarmigan and other birds.

Another threat occurs over birds of prey being disturbed by climbers, birdwatchers and other tourists. Climbers have disturbed Golden Eagles at one nest cliff in Speyside, and Peregrines at two sites. One or two pairs of eagles in the most accessible parts of Spey and Dee usually fail to rear young, for reasons often associated with disturbance by tourists.

Egg-collectors have taken many eggs from birds of prey and other uncommon species in the Cairngorms and falcons have robbed some Peregrines. However, the proportion of nests robbed in recent decades has been too low to harm the

birds' populations. In 1976, however, when prices soared, many Peregrines were robbed and three young Golden Eagles were taken in northern Scotland for sale. This new threat will probably continue, as the prices offered are so high that current fines are inadequate.

The greatest threat to birds of prey is persecution by gamekeepers. Golden Eagles were most numerous about 1945 after many keepers had been away in the war. Since then their numbers have remained fairly steady in the upper deer forests, but they have bred only sporadically and less successfully on the grouse moors. On some moors, eagles have been shot, poisoned and trapped and their eggs collected and nests burned. On others, the birds themselves are not overtly persecuted, but their eggs usually fail to hatch because of other disturbance, such as people staying near the eyries while killing Foxes *Vulpes vulpes* or cutting peat. Hen Harriers are frequently shot, and other birds of prey killed less often. Recently, many keepers have put poison in meat baits. Often done supposedly to keep down Crows, it kills Crows, Buzzards, Golden Eagles and others indiscriminately. In the last decade, pole traps have taken Buzzard, Snowy Owl, and others. When rents for grouse shooting increased in the early 1970s, so did the persecution of birds of prey in Speyside and Deeside. Picozzi and Weir (1976) found that many Buzzards have been killed by poisoning and shooting in Speyside. Gamekeepers have kept the breeding stock of Golden Eagles lower than it would otherwise be, its breeding success far below, and the area in which the birds breed much smaller. Gamekeepers and fishing staff kill Goosanders in most of the Cairngorms region, and any live Adder *Vipera berus* that they come across usually becomes a dead one very quickly.

The persecution of Fox, Wild Cat *Felis silvestris*, Stoat *Mustela erminea* and Weasel *Mustela nivalis* has continued over most of the region. Fox killing by deer stalkers has occurred every year in the Cairngorms National Nature Reserve since its formation in 1954, yet there are no conservation reasons (as distinct from political reasons) for killing these mammals in this outstanding, fairly natural area.

Reindeer *Rangifer tarandus*, introduced to Glen More, now roam freely on the summits in groups up to 50 strong. Reindeer used to occur in Scotland, but domestic Reindeer were introduced to the Cairngorms, not wild ones. Domestic Reindeer introduced to Alaskan islands have changed plant communities, and this is a possible risk here if population density continues to increase. It would have been better planning to have introduced wild Reindeer, not domestic, and to have done it elsewhere in Scotland, not in one of the most notable places for wildlife conservation in the country.

In the forest zone there is a threat to dead trees. These are an important part of the forest habitat as they support a great variety of invertebrates and act as nesting sites and feeding places for woodpeckers and other birds. Because of firewood extraction, only a few of the most inaccessible woods retain numerous dead trees. Even within the Cairngorms National Nature Reserve, many dead trees and some live ones have been removed in the last 20 years.

The greatest threat to wildlife in the Cairngorms arises with Red Deer, which will eventually destroy some of the best examples of the old Caledonian forest unless the owners' management changes drastically. In many forests, they prevent regeneration by eating all young trees. Overgrazing by Red Deer has destroyed scrub on most hill ground as well as in the woods. In many valleys they graze Heather and Blaeberry almost as if mown. Places with few or no Red Deer show good regeneration, as at Ballater and Nethybridge, and young trees soon appear on heavily grazed ground after fencing. Many of the existing trees grew about two centuries ago, before deer stalking became profitable in Victorian times. Today, wintering Red Deer are more abundant in valleys where their favoured areas—well-drained grasslands—are more extensive. After many valleys emptied of arable farmers due to clearances and voluntary emigrations last century, Red Deer could use the well-drained fields there, and thus probably increased and then pressed harder on young trees. Before farming man appeared, the forests were much more extensive. Severe damage occurs today when Red Deer move in storms from big areas of open hill into dense herds concentrated in small woodlands. Such concentrations probably did not occur in the ancestral, more continuous forest, and do not occur today in the larger woodlands.

Before 1960, when Red Deer were less profitable, many died in hard winters. Since then, landowners have been persuaded by the deer research on Rhum and the advice of the Red Deer Commission to kill a much bigger percentage of their stocks. Along with this extra, artificial mortality, natural winter mortality decreased greatly. Also, deer shooting became so profitable that the owners put out greater amounts of artificial food. In recent years, Red Deer in late winter and spring have been more abundant than formerly. Trees and scrub will not regenerate in such conditions, especially as the owners are unwilling to fence large tracts because this would remove too much grazing.

On the grassier, more fertile hills and moors, many sheep in summer add to the heavy grazing pressure by deer; for instance, the National Nature Reserve at Caenlochan carries

a very large sheep stock. Sheep are such selective feeders that changes in the vegetation as a result of the big stocks are very likely.

On many moors outside the range of Red Deer, gamekeepers pull out seedling trees and burn patches of regenerating woodland. Although they burn heather fairly carefully on a few grouse moors, examples of bad burning with big fires abound. On deer forests, they are the rule. In the worst cases, very hot fires burn the soil and devastate large areas, leading to a prolonged drop in fertility. Most birds and other wildlife disappear or remain very scarce for years after these big fires.

Exotic conifers such as *Pinus contorta* and Sitka Spruce *Picea sitchensis* are inappropriate in any area of great national value for wildlife conservation. They look out of place, and local animals cannot utilize them as effectively as natural woodland. Such planting has occurred at many places in the Cairngorms region by both private and public owners. In a recent example the unusual forest bog west of Loch Morlich was ploughed and planted densely with exotic conifers.

What could be there

The arctic-alpine ground lacks the rich flower meadows and lush bogs that occur on most mountains in other, less grazed parts of the world. Probably they would appear here if severe grazing stopped. The moorland bogs also lack lushness. Seeing the heads of cotton grass *Eriophorum* spp. almost as white as snow is an experience common in other northern countries but rare here except inside a fence. More plant species would probably grow in the bogs if grazing were reduced. Scandinavian upland bog birds might then colonize, such as Temminck's Stint, Wood Sandpiper and Broad-billed Sandpiper.

In the main massifs of Am Monadh Ruadh and Lochnagar few or no sheep occur because the ground has proved too infertile for profitable sheep farming. A reduction of Red Deer alone would allow natural regeneration of trees. It would also lead to changes in tree lines. A well-defined tree line occurs at 2,100 feet on Creag Fhiaclach in Glen Feshie and in high woods near Braemar. In most northern countries sharp tree lines do occur on steep slopes like Creag Fhiaclach but on gentle slopes often they do not; instead, scattered scrubby trees grow far above the top of the obvious woodland, with small patches of trees here and there. The same would happen in the Cairngorms, as shown at Geallaig, west of Ballater, where a sharp tree line occurs on a steep slope at 1,900 feet. However, on gentle slopes on this hill, the scrubby individual pines grow scattered and far above the obvious woodland edge over a big area up to 2,150 feet.

We often think of Cairngorms woodland mainly or wholly as Scots Pine and birches which are usually all that is there now. An alternative view is that they are dominant only because they have withstood severe grazing better than the more palatable willows *Salix* spp., Aspens *Populus tremula*, Rowans *Sorbus aucuparia*, Hollies *Ilex aquifolium* and others. Ungrazed cliff-ledges show the potential, with numerous Aspens, Rowans, and willows, and occasional European Larches *Larix decidua* and Norway Spruces *Picea abies*. Occasional patches of ungrazed woodland inside fences also show what could be more widespread, with fine groves of Aspen, Hazel *Corylus avellana*, Rowan and birches, studded with Hollies and Junipers, and with dense willows and Alder *Alnus glutinosa* in damp spots.

Some of the boreal forest is a monotonously uniform stretch of coniferous trees and occasional birches, but this is often due to man. In Scandinavia, and even more so in North America, it is a complex habitat with a great variety of tree species, understorey species and ground vegetation. It has much variety even at any one site. This comes partly because of natural fire, which plays an integral part in maintaining the boreal forest, and also partly because some years are better for seed production. Thus one site can have a stand of one species at one time but a different species some years later. Each will do best in certain soil conditions. However, variations in the effects of fire, the abundance of seed from different species, and the presence of different species of seeding trees nearby, result in many trees growing in off-site conditions where a different species would do better. Pines that are old, diseased, fire-damaged, or growing in poor sites in peat bogs are especially favoured by feeding Capercaillie (Seiskari 1962) possibly because the sparse needles on these trees are more nutritious. A natural boreal forest is therefore an infinitely variable, continually changing, complex heterogeneous habitat, supporting a diverse wildlife. Boreal forests simplified by man are much less rich in wildlife. The forests of Scots Pine and birches in the Cairngorms, although fine and rich in wildlife compared with most other, wholly artificial, northern woodlands in Scotland, are only degraded remnants of what could be there.

This argument for more variety does not conflict with this paper's earlier disapproval of the introduction of domestic Reindeer or exotic conifers in the Cairngorms. Introducing exotics from overseas, particularly species that were not here before, is quite different from altering conditions so that existing natives can spread more widely by themselves. It may be argued that the Scottish boreal forest could not be as varied

as on a continent, simply because the geographical isolation of any island makes its flora poorer than the adjacent continent. Nevertheless, the greater variety that one sees on cliff ledges and inside fences shows clearly that such effects of isolation are not the main reason for the poverty of most woods in the Cairngorms region.

The most remarkable of the absent habitats that could be in the Cairngorms is subalpine scrub. In most northern countries an extensive scrub zone occurs on mountains above the tree line except in some places where severe grazing has—as in Scotland—destroyed it. It consists of dense bushes of willow and Dwarf Birch *Betula nana* with occasional scrubby coniferous trees and Alders. On gentle slopes it may cover vast tracts continuously but on most slopes it forms a mosaic with the arctic-alpine heaths and grasslands. It gradually peters out towards higher altitudes but often runs high up in tongues or patches along streams or hollows.

Many people know that we should conserve the old forests but few think of scrub conservation, probably because they are unaware that it was there in the first place and could be there again. Willow and Dwarf Birch do grow on the open hill but are usually grazed so hard and burned so often that they are tiny and easily overlooked. Above the tree line at 2,000 feet the Cairngorms region has the potential for subalpine scrub over large areas up to 2,500 feet, and in sheltered places even higher. This would support its own associated species of plants and animals. We might expect a big increase of small mammals, insects, Roe Deer *Capreolus capreolus* and birds such as Redpoll, Willow Warbler and probably other passerines. Scandinavian sub-arctic species might colonize if the scrub were extensive.

One animal that was in the Cairngorms region in the past and is likely to colonize well there in the near future is the Pine Marten *Martes martes*. The formerly resident Red Kite and Polecat *Mustela putorius* are possible colonists but unlikely to become well established soon. Others, such as Wolf *Canis lupus* and Wild Boar *Sus scrofa*, will remain only as place names unless public attitudes change greatly.

Land-use practices and conflicts preventing wildlife potential from being realized

The top land-use priority for a nationally and internationally outstanding area like the Cairngorms region should, I believe, be recreation involving wildlife conservation and the preservation of wilderness and fine scenery. These are what draw most people there in the first place. The dominant land use until now has been deer stalking and grouse shooting, with

hill farming and forestry secondary. Skiing and other forms of organized recreation are increasing rapidly, but have priority as a land use only in a few small areas such as Cairn Gorm and Loch Morlich. The present dominant land uses are in such serious conflict with the land use that should be here, especially where deer stalking prevents the regeneration of woodland and scrub, that the wildlife potential cannot be attained.

Is Scotland too small or poor to conserve wildlife and wilderness on the scale needed if the potential in the Cairngorms is to be achieved? The present dominant land uses—deer stalking and grouse shooting, with a little hill farming and forestry—produce employment, meat and other materials, and money, from infertile ground that would otherwise produce nothing. However, the point is whether the amount produced for the local economy and for some local interests is worth sacrificing in the national interest. Deer stalking, grouse shooting, sheep farming and commercial afforestation occur over a vast extent of Scotland but nationally outstanding areas like the Cairngorms occupy a tiny proportion of the country. Many people believe that Scotland is not so poor that every scrap of infertile upland must be used for producing a very small amount of meat. The numerous visitors who now come to the Cairngorms for many kinds of recreation, and who contribute most to the local economy, are likely to take precedence over the very small numbers who live off the traditional land uses or contribute to them as shooters. In the national interest there is, I think, no case for maintaining traditional land uses in the Cairngorms, unless they can change so as no longer to conflict seriously with the national land-use priority.

The few landowners and tenant farmers who live there and practise these traditional land uses cannot be expected to refrain from developing them most profitably, even if this conflicts with the national interest. They cannot be expected to pay for man's deforestation and other misuse of the land in centuries long past by making good for this now. Only the nation can pay for past misuse during less enlightened days, and if a national interest is currently at stake only the nation can pay to safeguard it. It follows that the nation will have to compensate individual owners for proven loss due to a great reduction of deer stocks to allow tree regeneration. Alternatively, the area could be bought and run by a national conservation body in the national interest. This alternative is more desirable, as management policies often change on a landowner's death, thus putting long-term conservation more at risk. This is no argument against private landowning in general, or for state ownership of land in general. It simply acknowledges that a national interest such as conservation of wildlife and wilderness in a large area like the Cairngorms

region is unlikely to be safeguarded in the long run unless a national conservation body controls the most outstanding parts of the area.

The integrated planning and management needed over the whole Cairngorms region have not been achieved, as the structures for planning by central and local government were not designed for the new and unforeseen problems. Also, past conservation policies have been difficult to implement because of the need to fit in with the owners' wishes (see the criticisms by Kellas 1974) so that the all-too-short-term reserve agreements could be renewed in a few years time. New owners making big changes in land use have increased the difficulty. Although part of the Cairngorms has long been a National Nature Reserve, it has worked more like a national park, with the authority not owning the land but having some useful functions such as research, permission to do a few management experiments, and the ability to prevent some undesirable developments. Nevertheless, harmful developments such as bulldozed roads and plateau huts have occurred even inside the reserves and so control has been insufficient. I think that it would be better if a national conservation body owned the most important parts of the area. In co-operation with local authorities and central government organizations, such as the Forestry Commission and the Highlands and Islands Development Board, the national conservation body could then plan properly which areas to conserve and which develop.

This ideal is for the future. Meanwhile, recent proposals on parks for Scotland (Countryside Commission for Scotland 1974) have not yet been accepted. For the Cairngorms they involve a special park where the Secretary of State would appoint some of the board in recognition of the national importance of the Cairngorms but the majority would represent the District and Regional Councils and other local interests. This would mean that local interests could override national ones. To my mind such a priority is appropriate for a park of local importance, but not for a nationally important area. Voluntary organizations have worried about this, for example the Scottish Wildlife Trust (1975). Also, the proposals accept that the traditional land uses of shooting deer and grouse should continue in special parks, as on private estates over most of the Highlands. This seems unrealistic, as the few now using the Cairngorms for private shooting are increasingly outnumbered by the many interested in outdoor recreation. Also, the traditional land uses conflict severely with the potential for the new land use of recreation involving wildlife conservation and wilderness. The proposals, although better than what goes on now, are therefore unlikely to solve conservation problems in the Cairngorms.

What is needed to realize the potential for wildlife conservation

Apart from the need for a national conservation body to own the best areas for wildlife and for national organizations to have the dominant say in planning for nearby areas of fine landscape and wilderness, I believe the following policies are essential.

Zoning Areas most notable for sensitive wildlife or wilderness would have no new facilities that attract extra people (such as new huts, roads, and chair lifts) and might even have some present facilities removed. Other areas that can withstand heavy human pressures and are not important for wildlife or wilderness might have new facilities added, but only if there was a clear demand. Free access might be allowed over most of the region but might have to be restricted at certain times of year in small areas for specific reasons such as the regeneration of scrub or woodland. Even research needs zoning, as some kinds require facilities inappropriate in a wilderness, and others may damage the wildlife itself. The main point about zoning is not to introduce new facilities in the wrong places, supposedly for the sake of people who would not have wished to go there if the new facilities had not been put there and who did not ask for them.

Reduction of deer stocks This would involve fencing large areas, killing all Red Deer within and greatly increasing the proportion shot outside. When the forest and scrub regenerate well again and cover larger areas, deer might be allowed to increase and enter the fenced ground. On areas that national conservation bodies already own there is no point in managing Red Deer in the same way as everywhere else in the Highlands. This was the past policy, partly because of worries about criticism by neighbouring owners. National bodies have the opportunity to do what nobody else is doing.

Regeneration of forest and scrub This would vary with the current condition of the trees or scrub. Time is short, as many trees are ancient, especially on Mar, and are dying fast. A big problem is whether areas should be left alone (apart from excluding deer) or whether regeneration should be hastened by burning, planting existing species and introducing species like Aspen and Rowan that are native but may be absent from the site. As many boreal forests in other countries are dynamic and change even at the same site through time, there is a case for interfering and speeding up the change, at least in some places. As a safeguard, a high proportion of the most valuable areas should be left to change naturally after reducing the deer.

Fire A wise policy would obviate the severe damage caused by big moorland fires lit by stalkers and keepers in dry conditions. In some places carefully controlled fire may be an aid to management, for instance to help tree regeneration or keep selected sites clear of rank vegetation (such as some Greenshank habitats on partly forested ground on Spey, and on open valley-bottoms on Dee).

Predators All predators should be protected, not just those protected by law. There is a need to influence private owners on land next to reserves, especially on grouse moors, so that illegal persecution near areas of national importance for wildlife ceases.

Acknowledgments

I thank Dr R. Moss for his comments.

Summary

1. This paper assesses in what respects the Cairngorms region is outstanding for wildlife and wilderness. Particular features are the vegetation, invertebrates and birds on the arctic-alpine ground, the extensive and varied moors and lower hills, and the boreal forests, forest bogs and lochs with their associated rich wildlife. The conservation aim emphasized recognizes the national interest by putting recreation involving the conservation of nationally important wildlife, wilderness and scenery first, and traditional land uses of only local importance second, not the other way round as at present.

2. Wildlife and wilderness are threatened by facilities for easier access leading to erosion and disturbance. The chief danger to predators is persecution on grouse moors. High Red Deer populations pose the greatest threat to wildlife in the region; forest and scrub regeneration are prevented by overgrazing and burning.

3. The paper suggests wildlife that could be there but is not there at present, especially a varied and regenerating boreal forest and a sub-alpine scrub above the tree line.

4. The paper discusses the land-use practices that prevent the wildlife potential from being realized. The dominant, locally important land uses of deer stalking and to a lesser extent grouse shooting involve grazing and burning which severely conflict with nationally important requirements for conserving woodland and scrub on the most valuable areas. As private owners cannot be expected to pay for national conservation interests, the only way to ensure a long-term conservation policy is for a national conservation body to own those parts of the area that are best for wildlife.

5. A policy is required for zoning the region so as to keep the most sensitive parts free from new developments, and allow carefully controlled developments in the right places elsewhere. Policies are required for a reduction of Red Deer, regeneration of forest and scrub, the wise use of fire, and a more enlightened attitude towards birds of prey and mammalian predators.

References

- BAYFIELD, N. G. 1971. Some effects of walking and ski-ing on vegetation at Cairngorm. *Symp. Br. ecol. Soc.* 11:469-485.

- COUNTRYSIDE COMMISSION FOR SCOTLAND 1974. *A Park System for Scotland*. Perth, C.C. for Scotland.
- KELLAS, J. 1974. Book of the month. *Leopard* 1, No. 2:14.
- NETHERSOLE-THOMPSON, D. 1976. Recent distribution, ecology and breeding of Snow Buntings in Scotland. *Scot. Birds* 9:147-162.
- NETHERSOLE-THOMPSON, D., & WATSON, A. 1974. *The Cairngorms*. London, Collins.
- PICOZZI, N. 1971. Breeding performance and shooting bags of red grouse in relation to public access in the Peak District National Park, England. *Biol. Conserv.* 3: 211-215.
- PICOZZI, N., & WEIR, D. 1976. Dispersal and causes of death of Buzzards. *Br. Birds* 69:193-201.
- SCOTTISH WILDLIFE TRUST 1975. A park system for Scotland. *Scott. Wildlife* 11 (2): 17-18.
- SEISKARI, P. 1962. On the winter ecology of the capercaillie *Tetrao urogallus*, and the black grouse *Lyrurus tetrix*, in Finland. *Pap. Game Res.* 22.
- TECHNICAL PLANNING GROUP 1967. *Cairngorm Area*. Edinburgh, HMSO.
- WATSON, A. 1967. Public pressures on soils, plants and animals near ski lifts in the Cairngorms. *The Biotic Effects of Public Pressures on the Environment* (Ed. by E. Duffey), pp.38-45. London, Natural Environment Research Council.
- WATSON, A. 1974. The vanishing wilderness. *Mountain Life* 11:18-19.
- WATSON, A. 1975. *The Cairngorms*. Edinburgh, Scott. Mountaineering Club District Guide.
- WATSON, A., BAYFIELD, N., & MOVES, S. M. 1970. Research on human pressures on Scottish mountain tundra, soils and animals. *Productivity and Conservation in Northern Circumpolar Lands*, pp. 256-266. Morges, Switzerland. IUCN Publs. New Ser. 16.
- WELCH, R. C. 1974. Insects and other invertebrates. *The Cairngorms*, by Nethersole-Thompson, D., and Watson, A., pp. 237-245.

*Dr Adam Watson, Institute of Terrestrial Ecology,
Blackhall, Banchory, AB3 3PS, Scotland.*

Short Notes

Weight increases and behaviour of Wrynecks on the Isle of May

In southeasterly weather from 30th August-3rd September 1974 there were falls of Wrynecks and other eastern migrants on the Isle of May. Ten Wrynecks were trapped and re-trapping showed at least five remained three to six days. They were conspicuous on arrival and readily driven into Heligoland traps but soon became elusive. On 4th September none was seen despite intensive coverage of the island but retraps between 5th and 7th showed at least four must have been present. As the Wrynecks arrived they were mostly trapped in the Bain and Low Traps. Subsequently new birds and retraps were mist-netted in different parts of the island as well as being caught roosting in the Heligoland traps.

The rapid increase in weight shown by the five retraps sug-



PLATES 21-24(a): Wildlife potential in the Cairngorms region (pp. 245-262).

PLATE 21 (a) Crested Tit at nest hole in Abernethy Forest below the Cairngorms.

Photograph by R. Lambie.

(b) Male Ptarmigan in summer on the arctic-alpine ground.

Photograph by R. H. Hogg.





PLATE 22 (a) A bulldozed track slices through old birch wood by Loch Muick, obliterating a former footpath and leaving jagged eroding scars on the hillside.

(b) Dying stag in dying habitat, a typical example of starvation through overpopulation. Signs of severe grazing are: no scrub, old trees dead with no young ones to replace them, lower branches all grazed off and sparse feeding at ground level.

Photographs by Adam Watson.





PLATE 25 (a) Dense subalpine scrub of willow and birch near the tree line in north Norway.
(b) Mountains in central Alaska looking remarkably like the Cairngorms. The main differences are that coniferous woodland grows thickly along the valley bottom and a dark broad zone of willow scrub extends far above the trees. *Photographs by Adam Watson.*





PLATE 24 (a) Heather moor turning to forest at Geallag near Ballater, where Red Deer are scarce and trees regenerate well. In the distance behind the skier is a sharp tree line at 1,900 feet (p. 255).

Photograph by Adam Watson.

(b) Long-established Treecreeper nest site (p. 267-8).

Photograph by William Skinner.



(c) Migrant Wryneck (pp. 262-7).

Photograph by A. D. K. Ramsay



gested an abundant food supply for the birds (see table). One or two Wrynecks were sometimes seen near the Lighthouse feeding on bare ground between the rocky outcrops and the remainder were probably feeding on the steep cliff areas of the island. A previous occasion on the Isle of May when a large fall of Wrynecks occurred was from 22nd-24th August 1970. The average weight on capture was similar to the 1974 birds.

Mean weights in grams \pm S.E.M.	Number of birds in brackets
First capture Autumn 1974	32.7 \pm 0.7 (11)
Retrapped 1974	40.3 \pm 0.9 (5)
First capture August 1970	33.3 \pm 0.9 (17)

The increase in weight of the five Wrynecks varied from 8.0-11.4 gm (mean 9.1) per bird—an average growth of 29.3 \pm 2.5% in body weight. The most rapid rate of increase averaged 3.0 gm per day for three days while the greatest increment of 11.4 gm (38.5%) in body weight was achieved in just four days. These weight gains are even more rapid than those found by Williamson (*Fair Isle and its Birds* 1965) on Fair Isle for Wheatear, Redpoll and Dunnock. Thus the Wrynecks were apparently preparing for another long flight on their way south.

It is often assumed that migrant birds arriving on the Isle of May depart rapidly to the mainland to feed before resuming their journey. Our experience with retrapped Wrynecks demonstrates that ample food is available on the May to enable a rapid and large increase in weight to occur in these insectivorous birds which were probably feeding on ants (Formicidae) as previously suggested by Gordon (6: 255-267). Furthermore it shows that the disappearance of the birds on the island was more apparent than real since the Wrynecks became very elusive after they had been on the island for a short while.

Other observers on the Isle of May in this period were G. L. Sandeman, J. H. Ballantyne, D. Moss and L. L. J. Vick.

DEREK R. LANGSLOW.

Further notes on a long-established Treecreeper nest site

I refer to a previous note (2: 249-250) regarding the breeding activities of Treecreepers from 1950-62 at a long-established nest-site, known to have been used since at least about 1930, in a garden toolshed at Dornoch, Sutherland. The following notes are of further observations that I made at the same site from 1963-75.

Treecreepers nested there in the six years 1965, 1966, 1969,

1971, 1973, and 1975, successfully as usual, compared with five breeding records in the previous 13 years. Breeding in consecutive seasons occurred only once throughout the 26 years of observation. In each season that the birds used the nest a further quantity of material was added to the already massive structure which, with its vast accumulation of tiny twigs and wood chips wedged into the interstice, eventually resembled a miniature eyrie (plate 24b).

The clutch sizes and dates of completion were as follows:

1965—5 eggs by 22nd April,
1966—5 eggs by 23rd April,
1969—7 eggs by 7th May,
1971—6 eggs by 21st April,
1973—5 eggs by 9th/10th June,
1975—6 eggs by 4th May.

Hatching was 100% successful; at least 31 out of 34 young left the nest and as there was no evidence of nestling mortality, all of them may have fledged successfully. It would appear that the June record was either a replacement clutch or a second brood.

A watch from 13.35-15.10 BST on 27th April 1965 showed that incubation spells were of short duration. In that period the bird incubated for 53 minutes in stints of 17, 6, 2, 17 and 11 minutes, while absences off the nest amounted to 11 minutes. During an hour's observation from 13.00-14.00 BST on 19th May 1965, three days prior to fledging, the adults brought food to the nestlings 14 times at intervals ranging from one to 16 minutes.

D. MACDONALD.

Dipper removing lining from used nest

On 2nd May 1973 near Peebles I saw an adult Dipper in its nest removing grass and leaves from inside and either dropping them through the entrance into the stream below or, more usually, flying down to a stone, dipping them into the water and letting them float away. Meanwhile two young were sitting silently below. They were being fed in this nest on 27th April. After a few minutes I tried to check whether there was an egg or dead nestling in the nest but as far as I could feel it was empty. Another adult came and fed one of the waiting young. Both adults were briefly together at the nest entrance then one flew away.

Later an adult returned with food, perched on a stone near a begging fledgling, but ignoring it, flew up to the nest with the food and called while the fledgling continued to beg. The second adult arrived, fed the young one and flew up to the

nest, where there was display and calling. A few minutes later, about 10.30 am, there were three young below the nest while an adult was again removing material from the interior.

When I returned at 2.00 pm an adult sitting below the nest flew up and removed a grass stem. The nest entrance was now clearly larger.

Another observer (Mr Paterson) told me that a second brood was later successfully reared in a nest a few feet away.

C. M. MORRISON.

[Mr R. Hewson comments that either renovating an old nest or building a new one are both usual for Dippers. Removal of the old lining may be normal repair procedure but does not appear to have been recorded.

It is also interesting that a begging fledgling was ignored even when its parent was carrying food.—Ed.]

Reviews

Evolution Illustrated by Waterfowl. By David Lack. Oxford, Blackwell Scientific Publications, 1974. Pp. 96; 36 text figures. 21½ x 14 cm. £1.50 (paperback).

Most biologists believe that the present spectacular diversity of living creatures has arisen from a much lesser diversity of primitive organisms and that the major cause of this has been natural selection. Those who do not accept this theory of evolution by natural selection, or who regard it as seriously incomplete, fall into three categories. There are those who, after a careful consideration of the concepts and facts involved, have decided that processes other than natural selection are important, processes like group selection and random drift. At the opposite extreme are those who maintain the peculiar belief that God has written lies into the structure of nature and that we should therefore accept not the evidence of our senses but views which are held to have descended to us entirely without error from the nomadic pastoralists to whom the Almighty is supposed to have revealed all.

Many birdwatchers fall into the third category. Without having a deep knowledge of the ideas involved in the theory of evolution by natural selection, which are simple only in principle, they know a great deal about the complexities of living nature and they cannot see how the theory can account for many of the phenomena they observe, such as the interacting systems of signal and response involved in bird behaviour. Yet it is possible to advance plausible hypotheses as to how natural selection could have produced these phenomena. Furthermore, it is possible to demonstrate the action of selection in the field—arguably the greatest triumph of biology in the middle years of this century. Darwinists have simply failed to convey the subtleties of evolution by natural selection and the knowledge that they now have of selection in action, particularly to amateur naturalists. There is a communications gap.

Unfortunately, *Evolution Illustrated by Waterfowl* does not fill this gap. Perhaps the failure to mention observed selection is unsurprising, since waterfowl have not been used in such studies. However, the action of selection in bringing about evolutionary changes could surely have been

argued more explicitly. It is true that the bright drake plumages have evolved for species recognition but many will ask "How could the male plumage evolve before the female's response and how could the response evolve before the plumage, if natural selection is the driving force of evolution?" This book does not provide the answer. It does not give a detailed account of the evolutionary processes involved in this and similar cases, processes obvious to those who are familiar with modern evolutionary theory but not, apparently, to others.

This omission is unfortunate, for the book is otherwise a masterly demonstration of the art of exposition through the printed page. David Lack had the rare gift of being entertaining, lucid, and intellectually rigorous all at once and the gift is fully displayed here. A wide range of topics is considered, going beyond the confines of so many books on evolution, into areas in which Lack himself was most interested. It is perhaps a measure of his influence on ornithology that these coincide closely with the interests of the majority of his potential readers.

Several chapters describe the diversity of waterfowl, their classification, and the principles on which such classifications are based. This leads to the topic of subspecies, geographical variation, and the origin of species by geographical isolation. The basic material on which natural selection acts, genetical variation within species, is introduced through a description of colour phases and the principles of selection illustrated by the domestic breeds that artificial selection has produced. A brief discussion of hybrids serves to lead one easily into the question of species recognition characters. A chapter is devoted to sexual selection, though Lack, in common with many modern biologists, maintains that it is a concept of little importance. The present interest in the evolution of sex and of breeding systems may perhaps reverse that view. Evolutionary ecology, so much stimulated by Lack, is covered in chapters on competition between species, adaptive radiation, evolutionary convergence, and breeding adaptations. A brief chapter on migration and moult completes the topics covered. But it is not the final chapter: there is another to summarize what we should have learned from what has gone before—plus appendices giving a complete list of waterfowl and a glossary of terms. These last three items are just what a foolish author would have omitted, but a wise author has left in.

Robert Gillmor's illustrations and Blackwell's production are of a standard to match the writing, making the book a delight to read. I have read it twice, enjoying every minute. Surely anyone interested in birds, whether as beautiful parts of the garden scenery or as objects of the driest academic study, will find it equally enjoyable.

J. J. D. GREENWOOD.

A Guide to Bird-Watching in Europe. Edited by James Ferguson-Lees, Quentin Hockcliffe and Ko Zweeres. London, Bodley Head, 1975. Pp 299; 25 drawings; 22 maps; 36 pages of tables. 20½ x 13 cm. £3.95 (cloth) and £2.50 (paper).

This book claims to offer comprehensive coverage of each European country. In fact it is a series of brief essays on birdwatching potential with a table listing the status of 432 species in every country. England, Scotland and Wales get 13 pages, Ireland four, European Turkey a page and a half, and Albania a paragraph. It is claimed further that each chapter is by a leading field ornithologist who has intimate knowledge of the bird life of the area concerned. This is indeed true for many countries but with others the authors admit that relatively little is known about bird distribution, appeal for further information and suggest where useful work might be done. The chapters are preceded by a short summary

of information on important ornithological societies, relevant literature, reserves and ringing organizations. Simple maps indicate the position of the more important places of ornithological interest. A great deal of information is packed into the essays and the reader should remain in no doubt as to what birds he may have a chance of seeing and broadly where he might be able to find them.

One feels this is a book for the more casual birdwatcher to determine what birds he might see on holiday. The more serious students will be familiar with the information already and would be looking for far more detailed coverage. Although there are pleasing drawings by H. J. Slijper heading each chapter, there is a lack of illustration. Photographs of important habitat might well have enhanced the presentation and value of the work. No doubt this would have increased the costs considerably and the price already seems rather expensive.

R. J. RAINES.

Current Literature

Recent material of Scottish interest includes :

Clyde Area Bird Report 1975. R. W. Forrester and I. P. Gibson (eds.) 1976. Price 65p (including postage) from The Ranger, Muirshiel Country Park, Lochwinnoch, Renfrewshire.

Breeding behaviour of Ospreys *Pandion haliaetus* in Scotland. Rhys Green, 1976. *Ibis* 118: 475-490. (Analysis of RSPB Loch Garten log books 1959-73).

Nesting density and breeding success in the Herring Gull *Larus argentatus*. Jasper Parsons, 1976. *Ibis* 118: 537-546. (Study on Isle of May in 1968).

Blackbirds nesting in disused Magpie nest. R. C. Dickson, 1976. *British Birds* 69: 452. (Record from Galloway).

The numbers of Pink-footed and Greylag Geese wintering in Britain: observations 1969-1975 and predictions 1976-1980. M. A. Ogilvie and H. Boyd, 1976. *Wildfowl* 27: 63-75. (Most data from Scotland).

Structure and dynamics of a Mute Swan population. David Jenkins, Ian Newton and Colin Brown, 1976. *Wildfowl* 27: 77-82. (Data from Outer Hebrides).

A function of the pairbond in the Common Eider. Ruth E. Ashcroft, 1976. *Wildfowl* 27: 101-5. (Study in Aberdeenshire).

Factors affecting laying date in the Common Eider. E. B. Spurr and H. Milne, 1976. *Wildfowl* 27: 107-9. (Study in Aberdeenshire).

The feeding behaviour and food of the Shelduck on the Ythan Estuary, Aberdeenshire. N. Buxton, 1976. *Wildfowl* 27: 160.

Notice and Requests for Information

Artificial islands for Black-throated Divers Lack of suitable islands in south Argyll largely restricts Black-throated Divers to nesting on loch shores where human disturbance often causes failure. Artificial floating islands were installed on two lochs in 1976 and although divers did not nest one island was probably occupied late in the season. If anyone is interested in repeating the experiment elsewhere David Merrie of West Faerwood, Dollar, Clackmannanshire, will gladly provide details of the construction and installation of the islands.

Shelducks The study in the Forth started by David Jenkins is being continued and we request sightings of Shelducks (1) with colour rings outwith Aberlady Bay, and (2) prospecting, nesting or with young in East and Midlothian. Immediate notification, by telephone if possible, should be sent to Michael Pienkowski, 1 West Fenton Cottages, North Berwick, East Lothian, telephone Gullane (0620) 843580.

Foot-paddling by gulls Peter Ewins of Zoology Department, Edinburgh University, West Mains Road, Edinburgh, would be grateful for records of foot-paddling in any gull species, especially on grass. Notes on location, substrate type, species, number of birds foot-paddling, weather and other relevant comments would be useful.

The Scottish Ornithologists' Club

Revenue account for the year ended 30th June 1976

	Year to 30/6/76	Year to 30/6/75
INCOME		
Subscriptions received for year	£7014	£6258
Income tax recovered on covenanted subscriptions	1186	1009
Dividends and interest received (gross)	300	367
Surplus on Bookshop (sales £28,208)	6769	5271
Sale of "Scottish Birds"	443	437
Sundry sales less sundry purchases	88	39
Donations received	15	21
Annual conference	26	—
Transfer from Life membership fund	75	—
	<u>£15916</u>	<u>£13402</u>
EXPENDITURE		
Branch expenses including lectures	£645	£574
Travel expenses of Council members and of delegates to conferences	326	261
Secretarial and Editorial expenses	11150	8086
Office expenses	1643	1427
Scottish Centre for Ornithology and Bird Protection :		
Club's share of running expenses	942	760
Cost of books purchased for Library	128	126
Cost of publishing "Scottish Birds" (less advertising revenue £635)	3394	1573
Honorarium and expenses of Compiler of 1975 Scottish Bird Report	£133	—
Less contribution from "Scottish Birds" Appeal Fund	133	—
Net cost of annual conference	—	69
Subscriptions paid	73	69
	<u>£18301</u>	<u>£12945</u>
Excess of Expenditure over Income	(2385)	457
	<u>£15916</u>	<u>£13402</u>

Balance Sheet as at 30th June 1976

	Year to 30/6/76	Year to 30/6/75
GENERAL FUNDS OF THE CLUB		
Accumulated surplus from previous year ...	£3445	£2988
Deduct deficit for year (1975 surplus) ...	2385	457
	<u>£1060</u>	<u>£3445</u>
(Note £1000 earmarked for House Fabric Fund)		
Life membership fund ...	1612	1200
"Scottish Birds" appeal fund ...	1542	1513
Earmarked for library binding ...	156	167
Balance of Royal Society grant to library ...	182	188
Total funds ...	<u><u>£4552</u></u>	<u><u>£6513</u></u>

REPRESENTED BY

Cash in hand and bank ...	—	£515
Cash in Edinburgh Building Society ...	94	8
Bookshop stock ...	7225	5353
Tie, badge and car sticker stock ...	156	191
Debts due to club ...	1226	1376
Due from Endowment Fund ...	—	33
Addressing machine cost less depreciation ...	—	100
Dry rot expenditure still to be recovered ...	808	—
Investments at cost as below ...	2406	2406
	<u>11915</u>	<u>9982</u>
Less :		
Bank overdraft ...	£383	—
Subscriptions paid in advance ...	21	18
Debts due by club ...	6745	3451
Due to Endowment Fund ...	214	—
	<u>7363</u>	<u>3469</u>
Total net assets ...	<u><u>£4552</u></u>	<u><u>£6513</u></u>

Investments as at 30th June 1976

	Market Value	At cost	At cost
Safeguard Industrial Investments Ltd.—			
875 Ord. shares of 25p each ...	£394	£508	£508
£950—6½% Treasury Loan 1976 ...	945	946	946
£1300 British Electricity 3% Guar. Stock 1974/77 ...	1254	952	952
	<u>£2593</u>	<u>£2406</u>	<u>£2406</u>

ENDOWMENT FUND

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

Revenue account for the year ended 30th June 1976

		Year to 30/6/76	Year to 30/6/75
INCOME			
Interest and Dividends received (gross)		£456	£401
EXPENDITURE			
Grants as detailed in Report of Council		200	160
Excess of income for the year		<u>£256</u>	<u>£241</u>

Balance Sheet as at 30th June 1976

Endowment Fund as at 30th June 1975		£3309	£2791
Add: Legacy received during year		100	500
Donation received during year		3	18
		<u>3412</u>	<u>3309</u>
Accumulated revenue as at 30th June 1975		1051	810
Add excess of income for year		256	241
		<u>4719</u>	<u>4360</u>
Add grant made in 1975 refunded		50	—
		<u>£4769</u>	<u>£4360</u>
Made up of :			
Investments at cost as below		£3011	£3011
Edinburgh Building Society :			
Capital account		842	786
General account		852	796
Due by Club's general funds		214	—
		<u>4919</u>	<u>4593</u>
Less due to Club's general funds		—	33
		<u>4919</u>	<u>4560</u>
Less grants allocated but not yet paid		150	200
		<u>£4769</u>	<u>£4360</u>

Investments as at 30th June 1976

	Market Value	At cost	At cost
1952 Units of Equities Investment Fund for Charities	£2233	£1000	£1000
£1140 5% Exchequer Stock 1976/78	1054	1000	1000
£440 8½% Conver. Unsecured Loan Stock 1993/98 British Printing Corporation	222	441	441
500 St Andrew Trust Ltd., Ord. 25p	425	570	570
	<u>£3934</u>	<u>£3011</u>	<u>£3011</u>

HOUSE FABRIC FUND

Summary of accounts for year to 30th June 1976

	Year to 30/6/76	Year to 30/6/75
RECEIPTS		
Balance as at 30th June 1975	£103	£12
Year's rent from Major A. D. Peirse-Duncombe	312	312
Year's rent from British Council for Rehabilitation of Disabled	175	140
Grants from S.O.C. Revenue account	200	100
Miscellaneous interest	9	10
	£799	£574
EXPENDITURE		
Repairs and maintainance	£172	£103
Property burdens	£536	
Less contribution from sub-tenant	120	334
Insurance	90	34
	678	471
Contribution to rates still due from sub-tenant	120	—
On deposit with Edinburgh Building Society	1	103
	£799	£574

EDINBURGH, 12th November 1976.—I have audited the foregoing Revenue Accounts for the year to 30th June 1976, 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

Your council submits the following report for the year 1975/76 :

Membership At 30 June 1976 the club had 2818 members, a net gain of 302 during the year, both totals the best ever. Three ordinary members transferred to life membership; 613 new members were enrolled, including 5 life members, 118 juniors and 24 children nominated as family members; and 221 members took advantage of the reduced subscription for pensioners. In the table below, family members are counted as two people, and nominated children, for whom no subscription is paid, are shown separately.

Year to 30 June	1971	1972	1973	1974	1975	1976
Honorary	5	5	4	4	4	4
Life	10	14	14	18	22	29
Ordinary	1889	2054	2230	2312	2175	2406
Junior	282	298	312	317	252	299
Nominated children	—	—	—	—	63	80
	<u>2186</u>	<u>2371</u>	<u>2560</u>	<u>2651</u>	<u>2516</u>	<u>2818</u>
Change	+37	+185	+189	+91	-135	+302

The encouraging increase in membership reflects recruiting by branches and individual members and a special membership drive; a letter from the president to all Scottish members of the RSPB was enclosed with the March 1976 issue of *Birds* and resulted in 150 new members joining the SOC. Your council is looking at other ways in which membership might be increased and asks all members to help by encouraging friends to join the club.

The number of deeds of covenant rose from 566 to 629, representing 741 members and bringing a tax repayment of £1186 during the year. This excellent and painless way of helping the club's funds is open to the majority of members, since few will escape the tax net; and everyone who can is urged to consider covenanting.

Finance The revenue account shows a deficit of £2385 for the year, arising mainly from increases in salaries and other expenses, a very substantial increase in the cost of *Scottish Birds*, and a smaller increase in the bookshop surplus than planned. Inflation pushed up expenses, and recession depressed sales, while subscription rates remained unchanged. Urgent consideration has been given to this problem by the management committee and council, and a small surplus has been budgetted for the current year. Council is most anxious to avoid putting up subscription rates meantime, but the club inevitably needs increased income every year simply to offset inflation. One practical way in which every member can help to hold down subscription rates is by encouraging others to join the SOC.

Branch activities All branches enjoyed a varied programme of winter meetings and lectures and arranged summer and winter excursions. The Dumfries and Stirling branches organised weekends in the Solway goose grounds and Argyll respectively. Many speakers and leaders contributed freely to these occasions and, on behalf of the club, council records its appreciation of their work.

New Galloway group A proposal by Helen Halliday to form a group in New Galloway was supported by council and the first meeting was held in autumn 1976. Those who find difficulty in winter travel to Dumfries and Wigtown will appreciate the programme of monthly meetings arranged by Mrs Halliday.

Annual conference The 28th annual conference and 39th annual general meeting, attended by some 290 members and guests, were again held at Stirling University. It was encouraging to see increased attendance, and those present on the Saturday morning listened to an excellent series of talks on 'The Cairngorms and their birds'. Professor V. C. Wynne-Edwards introduced the subject with 'An ecological perspective', and was followed by Desmond Nethersole-Thompson on 'Some pioneers and researchers' and Dr Adam Watson on 'Recent research and human pressures'. Three short talks were given on the Sunday morning, covering

ornithological work in Scotland: Dr David Bryant spoke on 'House Martins', Dr David Houston on 'Crows and sheep' and Alistair Smith on 'Some aspects of Sandwich Tern behaviour'.

During the conference, and later at branch meetings, members were asked for their views on the location and date of the annual conference. While January was unsuitable for a few, the majority of those expressing an opinion preferred a university to a hotel, on the grounds of cost, and accepted that January was preferable to September, the only other possible month available at Stirling University. Stirling was accepted as the most conveniently situated university for the majority of members and it offered very good facilities. Search for a suitable location that could accommodate the conference at reasonable cost in October continues, but there seems little prospect of finding one, and meantime the 1977 conference will be at Stirling University.

"Scottish Birds" Four issues, with 264 pages of text and plates, were published during the year. An index to volume 8 is provided for in the accounts and was issued in autumn 1976. The high cost of production and postage means that in the immediate future the quarterly issues will contain fewer pages than recently. Publication is now more or less back on schedule, though the Scottish Bird Report is still a problem because of the great volume of material to be assimilated and printed. Various improvements in the journal were planned or introduced during the year, with a view to increasing its appeal to the general reader, and council would welcome comments on this matter.

Research and discussion groups Council gave further thought to the development of research and discussion groups within the club, and to ways in which beginners might be involved in local activities, and sought the views of branch committees. A policy statement on 'Ornithological research, and fieldwork and discussion groups' was approved and published (*SB* 9: 140). A proposal for a working weekend conference for active fieldworkers is at present being developed, but it has still to be decided whether this should take the form of a field exercise or of group discussion to define worthwhile ornithological projects for the future.

Fieldwork As in previous years, members have been involved with many of the surveys organised by the national ornithological bodies, including the Ornithological Sites Register (BTO), Wildfowl and Goose Counts (Wildfowl Trust), Beached Birds Survey (RSPB), and Common Birds Census (BTO). Anyone wishing to take part in these or other surveys should contact the organisations concerned or the club secretary. A full report of the club's Effluent Enquiry has been published (*SB* 9: 5-36), and a paper is in preparation on the Crow Hybrid-Zone Enquiry. Results of the BTO's 1975 National Survey of Rookeries have not yet been published, and the SOC Redwing Breeding Survey continues. No new club enquiries were launched during the year, but the research committee would welcome proposals from members wishing to organise specific projects.

Area boundaries Council considered the report of the research committee on area boundaries but in view of uncertainties about present and future political boundaries no final decisions were taken and the report has not been published.

Conservation Members continued to be deeply involved in conservation matters through the principal bodies in the field, the Royal Society for the Protection of Birds and the Scottish Wildlife Trust. Last year the club supported the RSPB in opposing the establishment of an oil refinery at Nigg Bay. Following a lengthy public enquiry the reporter came down against the proposal, but his recommendation was overruled by the Secretary of State.

Endowment fund A legacy of £100 from Miss Marie Dare, who was a life member of the club and died during the year, was added to the endowment fund, and council gratefully acknowledges this bequest. The club secretary would be pleased to provide other members who wish to remember the SOC in this way with a suitable wording for doing so; such payments are of course exempt from capital transfer tax.

During the year grants of £200 were approved by council. The University of East Anglia sent another expedition to Shetland to continue earlier studies of skuas and Puffins and was given £50. David Lea was given £50 towards boat expenses of his survey of Storm Petrel sites in Orkney, and this study will continue over the next few years. Aberdeen University Bird Club received £50 towards the cost of an expedition led by Peter Evans to survey the Great Black-backed Gulls and Puffins on North Rona and Sula Sgeir. Bob Swann and others continued their studies of Manx Shearwaters and Shags on Canna and were given £50 for boat hire and equipment. Reports on all these expeditions and surveys will be submitted for publication in *Scottish Birds* or deposited in the reference library.

The Lodge Trust The trustees of the Lodge Trust generously presented the club with four original paintings by P. A. Clancey which had been used to illustrate Dr Bannerman's *Birds of the Atlantic Islands*. These were to be used for the benefit of the club, and since the end of the year they have been sold and the proceeds added to the dry rot fund.

SOC committees During the year the management committee considered a report on the various committees of the club prepared by the president, and council adopted the proposals as a guide to the regulation of these committees and the turnover of their membership.

The management committee deals with important problems requiring prompt attention and provides a small forum for discussion of complex matters and formulation of proposals for council. It now consists of the president, vice-president, honorary treasurer and three to six other council members (or non-members with council approval).

The Scottish bird records committee, set up in 1954 to consider published records, produced reports for 1953 to 1965 but had not met for 10 years. As its purpose had been largely taken over by the annual Scottish Bird Report the committee was disbanded, and the president wrote to thank its distinguished members for their valuable services.

At present there are three other committees—library, research, and editorial. Members of specialist committees, who need not all be council members, will now come up for re-election by council at least every third year, to allow for some turnover of membership where this seems appropriate.

Scottish Centre During the year the outbreak of dry rot at 21 Regent Terrace was treated and the affected parts restored, at a final cost of £2862. Through the generosity of many individual members, the efforts of branches in fund-raising activities, the annual raffle, which raised £617, and an ex gratia contribution from the club's insurers, a total of £2054 was raised by 30 June 1976, the end of the club's financial year. A further £145 was received by the end of August, and the 1977 raffle and other fund-raising events being planned for 1976/77 should just about clear the balance. Council records its gratitude to all who have helped in this crisis by raising money to meet the large bill for repairs, and it is particularly gratifying that no part of it has had to be met from the club's reserves. Restoration was completed by the end of November 1975 and the ground floor returned to normal working by Christmas; all redecoration was done by members, and the basement was in full use by February.

Many visitors called at the Scottish Centre for Ornithology and Bird Protection and were given advice and information about birdwatching in Scotland. Meetings of the Fair Isle Bird Observatory Trust, the Scottish committee of the RSPB, the Isle of May Bird Observatory and Field Station committee, as well as SOC council and committee meetings were held in the centre during the year, and informal discussion group meetings took place regularly during the winter.

Library The annual allocation of funds to buy new books, together with journals, books and reprints generously given by members, have added to the scope of the club's very comprehensive library. Members are reminded that it is open during office hours or at other times by arrangement with the club secretary.

Bookshop Book sales were up 35% over last year, to a total of more than £28,000. Greatly increased postal rates made it necessary to increase the charge on small orders during the year, and from autumn 1976 a flat rate charge was introduced on all orders, irrespective of size. Once again the British Trust for Ornithology invited the club to take a display of books to its annual conference, and council records its sincere thanks for this opportunity.

Club representation The SOC continued to be represented on the British Section of the International Council for Bird Preservation by Sir Landsborough Thompson and Frank Hamilton, and by Dr Roger Bailey on the Duck Working Group of the International Wildfowl Research Bureau. Council records its gratitude to these members for their work on the club's behalf.

Secretarial staff In July 1976, after two years on the staff, Mrs Christine Dunsire left to work nearer home, and Mrs Jo Bainton was welcomed in her place.

Acknowledgments In conclusion council wishes to record its great appreciation of the devoted and hard working staff, without whom the club could not function, and of all those who give their time and help and financial support in so many ways, as local recorders or committee members, and at the conference, local meetings and excursions, to ensure that the SOC gives enjoyment and pleasure to its members.

For the Council,

ANDREW T. MACMILLAN, President.

COUNCIL AND OFFICIALS OF THE CLUB FOR SESSION 40

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., Ph.D., F.R.S.E.; George Waterston, O.B.E., LL.D., F.R.S.E.

President: Andrew T. Macmillan, C.A.

Vice-President: Miss Valerie M. Thom.

Hon. Treasurer: Maxwell K. Hamilton, C.A.

Hon. Treasurer House Fabric Fund: D. G. Andrew, W.S.

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

Deputy Secretary and Librarian: Mrs George Waterston.

Editor and Bookshop Manager: D. J. Bates.

Membership Secretary: Mrs R. D. Smillie.

Council: A. Anderson, J. H. Ballantyne, J. Edelman, Miss N. J. Gordon, Dr J. J. D. Greenwood, T. Irving, J. K. R. Melrose, J. Mitchell, H. Robb,

Hon. D. N. Weir. **Young Members coopted for 1976/7**: I. Gibson, M. W. Fraser.

Branch Representatives to Council: A. Anderson (Aberdeen); J. K. R. Melrose (Ayr); R. T. Smith (Dumfries); P. N. J. Clark (Dundee); J. M. S. Arnott (Edinburgh); D. L. Clugston (Glasgow); R. H. Dennis (Inverness); I. G. Cumming (St Andrews); T. D. H. Merrie (Stirling).

BRANCH AND GROUP OFFICE BEARERS

Aberdeen: Chairman, A. Duncan; Vice-Chairman, B. Stewart; Secretary, Miss F. J. Greig; Committee, J. Chapman, J. Dunbar, M. Heubeck.

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

Dumfries: Chairman, B. S. Turner; Vice-Chairman, J. Skilling; Secretary, W. Austin; Committee, Dr N. E. Armstrong, T. Irving, T. Nisbet, R. T. Smith.

Dundee: Chairman, P. J. N. Clark; Vice-Chairman, D. B. Thomson; Secretary, Mrs A. Noltie; Committee, B. M. Lynch, B. Pounder, J. Rogers, Dr K. M. Watson.

Edinburgh: Chairman, J. M. S. Arnott; Vice-Chairman, L. W. G. Alexander; Secretary, Mrs D. R. Langslow; Committee, I. V. Balfour-Paul, D. Moss, J. B. Murray, Mrs A. D. Peirse-Duncombe.

Glasgow: Chairman, D. L. Clugston; Vice-Chairman, R. D. N. Brooks; Secretary, Mrs I. T. Draper; Committee, Miss K. M. Calver, R. W. Forrester, H. Galbraith, R. M. C. Lambie.

Inverness: Chairman, R. H. Dennis; Vice-Chairman, Rev. J. M. Crook; Secretary, W. G. Prest (to 31.1.77), Miss E. M. Campbell (from 1.2.77); Committee, M. I. Harvey, J. A. Love, D. W. McAllister, Mrs W. Morrison.

St Andrews: Chairman, I. G. Cumming; Vice-Chairman, A. J. Backx; Secretary, Miss M. M. Spires; Committee, Miss D. E. Rowling, J. S. Wiffen, J. G. Young.

Stirling: Chairman, T. D. H. Merrie; Vice-Chairman, R. J. Young; Secretary, A. B. Mitchell; Committee, D. Dodds, Miss E. M. Laphorn, D. W. Sandeman, D. Thorogood.

GROUPS

New Galloway: Secretary, Mrs K. C. R. Halliday.

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

Wigtown: Chairman Dr P. G. Hopkins; Secretary, G. Sheppard.

MANAGEMENT COMMITTEE

M. K. Hamilton (Chairman), D. G. Andrew, J. M. S. Arnott, Dr I. T. Draper, A. T. Macmillan, H. Robb, Miss V. M. Thom.

LIBRARY COMMITTEE

Dr George Waterston (Chairman), Ritchie Seath (Hon. Librarian), D. L. Clugston, Dr J. J. D. Greenwood, A. T. Macmillan, Dr I. D. Pennie.

RESEARCH COMMITTEE

A. T. Macmillan (Chairman), R. H. Dennis, Dr I. Newton.

EDITORIAL COMMITTEE

A. T. Macmillan (Chairman), D. L. Clugston, R. H. Dennis, F. D. Hamilton.

CLUB REPRESENTATION

British Section, International Council for Bird Preservation : Sir Landsborough Thomson, F. D. Hamilton.

International Wildfowl Research Bureau, Duck Working Group : Dr R. S. Bailey.

HONORARY MEMBERS

Seton Gordon, P. W. G. Gunn, Sir Landsborough Thomson.

SUMMER EXCURSIONS

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

INVERNESS BRANCH SECRETARY

W. G. Prest has moved to a new post in Edinburgh. Will members please note that the new Secretary of the Inverness Branch is Miss E. M. Campbell, 4 Old Mill Road, Inverness IV2 3HR.

STIRLING BRANCH - WORKING WEEKEND

"Birds of the River Devon", 27/29 May 1977

A favourable response was received to the circular sent out with the winter 1976 number of the journal, and the working weekend will take place from 27 to 29 May 1977. It is intended to cater for both the experienced birdwatcher and the beginner. A census will be carried out of the birds in the environs of the River Devon from its source in the Ochil Hills to its confluence with the River Forth. An informal meeting will be held on the Saturday night over a buffet meal in a hotel. On the Sunday any further fieldwork required will be carried out and there will be a further meeting.

Full information has been sent to all who have already enquired, but anyone else wishing an application form should write, enclosing an s.a.e., to the Stirling Branch Secretary, Sandy Mitchell, 10 Kenilworth Court, Bridge of Allan, Stirlingshire FK9 4EJ.

DRY ROT - 21 REGENT TERRACE

We are delighted to announce that following various fund raising events in 1976 and 1977, together with the proceeds of this year's raffle, we have now completely cleared the cost of repairs to and redecoration of this building, following the outbreak of dry rot discovered in the summer of 1975.

This year we raised £566 from the sale of raffle tickets from which £43 was deducted for expenses (£34 for printing; £6 for prizes and £3 for postage) leaving a net profit of £523. This is an excellent result for which all who helped are to be congratulated. Any member who wishes to receive a list of the winning ticket numbers should write to the Club Secretary enclosing an s.a.e.

Since the announcement in the 1976 summer number of the journal the following sums are most gratefully acknowledged: £155 raised at an Edinburgh Branch coffee morning; £50 from the Glasgow Branch and £55

donated by Mr and Mrs J. H. B. Munro, being proceeds of a lecture they gave in Edinburgh.

It is extremely gratifying that, in these times of economic stress, over £3000 has been raised in 18 months; and the Club acknowledges most gratefully the work done by all who helped in any way to raise this sum.

Branch and Group News

SOC annual conference at Stirling

As usual the fun began with Friday evening's slide show, culminating with Bobby Smith's series of an unusual Dippers' nest close to running water—in a lavatory!

Beginning Saturday's theme of birds of prey, Roy Dennis revealed that in the pesticide era Scotland's relatively clean environment supports substantial remnants of Europe's decimated raptors, despite pressure from unscrupulous keepers, collectors and falconers. We now hold 30-45% of her Peregrines, 20% of Golden Eagles, 15-20% of Hen Harriers, but only 0.5% of Ospreys. Dick Balharry illustrated Highland scenery and fauna but regrettably left no time for discussion of the questions he raised about Golden Eagles. Ian Newton showed the novelty of radio telemetry to plot the surprising hunting ranges of breeding Sparrowhawks. Using graphs with admirable care and clarity he plotted the unmistakable damage by pesticides to breeding success. Richard Porter's spectacular slides whetted our appetites for the mass migration of raptors from Europe and through the Middle East. He also indicated how censusing at the few watch points could monitor their vulnerable populations.

After the annual dinner, genially chaired by President Macmillan, Richard Porter demonstrated his versatility by delivering a lively speech spiced with amusing ornithological anecdotes. Nobody hearing his lecture and after-dinner speech could have guessed how these twin ordeals had daunted him beforehand. No less amusing was Iain Munro's reply, which he enlivened by getting his notes in apparent confusion, some suspected deliberately. No two speakers could have contrasted more in appearance and manner, yet both combined to give the wittiest performance heard for some time.

Malcolm Castle led the Sunday lectures on domestic projects by ably summarising the rookery census in his uniquely endearing style. Norman Atkinson showed us the problems and rewards of studying Little Terns, and finally the progress of the Sea Eagle re-introduction was reported by John Love.

We all enjoyed the high quality lectures and displays but many felt our wide dispersion on a university campus uncongenial to socializing. Despite some valiant efforts sobriety was rife, with the odd notable exceptions.

D. J. BATES

Scottish Ringers' Conference at Carrbridge

Even as a non-ringer I enjoyed this one-day conference organized by the Highland Ringing Group at Landmark Centre in November. Giving news and views from the BTO Ringing Office Chris Mead described the new lightweight pneumatically-fired nets, onomatopoeically called phut-nets. Referring to the many auks killed in fishing nets he recommended more Guillemot ringing at safe colonies, and he dwelt on the alarming recoveries of many terns trapped in West Africa.

David McAllister gave some interesting results of ringing Siskins at garden feeding sites in the Highlands. To discourage flocks from flying

over instead of into the mist-nets, Chris Mead suggested launching fris-bees over them.

Mike Harris has thoroughly investigated the reported Puffin decline by counting and colour ringing. Biometrics show size differences between Atlantic and North Sea individuals and there is no other evidence of interchange. Although colonies are bewilderingly difficult to census there is no reliable evidence of decrease in the former, while the North Sea population is growing.

Norman Atkinson reported on Purple Sandpiper studies, Bob Swann recounted work on the rich avifauna of Canna with its Corncrakes and shearwaters, and Bob McMillan described one of the few big hirundine roosts in Scotland, in the Tay reedbeds.

In a talk full of stimulating ideas Doug Weir recommended amateur raptor projects including several marking techniques. His advice ranged from how to avoid nest desertion and tetanus to collecting the maximum data from nest visits.

The meeting proved a valuable exchange of ideas in delightful surroundings.

D. J. BATES.

Current Notes

These notes include unchecked reports and are not intended as a permanent record, nor will they be indexed. Please send items of interest to local recorders for forwarding to the editor at the end of January, April, July and October.

Rare migrants reported since our autumn summary were **Balearic Shearwater** in Saligo Bay (Islay) on 11 Sep, **Leach's Petrels** in October off Frenchman's Rocks (Islay) on 10th and corpses in Aberdeen at Forvie on 24th and near the Ythan on 31st. A disabled **Red-footed Falcon** found at Lossiemouth (Moray) in June is still in care. A **Ross's Gull** was off Frenchman's Rocks on 15 Aug. Fife Ness produced an **Ehrenberg's Redstart** *Phoenicurus p. samamisisicus*—a Near Eastern race and only the 2nd British record—and on 18 Sep a **Greenish Warbler**.

November arrivals were few, except **Fieldfares**, but thrushes still abounded in the west and south. Fair Isle reported **Rough-legged Buzzard** from 2-15th, **Lapland Bunting** on 2-3rd, 5 **Long-eared Owls** on 3rd, 125 **Rooks** with 9 **Jackdaws** on 10th, when others reached Shetland, and 100+ **Woodcock** on 15-16th. Late migrants included **Red-backed Shrike** at Newburgh (Aber) on 7 Nov, **Wheatear** on Fair Isle on 13th, **House Martin** at Stonehaven (Kinc) on 13th, **Chiffchaff** on Fair Isle on 19th and **Garden Warbler** on 20th, and **Swallow** in Edinburgh on 8 Dec.

Great Crested Grebe numbers have been up this winter with 768 off Edinburgh and 187 in L Ryan (Wig) where there were 11+ **Slavonian Grebes**. A blue-phase **Fulmar** was at Tantallon (E Loth) on 15 Jan and a **Red-crested Pochard** visited Duddingston (Midl) in early Dec. Forth **Scaup**, **Pochard** and **Goldeneye** numbers were low for Edinburgh but high for Fife, respective maxima being: **Scaup** 1,766 and 1,311; **Pochard** 1,419 and 1,500; **Goldeneye** 1,787 and 1,068. As usual **King Eiders** were at L Fleet (Suth) and Crombie Point (Fife); also at Toft and Sullom Voe (Shet) in Dec and L Ryan in Jan. **Goosanders** peaked at 110 at Skene (Aber) on 7 Nov; **Smews** were reported from Benston (Shet), Gladhouse (Midl) and Aberlady (E Loth) in Dec and Strathbeg (Aber) and Bridge of Dee (Kirk) in Jan. **Bean Geese** followed the usual pattern of 60-70 at Gelston (Kirk) from late Dec-Jan, whilst one visited Biggar (Lan). For what it is worth, **Snow Geese** returned to Islay (blue phase) and Southernness (Kirk) and

in early Dec 5 appeared at Mugdock res (Stir). Five **Brent Geese** stayed on L Ryan in late Dec-Jan. The only **Bewick's Swans** in number were 10 near Drem (E Loth) in Dec-Jan. A **Marsh Harrier** was at Strathclyde Park, Hamilton (Lan) in Dec and a **Gyr Falcon** near Drem on 23 Jan. A late family party of 3 **Cranes** turned up at Maryculter (Aber) about Christmas. A **Lesser Golden Plover** was again at Caerlaverock in Dec. Twenty **Jack Snipe** at Corbie (Aber) on 7 Nov was a high count. A **Green Sandpiper** was at Irvine (Ayr) in Jan and 17 **Ruffs** wintered near Aberlady but very few in Aberdeen. Two **Great Skuas** in the Forth in Dec and **Arctic Skuas** at Balmedie (Aber) and Musselburgh (Midl) in Nov were late. Two **Ivory Gulls** visited Wick (Caith) on 25-26 Nov, one until 30th, and amazingly one was trapped at bait in a garden at Westhills, Skene, about New Year. **Mediterranean Gulls** at Musselburgh in Dec-Jan and the Tyne est (E Loth) in Jan were only the 7-8th Scottish records. For the 2nd winter running a **Sandwich Tern** was in the Forth—at Aberlady on 22 Jan and 6 Feb—perhaps the only British Jan records. Oiled **Little Auks** were found dead in Largo Bay (Fife) and North Berwick (E Loth) in Dec. The Tyne **Shore Lark** flock rose to 81 in Dec but fell to 51 in Jan—probably record numbers for Scotland. Small numbers visited Montrose (Angus) the Eden est (Fife) and Bowmore (Islay) in Oct, up to 7 on Fair Isle in Nov, one by Jan, and 13 at Aberlady on 4 Dec. Forty **Ravens** near Gladhouse (Midl) on 8 Jan were unusual, as were 15 **Hooded Crows** wintering around Gullane (E Loth) and a **Nutcracker** at Biggar. More **Blackcaps** passed through Fair Isle in Nov-Dec and wintering is widespread again. **Waxwings** were rare with 12 at Dinnet (Aber) on 21 Nov and a few at St Andrews and Glenrothes (Fife) in early Dec. Over 200 **Reed Buntings** were counted in Clydesdale Forest (Midl) in midwinter. By extraordinary coincidence, a **Little Bunting** was trapped at the same Dingwall (Ross) Reed Bunting roost as one in Nov 1975 and is possibly the 1st British Jan record.

Latest news—dead **Bittern** R. Deveron (Banff) 23 Jan, ♀ **Ring-necked Duck** East Lothian 6-23 Feb, and **Sabine's Gulls** Inverness harbour and Dirleton (E Loth), 2 **Sandwich Terns** Braefoot Bay (Fife) and **Swallow** Dunbar all mid Feb.



OYSTERCATCHER WING by Keith Brockie.

CORRECTION

First recorded erythristic eggs of Arctic Skua and Herring Gull in Britain (9: 145) The second paragraph, last line, should read: "dark brown on a light ground".

S.O.C.

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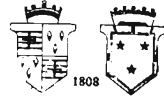
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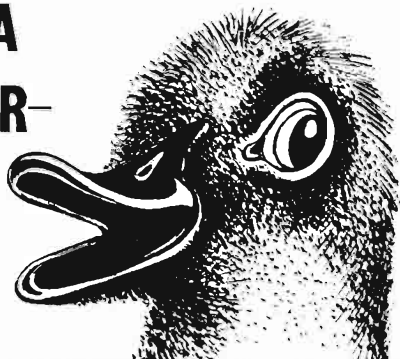
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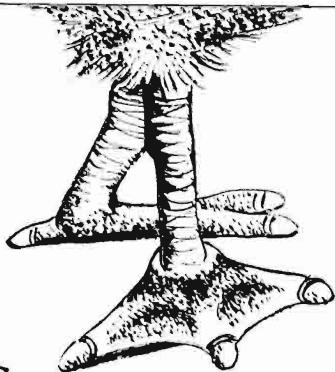
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