SCOTTISH BIRDS

THE JOURNAL OF THE
SCOTTISH ORNITHOLOGISTS' CLUB

Volume 7 No. 4 WINTER 1972 Price 50p

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THE JOURNAL OF THE SCOTTISH ORNITHOLOGISTS' CLUB

Vol. 7 No. 4 **Winter 1972**

Edited by Tom Delaney assisted by D. G. Andrew and B. G. Grattage

Editorial

Loch of Strathbeg. Situated in the dunes at the very northeast point of Aberdeenshire, the Loch of Strathbeg is a unique and fascinating place. It is a site of geological, botanical and ornithological interest, a wild place where anyone can see and appreciate a great natural spectacle.

For ornithologists the main importance of the loch is its large wintering flocks of Pink-footed and Greylag Geese, Whooper and Mute Swans, Mallard, Pochard and Tufted Duck : on the criteria set by the 1971 International Conference on the Conservation of Wetlands and Wildfowl it qualifies several times over as a site of international importance. The area is also of interest for migration observation, and seawatching from Rattray Head close by has established the value of the location for studies of seabird movement. The area supports a wide range of breeding ducks, waders, terns and common passerines.

More than a year ago the Ministry of Defence planned to build a large radio station at the disused Crimond airfield by the side of the loch. Despite considerable objections from conservationists concerned at the danger that large numbers of birds would be killed by collision with the huge antenna arrays, the Ministry apparently still intend to go ahead with the plan. Now, however, yet another proposal threatens the site; the Gas Council wish to build a terminal there for the reception, treatment and onward transmission of natural gas from the North Sea. Few details have been given, but it is understood that the installation would be similar in size to that at Bacton in Norfolk.

It seems impossible that the construction of such a major project could be carried out without serious damage to the rich and diverse biological interest of the area, and a plan indicating a possible corridor for the pipeline to come ashore through the dunes and then pass through the middle of the loch hardly demonstrates much consideration for conservation aspects. Major disturbance of the dune system at this point could possibly even endanger the continued existence of the loch.

It is because of the more and more frequent emergence,

associated with the development of North Sea oil and gas, of schemes like this that endanger sites of ornithological importance in Scotland that Council considered it necessary to formulate a Club policy on conservation and the environment. In accordance with the statement on that policy (see p. 167) the Club has made a strong objection to the Aberdeenshire County Council concerning the Loch of Strathbeg proposal, and many other organisations and individuals objected also.

To conservationists it seems intolerable that places of such rare and wonderful interest should be threatened by industrialisation and outrageous that sites well known to be of major international wildlife importance should be open to such attack. The Nature Conservancy and the Countryside Commission for Scotland are working on a report on development and conservation on the east coast of Scotland. It is hoped that its publication will assist in the creation of a sensible development strategy that will steer major projects away from such ecologically sensitive zones and so eliminate some of the major clashes of interest between developers and conservationists. It would seem wise, therefore, that decisions on big schemes should not be made locally until this strategy emerges and that decisions not yet implemented should be reviewed in its light.

In the meantime, it does seem that a strong expression of public opinion has helped in this case as elsewhere, and members are urged to make their views known to the appropriate authorities whenever important sites are threatened in their areas.

Local recorders. Nick Picozzi, joint local recorder for Aberdeenshire and North Kincardineshire, has indicated his wish to give up the recordership owing to pressure of other commitments. We should like to thank him for all his good work in this task over the past years. We feel sure that local observers will echo this sentiment and hope they will give their full co-operation to his successor, Alan Knox, and to Billy Murray, the other joint recorder for the area. Their addresses are given below along with that of the recorder for Caithness, which was omitted from the list given in *Scot. Birds* 7: 111.

Aberdeenshire, North Kincardineshire Alan Knox, Zoology Department, Aberdeen University, Tillydrone Avenue, Aberdeen AB9 2TN, and W. Murray, Culterty Field Station, Newburgh, Aberdeenshire AB4 0AA.

Caithness Mrs P. Collett, Sandyquoy, East Gills, Scrabster, Caithness.

SOC research. The work of the SOC Research Committee was described in an editorial in the autumn number, and some of

the projects it had under consideration were mentioned (*Scot. Birds* 7: 104-105). Organisers have now been appointed for some of these enquiries, including the investigation on birds and effluent, the breeding surveys of Great Crested Grebe and Redwing and the Crow hybrid-zone enquiry. Requests for information or assistance on some of these projects are given in the Enquiries section.

A survey of current ornithological research in Scotland has been carried out by I. H. J. Lyster and will, it is hoped, be published in our next issue.

Current literature.

Collared Doves in Britain and Ireland during 1965-70. R. Hudson, 1972. *Brit. Birds* 65: 139-155. Includes county-by-county survey of status in Scotland.

Behaviour of the Tystie during feeding of the young. P. J. B. and E. J. Slater, 1972. *Bird Study* 19: 105-113. Fair Isle study.

The Puffin on St Kilda 1969-71. J. J. M. Flegg, 1972. *Bird Study* 19: 7-17.

The Pheasant and the Sparrowhawk. J. G. Young, 1972. *Birds* 4: 94-99.

Fair Isle Bird Observatory Report for 1971.

Ornithological studies on Foula 1971. Brathay Exploration Group. Field studies report no. 17, 1972. From Brathay Hall Trust, Ambleside, Westmoreland, price 20p.

The Peregrine poulation of Great Britain in 1971. D. A. Ratcliffe, 1972. *Bird Study* 19: 117-156.

Club policy on conservation and the environment

1. In recent years there has been a rapid increase in threats to birds in Scotland as a result of pollution and industrial development. With the discovery and exploitation of oil fields around our coast, we are now facing a potential environmental crisis, with wide-ranging changes in land use and shifts in human populations which may radically affect the variety and distribution of the birds we watch and study.

2. Members of the Club must feel concern for the future and will wish to know how the Club, or they as individuals, can help in any way to mitigate the impact of these changes.

3. At recent meetings the Council has discussed the matter at some length and has felt that it should issue a policy state-

ment on just how the Club can make an effective contribution to bird conservation, and ways in which individual members can help.

4. The Council feels that the basic aims of the Club should continue to be as stated in the Constitution. Foremost among these are the encouragement and direction of the study of Scottish ornithology in all its branches, and co-operation in research projects with the British Trust for Ornithology and other bodies. To this end the Research Committee will make recommendations for local and national projects which will often be important for conservation reasons.

5. The Club should associate itself with, and lend full support to, voluntary and governmental conservation bodies in particular cases, and the Secretary will continue to maintain close contact with these bodies; but the Club should not normally take independent action on conservation matters. It is felt that threats to birds and their habitats can best be handled by the specialist conservation bodies constituted specifically for this purpose. Further duplication of effort in the conservation field should be avoided, and the Club should not develop into yet another conservation body. Its function should be to supply facts and data to conservation bodies such as the Scottish Wildlife Trust, the Royal Society for the Protection of Birds and the Nature Conservancy.

6. Direct and independent participation in conservation and environmental controversies in the Press or elsewhere would require the appointment of additional staff with specialised knowledge to deal adequately and efficiently with the multiplicity of problems if it is to be effective. It is becoming a formidable task alone to keep abreast of the amount of literature and scientific papers, and it would require the engagement of a Newscutting Agency to monitor public opinion and general information. (In the *Scotsman* alone, between 14th and 21st September 1972, 373 column inches were devoted to oil and the environment). It would also mean close liaison with governmental departments, planning officers and development companies.

7. The Council wishes however to encourage individual members to help in the following ways :

(a) By personal support for the voluntary conservation bodies.

(b) By helping the Seabird Group and RSPB in monitoring annual counts of auk colonies, and assisting with the Beached Birds Survey; also with wildfowl counts.

(c) By keeping close touch with local representatives of the conservation organisations and reporting to them or to the Club Secretary at once any information on

developments posing a threat to birds or the environment.

(d) By gaining knowledge of local areas and collecting data on species and numbers throughout the year, and by supplying such information to regional recorders or to the editors of local reports, so that factual evidence of the importance of a threatened area is immediately available.

(e) By writing privately to the Press with their views on any threats in their areas.

8. To keep members better informed, Council has asked Tom Delaney and David Merrie to prepare a paper on 'North Sea oil developments and their potential impact on birdlife in Scotland', to be published shortly in *Scottish Birds*. This will be followed by others of an informative nature, and by reports on assistance given by the Club to conservation bodies.

October 1972 A. DONALD WATSON, *President.*

BTO Ornithological Atlas

Early in 1968 the BTO decided to go ahead with the most ambitious co-operative field project they had ever attempted, the Atlas of Breeding Birds of Britain and Ireland. The aim of the five-year project was to determine accurately the current distribution of our breeding birds. The SOC Council immediately agreed to give whole-hearted support, and I was asked in April 1968 to organise efforts in Scotland.

Unfortunately this was too late to allow a general appeal to members at Branch meetings, and so progress made in Scotland during 1968 was entirely the result of the initiative and hard work of individuals who pressed on independently. During the following winter the net was spread much more widely, and by the beginning of the 1969 season volunteers had come forward to organise efforts in nearly every part of Scotland. Thanks to the enthusiasm and competence of these Regional Organisers only a minimum amount of co-ordination has been required from myself.

By the end of 1970 it was clear that the survey had been whole-heartedly accepted everywhere and that cover was likely to be far more complete than even the most optimistic had hoped. Clearly, in large areas of sparsely populated country help was needed from outside, and in 1971 and 1972 flying squads from Scotland and beyond were co-ordinated by Dr Sharrock, the National Organiser. Tim Sharrock himself, in addition to dealing with the enormous amount of paper work, surveyed large parts of Ireland and of Scotland in 1971 and 1972, and it looks as if altogether a very high standard of coverage has been achieved.

Now that the data have been collected, there will be many months of collation and preparation before the Atlas can go to press, and its appearance will be eagerly awaited by all who have taken part.

Immense thanks are due to all those many people who participated. I would like to acknowledge particularly, since I know how much work has been involved, the very great amount of time and energy given freely by the Regional Organisers in Scotland. The field work has been outstanding, but of course that part is self-rewarding. The paper work has, in many cases, been a monumental task, and I hope that the Club as a whole appreciates how much these Regional Organisers have done. Without their enthusiasm the project would not have been possible, and the successful conclusion of the field work is a tribute to their efforts.

C. G. HEADLAM.

Distribution, status and movements of feral Greylag Geese in southwest Scotland

JOHN G. YOUNG

(Plates 14 and 15)

Introduction

Over most of Britain the Greylag Goose has been exterminated as a breeding species by man. The present breeding colonies are confined to a few remote parts of northwest Scotland and the Hebrides where they have survived persecution and to a number of other areas where they have been reintroduced. At present the main stronghold of breeding feral Greylags in Britain is in southwest Scotland. This population results primarily from the introduction some 40 years ago of native Hebridean birds. The breeding records from Loch Urr, Dumfriesshire, and Mochrum Loch, Wigtownshire, around 1684 (Gladstone 1910) may have been of survivors of the original stock of the area, but a pair seen during the summer at Lochinch, Wigtownshire, around 1880 (J. McGill, pers. comm.) were almost certainly of Icelandic origin, forced by injury to remain in their winter quarters.

The reintroduction of Greylags in southwest Scotland took place around 1930 when the late Lord William Percy brought eggs and later goslings from the native colony on South Uist to the Earl of Stair's estate at Lochinch near Stranraer (the late Lord David Stuart, pers. comm.). In addition, between 1933 and 1942 the late Gavin Maxwell (pers. comm.) introduced Greylags at Monreith, Wigtownshire, whence they spread to the nearby lochs at Mochrum. At this stage the birds moved freely between the three colonies, all of which continued to increase. Thus the present population of the area is probably derived primarily from Hebridean stock, though some of Maxwell's birds were of Icelandic origin.

The first records of Greylags breeding outwith these areas were from Kirkconnell Flow, Kirkcudbrightshire, in 1939 (Sir A. B. Duncan, pers. comm.), Loch Moss, Dumfriesshire, in 1949 and the area of Lochs Ronald, Heron and Blackloch about 1950. However, there was no further extension until 1951, when a pair, of which the male was injured, was found at Loch Ochiltree some 20 miles northwest of Lochinch. The birds bred on this loch in steadily increasing numbers and by 1957 had also established themselves on nearby Loch Dornal (the late Sir G. H. Hughes-Onslow, A. D. Watson, pers. comm.).

Since that time Greylags have continued to increase and have spread to many places in Galloway. They have also bred in Ayrshire since 1963.

The birds are now thoroughly wild, typically wary and are dependent on man only in that they feed partly on agricultural land. This paper describes the history, present distribution, status and movements of these Greylags on the basis of data collected from 1962 to 1971.

Breeding sites

During the period under review all the bodies of fresh water in Dumfriesshire, Kirkcudbrightshire, Wigtownshire and southern Ayrshire north to 55°15' were visited at least once. I also visited the major estuaries, saltmarshes and areas desig-

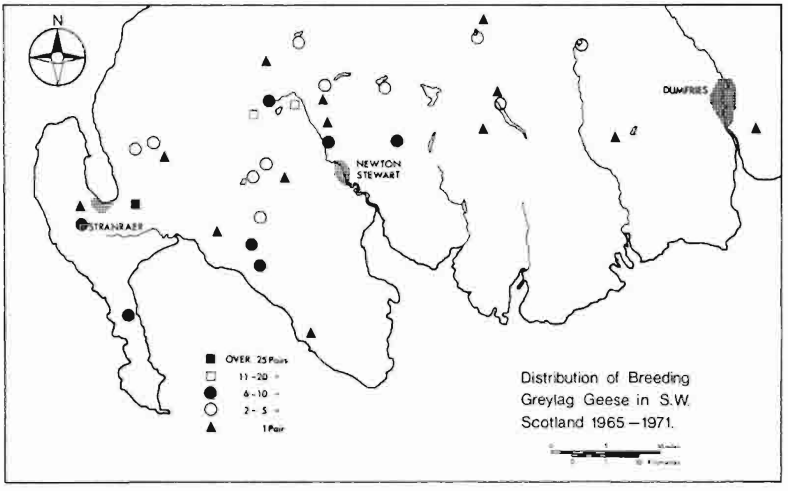

FIG. 1

nated as marsh on the one-inch Ordnance Survey maps. It is possible that at some sites breeding occurred between visits, but it is not thought that any major or regular breeding station has been omitted from table 1. Where possible the date of first breeding at each site has been ascertained (table 1), largely from local knowledge. The breeding sites are dealt with county by county in the order in which they are thought to have been colonised. Several small private collections where the birds are kept pinioned have been ignored as have nine sites where pairs have been present between April and August but where breeding has not been proved.

Table 1. Breeding sites of Greylag Geese in southwest Scotland, in order of colonisation

	Mode of colonisation	First bred
Lochinch	Introduced ca.(1930)	ca.1934
Monreith	Introduced (1933-40)	?
Kirkconnell Flow	Natural	1939
Mochrum Lochs	Natural	ca.1942
Lochar Moss	Natural	ca.1949
Lochs Ronald, Heron, Blackloch	Natural	1950
Loch Ochiltree	Natural	1951
Loch Dornal	Natural	ca.1957
Loch Maberry	Natural	ca.1957
Barfad Loch	Introduced (1960)	pre 1965
Loch Urr	Natural	1961
Loch of Trool	Natural	1962
Loch Milton	Natural	1962
Loch Moan	Natural	1962
Water of Trool	Natural	1963
River Cree	Natural	ca.1963
Loch Goosey	Natural	1963
Logan House	Introduced (1963?)	ca.1964
Loch Dee	Natural	1964
Knockquhassen Dindinnie Reservoir	Natural	ca.1965
Loch Ree (area)	Natural	1965
Ardwall Loch	Natural	ca.1965
Dernaglar Loch	Natural	ca.1965
Loch Ken (area)*	Natural	1966
Earlstoun Loch	Introduced	1967
Water of Luce	Natural	¶
Bargatton Loch	Natural	1968
River Nith	Natural	¶
Whitefield Loch	Natural	1969
Garsfad Loch	Natural	1971

*Includes Woodhall Loch etc. ¶Breeding not proved

WIGTOWNSHIRE

Lochinch

Following introduction around 1930 there was a steady increase in the number of breeding pairs to about 60 in 1965 (D. Lawson, pers. comm.). Forty nests were found in 1971, but a few others might have been missed. The total stock, including non-breeders, was around 580 birds. Not all the ground within the policies of Lochinch is occupied, however, and the population would probably have increased further if the estate had not found it necessary to check the increase by removing eggs; this has been carried out since 1961, with the conversion of much pasture into arable land. Eggs from Lochinch have been donated by Lord Stair to the Wildfowlers' Association of Great Britain and Ireland (WAGBI) and have been used to found colonies elsewhere in Britain.

The removal of eggs has caused many breeding birds to disperse to surrounding lochs and reservoirs. A "moult migration" to Lochs Ochiltree, Dornal, Maberry and Mochrum has also been established, in which adults that have lost their eggs and other non-breeding birds participate. The birds are flightless from about mid June to the end of July and return to Lochinch during August. Here they are joined in late October by Icelandic immigrants, and during most of the winter the two populations move in mixed flocks.

White Loch, Monreith Park

Between 1933 and 1940 Greylags from various sources were introduced, including birds of native and Icelandic stock reared on the Duke of Norfolk's estate near Glencaple, Dumfriesshire. In 1948 the Monreith collection was presented to the Wildfowl Trust, but the flock of full-winged Greylags not required at Slimbridge remained in the area, and 20 pairs were still breeding in 1949. However, the birds were constantly persecuted and eventually dispersed. Since 1951 breeding has been sporadic; one pair raised young in 1964 and one pair reared five goslings in 1971.

Mochrum Lochs

Greylags probably bred around 1684 (Gladstone). More recently, birds spread from Monreith around 1942, breeding first on Challochglass Moss and later on the islets in both lochs. Given protection by the late Lord David Stuart the birds have since bred annually, but there are no records of numbers till 1964, when seven or eight nests were found. In 1965 there were at least ten nests; in 1966 some 34 adults and 23 goslings were seen; eleven nests were found in 1967, and 22 adults were seen in 1968. Later that year 11 nests were found, which between them produced 49 goslings. At the same time there was a fox's earth on an islet where three pairs had nested, but they were nonetheless successful. Fourteen nests were found in 1971.

Lochs Ronald, Heron and Blackloch

Though Greylags probably first bred here about 1950 no records were kept until 1964 when 18 birds (three family parties) were seen on Loch Ronald. In 1965 four nests were found, in 1966 no nests, in 1967 seven nests, and in 1968 four pairs were present, but there was no evidence of breeding. A single pair bred in 1969, four pairs in 1970, and five in 1971.

Loch Ochiltree

A single pair first colonised this loch in 1951. In 1952, seven adults and five goslings were seen, and in 1953 there were 31 birds, of which no more than 12 were adults. The increase continued with the birds breeding on all the loch islets (except one liable to flooding) and on the surrounding moorland and on the promontory between Ochiltree and the nearby Loch of Fyntalloch. In 1962 we found 11 nests; in 1963 and 1964 ten nests; in 1965 nine nests, in 1966 eight nests, in 1967 nine nests all of which were robbed. In 1968 there were eight nests, all of which were deserted late in incubation as a result of disturbance. In 1969 five broods were raised, in 1970 there were seven nests and nine in 1971. This important site used annually at least since 1963 as a moulting area for up to 300 birds of local and Lochinch stock was much disturbed by fishing from 1966 to 1968. This pressure has now decreased.

Loch Dornal

The loch had been colonised by 1957, when about 20 adults with seven or eight broods were seen. These numbers were maintained as a result of protection by the late Sir S. Beale. In 1964 six nests were found, seven in 1965, nine in 1966. In 1967 there were seven nests, of which five were deserted, and in 1968, eight nests of which four were deserted. Nine nests were found in both 1969 and 1970 and eight in 1971. With Loch Ochiltree, this site provides the main moulting area in the region, regularly holding over 250 birds, with 320 in 1966. Ringing returns have shown that the local birds are augmented by birds from Lochinch and the Lake District. This loch is now much disturbed by anglers, and numbers are unlikely to be maintained.

Loch Maberry

Greylags probably first bred here in 1957 when a pair with a brood was seen. I have visited this loch every year since; despite the presence of suitable islets for nesting it was not used again until 1966, when no fewer than 15 nests were found. The adults and goslings join the moulting flock on nearby Loch Dornal. In 1967 there were no nests, and in 1968 only seven goslings were produced from 14 nests, probably as a result of disturbance. In 1969, 1970 and 1971 there were four, 12 and 14 nests respectively.

Barfad Loch

The six adult Greylags resident on this loch in 1965 were hatched from eggs taken from Lochinch in 1960. In 1965 three nests produced 11 goslings; in 1966 a single pair hatched a brood on nearby Culvennan Fell; in 1967 and 1968 four adults were present, but there was no evidence of breeding. Since then the site has been deserted.

Knockquhassen and Dindinnie Reservoirs

In 1965 one pair bred at Knockquhassen and possibly another at Dindinnie. Fourteen adults were seen on the two waters in 1966, and at least two pairs bred on Knockquhassen. In 1968 eight pairs bred in the area, but five nests were destroyed by muirburn. Although six adults were present on Knockquhassen in 1968, there was no evidence of successful breeding. Single pairs bred on both reservoirs in 1969 and 1970, and in 1971 three pairs bred at Knockquhassen and one at Dindinnie.

Loch Ree (area)

In 1965 one pair bred, and in 1966 one pair bred on the lochside and another on moorland nearby. In 1968 at least three pairs were seen in the area. Two families moulted in 1969, one in 1970, none in 1971.

Ardwall Loch

There was a local report of a pair having bred in 1965, but none were present over the next six years.

Logan House Loch

Greylags were introduced from Lochinch stock, possibly about 1960. In 1964 two pairs probably bred; in 1965 five pairs bred successfully. In 1966 at least six pairs nested, and 45 pairs were later counted in a moulting flock. In 1967 at least eight pairs bred, and in 1968 at least four pairs bred successfully, though others might have been present. Twelve pairs bred in 1969, but in 1970 and 1971 only four pairs out of 14 produced young, probably as a result of control measures.

Dernagler Loch

In 1965 three nests were reported. In 1966 birds were present, but there was no evidence of breeding. In 1968 two pairs were present but did not breed, and there have been no further breeding records.

Main Water of Luce

In 1968 three pairs were seen consistently in the same three localities, between Pularyan Burn and the Mains of Larg. However there was no evidence of successful breeding until 1971, when two family parties were noted grazing nearby.

Whitefield Loch

Single pairs bred in 1969, 1970 and 1971.

KIRKCUDBRIGHTSHIRE

Kirkconnell Flow

A pair nested near Carling Loch in 1939, 1942 and 1943 (Sir A. B. Duncan, pers. comm.). This was the first breeding record for Kirkcudbrightshire, but since then there have been no further records from the area, almost certainly because the loch has slowly dried out and become completely overgrown.

Loch of Trool

In 1961 a pair was occasionally present, in 1962 one pair bred on a small island. In 1963 a pair nested, but the goslings were taken by a fox. In 1964 a brood was reared, and in 1965 and 1966 birds were present, but no young were reared. Two or three pairs bred in 1969, two pairs in 1970, and there were seven adults and two broods in 1971.

Loch Milton

Greylags were first recorded in 1962, when one pair with three goslings were seen. Birds were then absent until 1968, when a pair built a nest but apparently failed to lay. One pair bred in 1970, but none were present in 1971.

Water of Trool

Greylags were first recorded in 1963, when a pair nested. The site was deserted after the female had been killed on the nest by a fox (the nest was easily accessible on a promontory). There were no birds there in 1964, and in 1965 though a pair was present no young were raised. Since then the birds have been absent every year except 1967 when they bred successfully.

River Cree

The first breeding was recorded in 1963. In 1964 a pair with well grown young were seen. In 1965 and 1966 at least two pairs bred, and in 1966 20 adults and 22 goslings were seen on the river banks, though some may have come from elsewhere. In 1969 four pairs bred, and in 1968 at least five pairs bred. In the years 1969-71 five, six and five families were noted respectively.

Loch Moan

The date of colonisation is not known, but in 1962 three adults were seen, and an unsuccessful nest was found later. Greylag certainly bred in 1963. In 1964 a pair and four goslings were seen, and in 1965 there was a pair with three goslings. The birds were absent in 1966. In 1967 at least three pairs bred, and 12 adults were present during May. In 1968 at least two pairs bred successfully, but there were no birds in 1970 and 1971.

Loch Dee

The first recorded breeding was in 1964, when a nest with six eggs was found (A. D. Watson pers. comm.). In 1965 and probably in 1966 the same pair bred. In 1967 and 1968 at least two pairs bred; one pair bred in 1969, but no birds were present thereafter.

Loch Ken - Livingston (River Dee)

This is an important wintering area for Greylags of Icelandic origin, and birds have at times lingered on during the summer in the Loch Ken area. In 1959 a pair was present on the River Ken, but breeding was not proved. In 1966 single pairs were present on Kenmure and nearby Woodhall Loch, and a pair with a brood was seen near Livingston. At Kenmure and Woodhall birds bred in 1969. Three pairs bred in 1968, and 27 birds of which 18 were goslings were seen at Livingston in late July. In 1969 some 32 birds were at Livingston during July. In 1970 there were 38, and five family groups were distinguished. 34 moulted in the area in 1971, and again five groups of goslings were recognised as separate families.

Earlstoun Loch

Birds hatched from Lochinch eggs were introduced in 1967. Nine adults were seen in 1969, when first breeding was recorded. There was at least one brood in 1970, and certainly one, possibly two, in 1971.

Garsfad Loch

The two pairs that bred in 1971 were probably from nearby Earlstoun.

Bargatten Loch

The first recorded breeding was in 1968, when a pair with a brood of four young was seen. They may have been colonists from nearby Woodhall Loch, where they had bred the previous year. Since 1969 there have been no further records.

DUMFRIESSHIRE

Lochar Moss

Greylags bred here around 1949, when birds were regularly seen near Stanhope. That year a pair took their four young to the Lochar estuary, and the adults roosted on the sea during their wing moult. The whole family of six were later shot at Caerlaverock "as they drifted in, flightless on a big tide" (J. Straiton pers. comm.). The species possibly bred here again in 1964, but since then there have been no further records, though the area has been visited regularly.

Loch Urr

The following statement was made concerning Loch Urr in 1684 : "In this loch there is an old ruinous castle with planting of sauch or willow trees for the most part about it, where many wild geese and other waterfowls breed". One cannot be sure that the birds referred to were Greylags, though the record was accepted by Gladstone. There are no further records until 1961, when two pairs bred successfully, and broods were also reared in the next two years. In 1964 there were 15 adults but no young were raised. However, in 1965 and 1966 two broods were raised, and in 1969 three nests were found. In 1968 two nests produced only three goslings. No breeding was proved in 1969, but single broods were present in 1970 and in 1971. The low numbers of goslings raised to maturity on the loch is probably due to predation by fox (kills have been seen nearby) and possibly pike which were seen to take young Black-headed Gulls.

River Nith

In 1968 a single pair was regularly reported in the Thornhill area, but there was no evidence of breeding then or since. Greylags of Icelandic origin winter in this area. It is possible that the pair were injured birds forced to remain in their winter quarters.

AYRSHIRE

Loch Goosey

The first breeding record in 1963 was also the first for the county of Ayr. Broods were raised in 1964 and 1965, and in 1967 no fewer than 12 nests were found, probably because the bulk of the population from nearby Loch Maberry had moved there for that one season. In 1968 there were 37-40 adults present, and one pair was seen attacking other birds, but no young were reared. Single broods were raised in 1969, 1970 and in 1971.

Table 2. Analysis and estimate* of the population, 1966, 1968 and 1971

	Adults (with broods)	Goslings (late July)	Failed-Non breeders	Totals
1966	140(16%)	220(25%)	520(59%)	880
1968	190(21%)	230(25%)	490(54%)	910
1971	260(22%)	300(26%)	600(52%)	1160

*figures rounded to nearest ten.

Table 3. Summary of Status, 1971

	Known nests	Goslings reared	Adults
Lochinch	40	62	298
Mochrum	14	21	134
Loch Ronald (area)	5	12	17
Loch Ochiltree (area)	9	21	147
Loch Dornal	8	25	170
Loch Maberry	14	37	28
Stranraer (area)	4	12	32
Logan (area)	4	8	21
Loch Trool (area)	2	6	7
River Cree (area)	5	21	27
Loch Ken (area)	9	35	44
Others	15	40	30
	129	300	955

Moult and moult migration

In the goslings early development of the head, bill and legs gives them a gawky appearance but enables them to feed, swim, dive and run efficiently, the prerequisites for survival before flight. The feathers, especially the primaries, are slow to develop, and full flight is not possible until the end of July or early August, by which time the adults have completed their full wing moult. The timing of wing moult varies among adults : some females lose feathers while still incubating, and the earliest was noted on 28th April, with two primaries out. Non-breeding birds and failed breeders start moulting about ten days before most breeders in charge of broods. Greylags often become reluctant to fly, even before any feathers are shed; they often choose to run, swim or dive from danger rather than fly. Others persist with weak flight, even with several primaries missing, and I have often seen feathers fall out from birds in flight, or during wing-flapping, bathing, swimming and diving.

To judge from the dates when different feathers are found at the sides of lochs, secondaries are shed before the primaries, which may then come out singly or all at once. Owing to individual variation and variation between groups, the Galloway flocks are all certainly flightless for only 30-34 days, on average between mid June (18th) and mid July (20th). Post-moult birds capable of flight on new wings often prefer to swim in groups with other flightless birds rather than fly. By the first week in August goslings and moulted adults are flying strongly, with the exception of goslings of very late repeat broods.

Before the moult birds often assemble at one place, and flocks of up to 400 have been recorded moulting on lochs that hold only a few pairs of breeding birds. The important moulting lochs are Dornal and Ochiltree, with smaller numbers

at Castle Loch, Mochrum Loch, Lochinch and Loch Ronald. It was evident in 1962 that the numbers moulting at Dornal and Ochiltree greatly exceeded the breeders plus goslings and non-breeders from that area. Counts indicated that non-breeders and failed breeders from the Stranraer area were moving to these lochs for the moult, and by 1963-64, a regular pattern of local moult migration had become established.

Ringing recoveries and field observations and controls of ringed birds (fig. 2) combined with synchronised counts have confirmed the annual movement and have shown that the moulting flock comprise: breeding adults from the immediate area and their young; breeding adults and goslings from sites up to two miles away; failed breeders from a wide area including Lochinch, Wigtownshire, and Loch Urr, Dumfriesshire; yearlings, immature birds and/or non-breeders; and birds reared from Lochinch eggs and released after being reared in Cumberland.

Other counts have proved that on completion of the moult the birds return to the Stranraer area by mid September to roost mainly at Lochinch.

Ringing

In order to gain more knowledge about these movements flightless Greylags were caught at the moulting lochs and ringed (with BTO monel rings supplied by the Wildfowl Trust). The operation was undertaken by The North Solway Ringing Group, and the geese were caught by being driven by boats into V-shaped catching pens constructed of sheep netting. The catches are summarised in table 4.

Table 4. Catches of Greylag Geese in Galloway, 1963-71

Date	Place	Full Grown	Controlled	Goslings	Totals
7.7.63	Loch Ochiltree	12	—	—	12
28.6.64	Loch Dornal	14	—	7	21
27.6.65	Loch Ochiltree	62	4*	33	99
26.6.66	(Loch Ochiltree	27	11	5	)50
	(Loch Dornal	5	—	2	)
20.6.71	Loch Ochiltree	7	—	9	16
		127	15	56	198

*Two of the 1965 controls carried WAGBI rings, and were birds released at Millom in Cumberland. The other two were birds ringed at Loch Dornal in 1964.

The 1966 controls included one ringed at Loch Dornal in 1964 and controlled at Loch Ochiltree in 1965 and ten first ringed at Loch Ochiltree in 1965. Visits to the catching areas after each catch revealed that the disturbance of the

catching operation had neither a temporary nor long-term effect on the birds. They behaved normally in the same areas the next day, and the same lochs were used for the moult in subsequent years. There was no mortality during the six catches. Ringing ceased in 1966, when the first recoveries were already indicating that the population was entirely sedentary, and by this time birds were also being rounded up at Lochinch and being redistributed through WAGBI.

The distribution of recoveries is given in fig. 2, and the total numbers in each year in table 5. This indicates a reporting rate of 18.5%, but it was known from contacts with wildfowlers that at least five rings were recovered in 1965 but not reported, and the overall recovery rate is thus about 21.5%, similar to the rates expected from other Greylag populations.

Table 5. Recoveries of Greylag Geese ringed in Galloway

	Ringed	Recovered	% reported
1963	12	5	42
1964	21	4	19
1965	95	16	17
1966	39	6	15
1971	16*	—	—
	183[167]	31	18.5

*excluded from calculation of % reported

Table 6 examines the movement of ringed birds from the place of ringing. The maximum distance travelled was 20.5 miles, the mean 12.7 miles, and from the whole pattern of recoveries, the population seems to be sedentary and uninfluenced by the wintering Icelandic population, which shares many of the winter roosts. At one time it was considered possible that Icelandic birds augmented the feral population and contributed to the rapid increase in the region. This seems unlikely, since pair formation in the feral stock takes place in late December, and egg-laying is in progress by mid March; indeed in some years the feral stock is hatching as the last of the immigrants are leaving the country. This difference in the timing of pair-bond formation must tend to keep the populations separate, and this conclusion is supported by the ringing recoveries.

The only example of abmigration in the feral population was provided by a juvenile caught at Lochinch on 14th July 1962. Later released on a WAGBI reserve in South Cumberland. It was subsequently shot at Arnanes Nesjapreppur, Iceland, on 20th April 1967 (Ellwood and Ruxton, 1970).

Table 6. Movement of Greylag Geese ringed in Galloway

Distance (miles)	No. of records	%	Direction	No. of records	%
0-5	13	42	Local	4	13
5-15	15	48	Southwest	16	52
15-20	3	10	South	6	19
Average 12.7 miles			Southeast	4	13
Maximum 20.5 miles			North	1	3

The direction of the movements, with 71% either to the southwest or south, reflects the composition of the moulting flocks, supports the existence of a moult migration and indicates that some breeders in the northeast of the region move to winter on lower ground near the shore, where presumably conditions are more hospitable. Not unexpectedly for a quarry species, most of the recoveries (77%) were of birds shot or suspected of being shot but not retrieved. Twenty-eight of the recoveries (90%) were shot inland. The recovery of 14 birds (46%) in the Stranraer area after capture in moult near Newton Stewart further supports the existence of movement between the two areas (fig. 2).

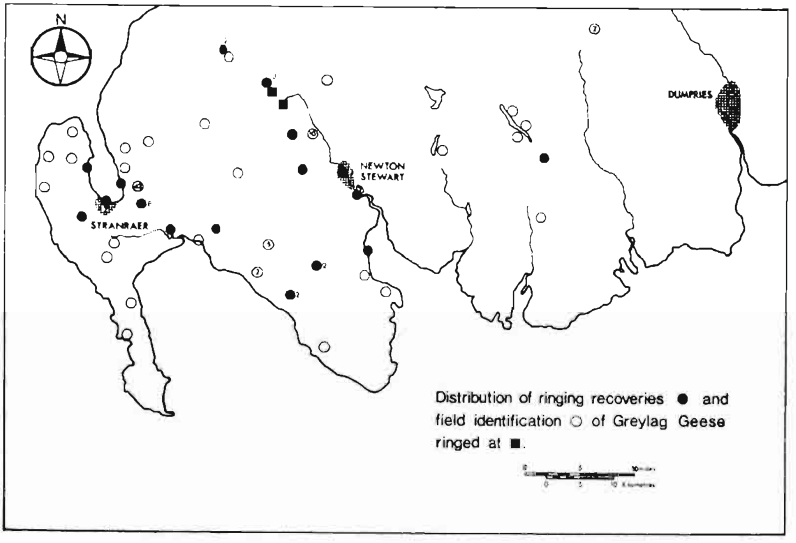

FIG. 2

Summary

The Greylag is the only goose indigenous to Great Britain. Before the reduction of its range over most of the country it probably bred in at least two areas in southwest Scotland. By the late 1920's the stock that had persisted in a few remote parts of northwest Scotland and the Heb-

rides was also declining rapidly. Greylags of this Hebridean stock were reintroduced in southwest Scotland about 1930 and have increased and spread throughout the area, especially during the last decade, when about three-quarters of the present sites were colonised. The population stems primarily from the feral colony based at Lochinch in Wigtownshire, the original place of introduction, and is now the largest population of feral Greylags breeding in Britain.

In general the birds have spread from west to east and now breed in four counties (fig 1 and table 1). Nests have been mostly on lochs in hill country less prone to the human disturbance evident at more accessible sites; but birds have also bred around Loch Ken and other lowland areas. Though there have been a few deliberate introductions, for the most part the extension of range has been natural, accelerated perhaps by control measures at a few of the larger colonies. By 1971 they had been proved to breed at 30 sites and were seen but not proved to breed at a further nine.

A survey revealed that at least 129 pairs bred in the four counties in 1971 (tables 2 and 3) and produced 362 goslings (about three per pair). In addition nearly 600 failed breeders and non-breeders were found. During the breeding season these birds were scattered over many lochs but during moult were found mostly on Lochinch and at Lochs Ochiltree, Dornal and at Mochrum. The total population in July 1971 was estimated to be about 1160 birds. From the 1971 data and my surveys in 1966 and 1968, the total stock has increased by about only 4.6% per annum during the last five years. Before 1961, when the uplifting of eggs from Lochinch for redistribution began, the rate of population increase was probably faster. The 1971 survey also revealed that the original feral colony, including the five other areas colonised by 1957, remained extremely important, holding 69% of the total nests, 40 nests (30%) still being centred on Lochinch (table 3).

Nearly 200 birds were ringed while flightless, and the population was shown to be sedentary, with recoveries and field observations supporting the existence of a local moult movement.

This feral stock of Greylag Geese is of scientific as well as conservation interest and provides pleasure to ornithologists and sport for wildfowlers. The continued success of the population depends largely on management at Lochinch. Fortunately the policy there is directed by an understanding and sympathetic owner, and with four of the other main stations scheduled by the Nature Conservancy as Sites of Special Scientific Interest the future seems reasonably secure.

Acknowledgments

The re-establishment of Greylag Goose as a breeding species in southwest Scotland has resulted primarily from the protection and encouragement given to the species on Lord Stair's estate at Lochinch near Stranraer, Wigtownshire. I am grateful to the Factor, Mr I. H. A. McKay and to the Head Gamekeeper, Mr D. Lawson for information and allowing me every facility to count the birds.

Sir A. B. Duncan, T. Halliday, the late Gavin Maxwell, J. McNab, the late Sir G. H. Hughes-Onslow, J. Straiton, the late Lord David Stuart, L. A. Urquhart and A. D. Watson provided useful records. Ringing involved many arduous hours in the field and was organised jointly with R. T. Smith. Without the

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Appendix I

Behaviour during moult

The two main factors in the selection of a moulting area seem to be safety and food. Since both are available at Lochinch it is difficult to understand why birds leave there, though the fact that large numbers of people visit Lochinch in summer is perhaps an important cause. At the moulting areas geese react to the sight of humans on the skyline, up to 1½ miles away; sometimes they assume an erect, alert pose, and often leave off grazing and walk towards the loch perimeter. On a closer approach, with the intruder still up to half a mile away, they may take to the water. The birds react to deliberate movements by swimming out of sight and attempting to hide behind islands or promontories; if pursued they form a compact flock on the widest part of the loch, furthest away from the threat. If they are pursued by boat they panic, swim, dive, wing-flap and disperse rapidly towards land, where they run very quickly and hide in vegetation up to a mile from the site. 34 timed dives of moulting adults being pursued ranged from 18-64 seconds, with a mean of 32 seconds; the mean distance travelled under water was 30 metres.

Although movement towards geese ensures reaction, they can apparently recognise and accept intrusions that do not represent a threat: anglers who move slowly round the edge of a loch have little or no effect, and people tending farm stock are usually ignored.

The day-time activity is divided into three broad categories. Study of an undisturbed flock for 14 hours on each of five days at intervals during the moult revealed: loafing 58.1%; feeding (an average of 3.4 periods per day) 34.8%; and care of plumage (bathing and preening) 7.1%. Neither display nor aggression was noted during moult. Observation of a disturbed flock, with people walking round the loch most of a day, while it was being cleared of pike, showed that the geese could not accept the disturbance and remained on the water, unable to feed during seven hours' observation.

During the moult geese roost on the water, but in high winds resort to islands. There is no evidence of increased mortality during the flightless period.

The status of Shelducks in the Forth area

DAVID JENKINS

This paper examines counts of Shelducks in the Forth area over ten-20 years up to 1971. These counts provide a base-line against which future changes in numbers can be assessed. However, the data are sparse, and the birds' movements are known to be complicated. The paper supplements a more detailed study at Aberlady (to be published separately); other recent work on Shelducks has been done at the River Ythan, Aberdeenshire, by Aberdeen University, and on the Isle of Sheppey in Kent (see Young 1964, 1965, 1970, 1971; Hori 1964, 1969).

Baxter and Rintoul (1935) give the main haunts of Shelduck on the south side of the Firth of Forth as Cramond Island, Aberlady Bay, Gullane, the Tyne estuary and the bay to the east of Barns Ness Lighthouse, and on the north side as Culross, Tulliallan and Aberdour (fig. 1). There were a few pairs

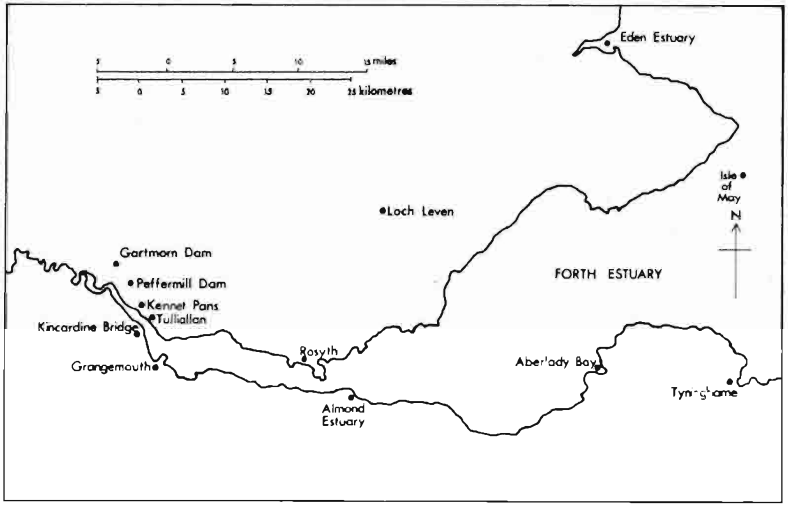

FIG. 1. Firth of Forth showing sites mentioned in the paper.

elsewhere, including some on islands. They also mention inland breeding at Loch Leven, and wintering flocks at Aberlady Bay and Grangemouth. There were hundreds of birds at both the latter places in December 1933, but winter flocks at the Tyne estuary were thought to be decreasing. This paper shows that the places where Shelducks are found in the Forth have

not changed much in the last 40 years or so. The main concentrations now, as then, are in the estuaries of the streams running into the Forth on the south side and in the upper stretches of the river, with apparently only scattered pairs along the Fife coast.

This paper does not attempt to census Shelducks in the whole Firth, but all the major breeding areas have been visited. The nearest breeding areas north of the Firth of Forth are at Eden mouth, while to the south few breed between Tyninghame Bay and the muddy shores near Holy Island, Northumberland.

The data include counts made during checks on breeding success of ducks, together with routine winter counts for the Wildfowl Trust, involving monthly counts on selected weekends from November to March. These winter counts were done on the same days, so that figures for different areas for the same months are to some extent comparable. Other counts were done for interest during regular birdwatching. Few counts except mine at Aberlady after January 1968 were specifically of Shelducks, and time of day and state of tide were not usually recorded by other people; consequently the counts lack supporting data. It is easy to interpret wrongly figures that are not collected systematically, but Shelducks are large, conspicuous and easy to identify and count, so errors through inaccurate counting are likely to be small.

Recent counts at Aberlady show that numbers at that estuary changed with season, time of day and tide. In 1970, for example, the maximum count at Aberlady Bay was 150 at 1750 hrs on 7th February, and the minimum was six at 0700 hrs on 27th April, but the total local population is not thought to have changed much in that time. So counts made without a record of time of day or state of tide need careful interpretation. Fortunately, most counts used in this paper were done near or after noon and none early in the morning. The main justification for publication is that consistent patterns apparently emerge, despite the sparseness of the data. Refinements in counting are suggested for uniformity of method in future.

Annual cycle

Shelducks breeding in much of western Europe moult together in sheltered waters off western Germany. The first birds leave Britain in June, and the bulk in July. At most places practically the only adults left by August are parents with young, and most of these leave in that month. (However, in parts of the upper Forth and Almond estuary, some Shelducks were sometimes recorded in early autumn—see below.) Eventually many of the first-year birds disperse too, and by September there may be few or no Shelducks on estuaries that

held a breeding stock. The date of return varies. In some places they come back in October or November, in others not till spring.

In winter Shelducks occur in flocks, and these persist till about March, when the birds spread out over the estuaries. In April to June, known birds are usually seen in much the same places on the mud, and since they space themselves out they are considered territorial. From about February or March it appears that the Aberlady population is divided into different classes of birds, some individuals leaving the estuary towards low tide for different parts of the coast, while others stay in or near the estuary throughout the day. In the nesting season the birds previously absent at low tide stay away altogether. Thus it seems that only those that stay all day at Aberlady may subsequently breed there and that the rest breed elsewhere or not at all. In late June and early July counts at big high tides sometimes showed numbers similar to those recorded at high tides in March and April.

From mid March breeding residents leave the estuary in early morning for nesting areas on dunes or inland, where they search for suitable holes in the ground, in trees, barns, straw stacks and so on. When not searching they often gather in groups, which have been called "parliaments". At Aberlady most birds return to the estuary by mid morning, but elsewhere some may stay away longer. Some isolated drakes, with ducks nesting inland, are seen near presumed nest sites at all times of day. In some places, for example, on freshwater pools or lakes, Shelducks feed inland, without regularly returning to the coast. At Aberlady most feeding is done on the estuary when the tide is about half in, but some birds feed at all stages of tide. Few Aberlady birds feed inland, but one or two pairs regularly frequent a freshwater pool, and others are occasionally seen in early morning or spring-sown barley.

Probably most parents nesting near estuaries bring their young to the intertidal zone to feed, wherever they have nested : at any rate, at Aberlady ducklings have seldom been seen elsewhere except *en route* to the sea. Some ducklings however are reared on inland lakes, for example Loch Leven and on at least one small pool in East Lothian. Duckling mortality is typically high, mostly associated with bad weather or due to predation by gulls; many broods are already depleted when first seen. In the upper Forth some die in salmon nets.

At Aberlady most full-grown Shelducks are in adult plumage, with up to 5-10% in first-year plumage in winter and sometimes rather more in May. These are the first to leave for moulting grounds, followed by non-breeders or failed breeders and then by successful parents.

Results

Tables 1 and 2 give counts for three tributary estuaries and the narrow part of the main Firth. Each figure represents a single count. The main features of these data are their variability, the differences in the times of build-up of numbers following the birds' return to Britain after moulting, and the differences in total numbers in the various areas. The rate of build-up is summarised diagrammatically in fig. 2, taking (a) a mean for each month from September to February and (b) the means of the highest spring counts in March (twice in February) to June. The spring counts used in computing (b) are marked with an asterisk in table 1.

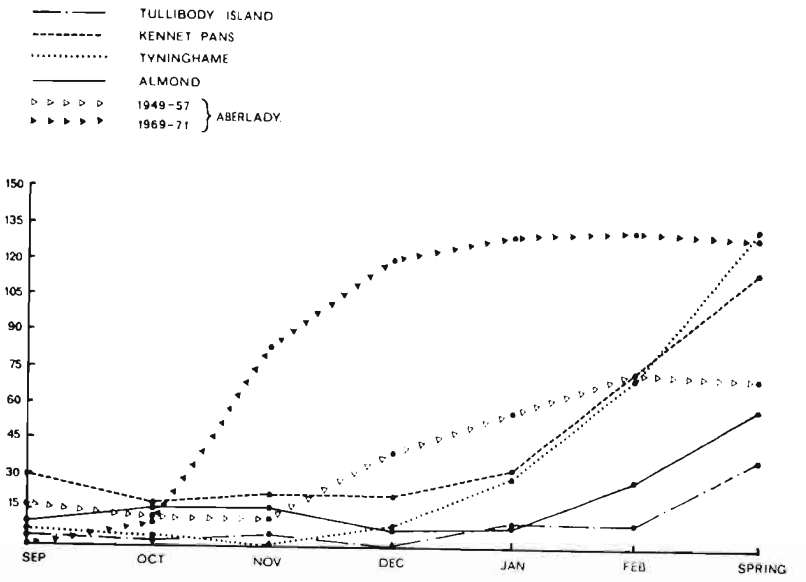

FIG. 2. Times of arrival and approximate size of spring population of Shelducks at five sites.

Shelducks were present at some places through September (table 1), but rarely and then in small numbers at Tullibody, Tyninghame and Aberlady after 1967. Here there were few or no Shelducks till the build-up began. The usual dates of this differed. The earliest returns recorded were at Aberlady after 1967 where Shelduck numbers began to increase in October, reaching a maximum about New Year. At Aberlady before 1957, maximum numbers were not reached till February and at Tullibody and Tyninghame usually not until March. At Kennet Pans and the River Almond, counts in April-July often

showed higher numbers than in March; and at the Almond, the return was particularly late in 1965, with only eight birds recorded in February. On the whole, however, the time of build-up of numbers was consistent for each place.

At Aberlady there was a slight upward trend in numbers from 1949/50 to 1956/57, and a higher population still in the five years up to 1971 (table 2). Maximum counts were usually obtained at high tide and minima at low tide. As an example, table 3 shows for 1971 (a year in which there are comparable data for the Almond) after February that counts at low tide usually showed 80-90 birds compared with 120 or more around high tide. But some counts did not fit this pattern, which was thus not entirely predictable. Counts at Almond also sometimes showed different numbers at different times on the same day (table 3). The data are few, but from late February there were often fewer birds at high tide than at low tide. These numbers again were not entirely predictable; 54 and 58 birds were recorded near high tide on 25th February and 10th March respectively, and only 22-33 later. This tendency to have larger numbers at low tides than at high tides is the reverse of the situation at Aberlady.

Counts near Grangemouth are given in table 4. These figures are extremely variable, probably owing to the width of the river there and inconsistencies in counting. However, the general pattern differs from that of some other areas, and some comments can be made. First, whereas there were usually few or no Shelducks at Tullibody Island, Aberlady Bay or Tyninghame in September-October, in five out of 12 years large numbers (70-252) were found at Grangemouth in October. In some years, some counts in autumn/early winter were also high at the nearby Kennet Pans and at Almond, and there is no obvious explanation for these differences. Secondly, there were usually more birds at Grangemouth around mid winter than in either autumn or spring. Thirdly, counts in March to May were in the range 101-330 except in 1961/62 and 1971/72 when both March and February counts were exceptionally high. An apparent decrease in 1966-69 was not sustained in 1972 when spring numbers were much the same as in most earlier years. However, the spring data for Grangemouth are too sparse for even a tentative conclusion on trends.

Small numbers of Shelducks occurred near Rosyth, reaching a maximum of 50 in May 1958, and near Longannet power station. Scattered pairs bred at many other places along the coast, including a few sites in Fife (with breeding attempted on the Isle of May) and up to 5 km or more inland, but these birds may have wintered at the main estuaries named above. For instance, three marked birds from Aberlady Bay bred near

Table 1. Counts of Shelducks at four places in the Firth of Forth and approximate numbers of young fledged

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Later	Approx. no. fledged
R. Devon at Cambus - Ferry Pier at Alloa (Tullibody Island)									
1960/61	5	0	0	0	0	15	31*		
1961/62	14	0	0	0	0	3	38*	50 (July)	
1962/63	0	2	0	0	53	2	31*		
1963/64	0	0	0	0	0	28	35*		
1964/65	0	0	0	0	2	9	26*		24
1965/66	0	0	0	0	0	17	37*		
1966/67	10	0	0	0	0	12	25*		
1967/68	0	0	0	0	2	13	47*		8
1968/69	0	0				2	30*		22
1969/70	8	22	42	0	25	0	55*		8
1970/71	0	0	0	0	5	19	45*		19
Ferry Pier - Kincardine Bridge (Kennet Pans)									
1960/61	56	3	0	30	17	69	137*		
1961/62	20	44	18	12	73	103	98*		22
1962/63	28	57	18	40	35	94	134*		
1963/64	27	4	24	27	18	83	29	114* (June)	42
1964/65	79	27	13	5	36	46	116	136* (June)	67
1965/66	5	4	80	31	86	186	80*		44
1966/67	82	33	37	0	3	42	44	123* (June)	63
1967/68	0	0	1	51	7	42		106* (June)	9
1968/69	0	0				25	62	120* (July)	34
1969/70	1	5	5	0	7	52	31		38
1970/71	36	0	0	6	51	29	43	114* (June)	34
Almond Estuary (Cramond Village - Barnbougle Castle)									
1961/62		15	11	0	1	26	61*		50
1962/63	25	37				50*			80
1963/64		10	19	21	1	19	22	51* (April)	55
1964/65	14	11		0	4	8	45*		42
1965/66	15	25	28	2	15	42	42	65* (May)	100
1966/67	8	0	0	0	2	45*	20		32
1967/68	0	1	1	1	18	41	69*		70
1968/69	0	0	2	11	7	21		61* (April)	64
1969/70	20	35	64	29	21	13	40	64* (April)	43
1970/71	2	20	8	1	15	54	70*	70 (May)	51
Tyne Estuary (Tyninghame)									
1956/57					16	60	102	108* (April)	35
1957/58	19	15	0	20	24	75	85	135* (May)	31
1958/59	3	0	4	4	5	34	145	170* (April)	25
1959/60	10	14	0	14	21	80	150	150* (April)	52
1960/61	11	7	2	0	9	94	120	160* (May)	21
1961/62	4	8	2	0	26	70	122*		19
1962/63	2	6	0	9	41		100	130* (May)	45
1963/64	1	0	0	0	33	73	136*		20
1964/65		0	1	10	16	76	121*		21
1965/66	3	0	0	0	39	55	83	184* 146 (May)	19
1966/67	3	2	0	1	48	146	136	140* (April)	18
1967/68	3	0	0	2	31	44	116	120* (April)	50
1968/69	7	2	2	19	35	50	100	100* (June)	55
1969/70	8	5	3	14	34	42	85	86* (June)	41
1970/71	5	3	3	16	55	85	112	136* (April)	16

*Counts used in compiling spring totals in fig. 2.

Table 2. Maximum counts of Shelducks at Aberlady Bay in 1949-58 and 1966-71 and approximate numbers fledged.

		Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	No. fledged
1949/50		25	4	2	2	25	55	40	40	20
1950/51		15	4	2	44	52	62	74	72	7
1951/52		10	11	9	30	42	76	70	60	7
1952/53		10	2	11	40	38	55	74	46	25
1953/54		9	6	11	66	81	90	76	50	20
1954/55		20	22	20	26	72	65	58	42	22
1955/56		29	38	20	37	31	105	83	56	24
1956/57		22	12	17	70	81	88	94	40	18
1957/58		6	8	11		75				
1966/67						130			124*¶	9
1967/68			8	89	120	123	124	118	130¶	34
1968/69	max.		12	87	133	150(*4*)	142(*4*)	129(8)	130¶(*26*)	122
	mean					134	121	108	110	
	min.					132	130	84	80	
1969/70	max.	0	10	81	140	128(*11*)	150(33)	121(33)	137¶(*26*)	36
	mean					122	119	92	101	
	min.					115	87	67	33	
1970/71	max.	0	9	70	93	122(*10*)	119(*10*)	126(*15*)	127¶(*17*)	25
	mean					109	103	103	110	
	min.					85	84	80	82	

Minimum counts and mean numbers are given for late winter months in 1969-71 for comparison with earlier years when few counts were done.

* in May 1967
¶ all at high tide
No. of counts given in italics.

Table 3. Counts of Shelducks at Almond and Aberlady in 1971 in relation to times of high tide

Almond			Aberlady		
Date	Time	Count	Date	Time	Count
February			February		
17	+6	30	9	—1	119
25	—6	72	17	+5	100
	—0.5	54	19	+2	84
			28	—5	103
				0	115
March			March		
10	—6	70	10	—6	80
	—0.5	58	23	0	107
23	—1.5	33	24	+2	126
			25	—3	85
April			April		
14	—3	95	11	+3	88
26	0	33	13	0	122
			14	0	125
			18	+2	94
			27	+1	126
			28	—0.5	120
May			May		
12	—3.5	70	14	0	123
	0	22	16	+5	87
27	—1.5	65	28	+5.5	79
				—2.5	95
			June		
June			12	—1.5	91
18	0	24	16	+1.5	85
			19	—2	120

Times given in hours before (—) or after (+) high tide.

Table 4. Counts of Shelducks near Grangemouth, 1959-71

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April
1959/60	10	70	182	1236	750	653	330	
1960/61	121	131	87	741	47	723	255	
1961/62	0		555	1285		1562	813	
1962/63	26	5	275	420	1067	0	268	
1963/64	0	0	335	896	1063	624	216	
1964/65	16	230	474	0	1270	856	292	
1965/66	13	10	303		952		157	
1966/67	10	107	124		102		101	
1967/68	19	1	240	575	1050	102	136	
1968/69	0	30	870	620	87	438		
1969/70	11	252			477	228	262	
1970/71	0	0	64	756				
1971/72					1125	1400*	1058	382/350¶

*Aerial count by Dr H. Milne.
¶There were 214 in May 1972.

Gosford Bay in 1971. Shelducks have also nested near Barns Ness in recent years, as described earlier by Baxter and Rintoul (1935). More information for Fife is required for a complete picture of the status of Shelducks in the area.

Table 5. Counts of Shelducks at Loch Leven, Kinross, 1966-71 (giving the highest count in any week)

	Jan				Feb				Mar				Apr			
Week	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1966																
1967	1		0	0		5				6			9	2		5
1968						2									11	
1969	0		0		0		0			2	2		16			
1970	0		0				2				10					26
1971	0		0		2		2			2	4				10	20

	May				June				July				Aug			
Week	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1966	11		13	22	14		9			6	3	4	2		10	2
1967		21	13			17	20		18				7		4	
1968		21					21									
1969										42	37	23	10	3		
1970										22			4			16
1971			22				22			39			9			

	Sept				Oct				Nov				Dec			
Week	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1966			0		4		10	2			0	0	0		0	
1967			7	8		4					0					
1968			0	0		4					3		3		2	
1969				3		2					0				3	
1970		3					0				3	2		1		
1971		0		0			0			1	17		1			

	Broods	Fledged young
1966	4	8
1967	5	
1968	5	
1969	5	38
1970	9	36
1971	9	35

Blanks indicate no data available.

Shelducks have been recorded at Loch Leven since last century (Millais 1901). Berry (1939) and Baxter and Rintoul (1953) thought that there were about 20 pairs. Irregular visits by R. W. J. Smith in 1956-63 showed a maximum of five broods in this period. Staff from the Wildfowl Trust estimated a stock of 5-10 breeding pairs in May 1965, and table 5 records counts and breeding subsequently. In five of the years from 1966-71, maximum spring counts (taken from the last week of April through May) varied between only 21 and 26; in the other year there was no count in May. Four or five broods were recorded up to 1969 and nine in 1970 and 1971. Since 1966, Shelducks have been recorded at Loch Leven in every month. They were scarce after August, with only 1-7 birds till March. A build-up of presumed breeding birds continued through April, with the maximum not recorded till May in 1966 and

1967. An influx of non-breeders or failed breeders occurred on 10th and 17th July 1969 (maximum new birds 21) and 7th July 1971 (17 new birds). Shelducks also bred inland at Peffermill Dam from 1961 but have not bred at Gartmorn Dam since 1965.

Discussion

The distribution of Shelducks in the Forth area coincides with the main areas of mud. Few Shelducks are found on the mainly sandy or rocky areas in between the estuaries or on the Fife coast or, for example, on the sand at the mouth of Aberlady Bay. A possible explanation for the increase in Shelducks at Aberlady is that the area of mud there may have increased. This is likely since the estuary is gradually silting up. Wrecks of fishing boats testify to the presence of deep water there long ago, but now the whole bay is shallow, even at high tide. I have not been able to obtain data on the rate of this silting, nor to determine whether it is still continuing, but the relation between Shelduck numbers and the amount of mud in this bay would be worth further study.

The Shelducks seen in autumn at Kennet Pans, at the Almond and in some years at Aberlady were possibly successful breeders or first-year birds, most probably the latter, but they did not stay at Tullibody and seldom at Tyninghame. There was no obvious correlation between numbers of young fledged in July and numbers in autumn (table 1); temporary increases were sometimes recorded in October/November, and so no conclusions can be drawn. If adults were involved, they presumably came more or less straight back from the moulting ground. It is easy to distinguish adults from first-year birds (see Boase 1951, Hori 1965) and more information could readily be obtained.

Grangemouth is clearly an important wintering area for Shelducks in east Scotland. They also winter in rather similar numbers at the Eden mouth between Forth and Tay, and in the Moray Firth. Boase (1951, 1959) describes the pattern at the Eden, where the main return was in November/December, reaching 1000-1500 birds in January/March and declining to 250-300 in April. In the Moray Firth recent winter counts showed 900-1500 in January to March, with about 1000 or more in January in 1969-72. In contrast there were few birds in the Tay estuary or at Montrose before February, and Shelducks are mostly summer residents at the Ythan (Young 1970).

The differences in patterns of over-wintering at these places are paralleled by differences between individual tributary

PLATE 13. Mole kills Herring Gull (see p. 207).

Photographs by R. Thomson.

PLATES 14 and 15. Feral Greylag Geese in southwest Scotland (see pp. 170-182).
Photographs by J. F. Young.

Above Adult female incubating.
Below Gosling being ringed.

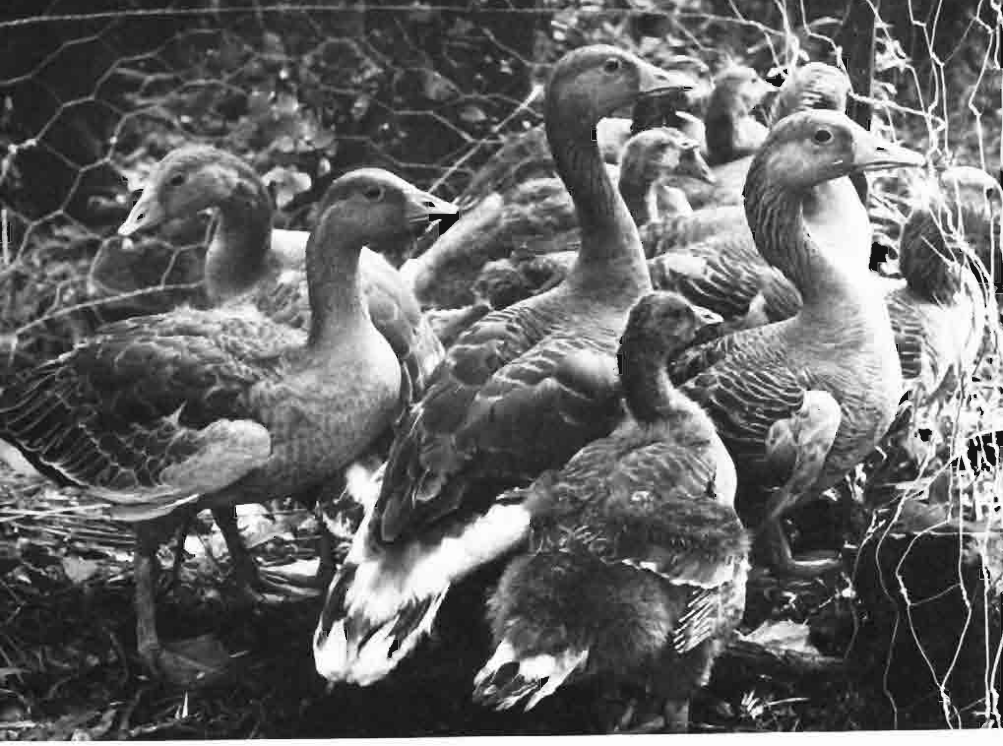

PLATE 15 (a). A mixed bag of adults and goslings rounded up for ringing.
(b). Flightless adult, displayed to show extent of moult.

PLATE 16. Rockall, now officially part of Scotland (see p. 201).
Photograph by courtesy of the Institute of Geological Sciences.

estuaries in the Firth of Forth. The data for Aberlady and Tyninghame show that the dates of return and build-up of numbers at each of these adjacent estuaries were consistent from year to year, yet quite different from each other. Both estuaries are sheltered, particularly the inner bay at Tyninghame, and so differences in exposure are unlikely to be involved. The total number of Shelducks at the two places is much the same, and so population size is probably not important either. Aberlady Bay is a local nature reserve with limited shooting, whereas Tyninghame Bay was formerly much disturbed through shooting (it was notorious for its "marsh cowboys" but now there are fewer ducks and less shooting). Similarly, there is shooting on only one bank of the Almond (though apparently not much), while at Tullibody shooting is extensive. High numbers were not usually recorded at Tyninghame and Tullibody until a month or more after shooting was over, although the build-up began during the shooting season. Thus the differences in dates of return (and perhaps also in the numbers of Shelducks recorded in autumn) may be partly due to differences in disturbance.

Table 6. Spring counts of Shelducks at four breeding places in the Forth area

	Tullibody	Kennet Pans	Almond	Tyninghame	Totals
1956/57				108(A)	
1957/58				135(MY)	
1958/59				170(A)	
1959/60				150(A)	
1960/61	31(M)	137(M)		160(MY)	
1961/62	38(M)	98(M)	61(M)	122(M)	319
1962/63	31(M)	134(M)	50(F)	130(MY)	345
1963/64	35(M)	114(J)	51(A)	136(M)	336
1964/65	26(M)	136(J)	45(M)	121(M)	328
1965/66	37(M)	80(M)	65(MY)	184(MY)	366
1966/67	25(M)	123(J)	45(F)	140(A)	333
1967/68	47(M)	106(J)	69(M)	120(A)	342
1968/69	30(M)	120(JY)	61(A)	120(A)	311
1969/70	55(M)	*	64(A)	86(J)	
1970/71	45(M)	114(J)	70(M)	136(A)	365

M—March count
A—April count
MY—May count
J—June count
JY—July count

*Omitted from this table is a very low March count of 31 at Kennet Pans in 1969/70

A main problem with these counts is to assess whether they give any evidence about the status of the whole Shelduck population in the Firth of Forth. The short answer must be that the counts are too few and too variable for any firm conclusion,

but they do give an indication. Excluding Grangemouth, for which the data are particularly sparse and variable, and Aberlady, where the stock has obviously increased, the variation between spring stocks (table 6) is relatively small. Spring counts at Tullibody were all between 25 and 55; at Kennet Pans, all between 80 and 137 and mostly 98-137; at Almond, all between 45 and 70; at Tyninghame, nearly all between 121 and 170 with 1970 clearly an exceptional year. The highest figures at Tyninghame can reasonably be attributed to transients (see p. 199), especially in 1966. The cumulative totals for these four places vary only between 311 and 365 over nine years (table 6), and except for Aberlady there is no obvious suggestion of a trend towards a major change in numbers. At Aberlady maximum and minimum winter/spring counts have been similar since 1968. Probably the spring population is fairly stable.

If we use these figures as the spring stock at these places, plus 355 (the average of all the March counts) for Grangemouth and add the 1971 maximum of 20 birds for Loch Leven plus the arbitrary figure of 50 birds for Rosyth and the Fife coast, the spring stock for the whole of the Forth area is of the order of 700-1000 birds.

Unfortunately it is not possible to estimate how many of the Forth Shelducks attempt to breed. At Aberlady and the Almond stocks were reduced to about 80-90 and 30-50 at low or high tides in spring, and it is not known whether all the missing birds took territories elsewhere nor whether they were potential breeders. All that can be said is that the total of about 700-1000 birds is not necessarily the breeding population. The number of breeders must be smaller if there are non-breeding yearlings in the area, but, apart from the fact that a few are known to occur in some winters at Aberlady, there are no data on this.

The number of young fledged in mid July (table 1) varied from year to year, with mortality often high. The average clutch size of Shelducks is 10.1 according to Hori (1964, table 3) so that the average potential hatch for Aberlady (if we take the breeding population as 40 pairs) was 404. The number of full-grown ducklings there in late July in different years varied between nine and 123. In Kent, Hori (1964) found that breeding success (the proportion fledged from eggs laid) varied between 16% and 50%. This suggests that normal nest or duckling mortality is high and variable. The best place for breeding among those given in tables 1 and 2 was the Almond estuary where the total stock of Shelducks was small. The small stock at Loch Leven also bred well, and two pairs of Shelducks at Barns Ness in 1971 together reared 25 young. The small stock at Tullibody Island apparently did not breed well, but this

nesting area is more or less continuous with other areas in the upper estuary, and the data from there are incomplete; otherwise the figures suggest that small stocks of Shelducks tend to breed better than large stocks.

The spring numbers given for the different areas provide a base-line against which future changes can be assessed. They are obviously provisional and a best guess from the data available. Totals will be affected by transients, and no estimate can be given of their numbers. Boase (1951) suggested that Shelducks were still migrating through the Tay area in April and May, and presumably they also move through the Forth then. The highest counts at Aberlady were in January and February, at Kennet Pans in February, and at Tyninghame in April and May, and transients probably move through the whole area throughout the winter and spring. More information on transients can come only from marking birds.

This analysis shows that the birds' movements are complex and that more information is needed. Shelducks are at the top of a food chain mostly confined to estuaries and numbers of adults might provide a useful index of change in this habitat. Their breeding success is so variable as to be of little use for this. A problem is that birds are opportunist feeders and may change their diet if the present food disappears but alternatives are available. For this reason, plants or invertebrates may be better indicators of pollution. Moreover, the main food of Shelducks, the small snail *Hydrobia ulvae*, itself eats bacteria which may thrive on some kinds of organic pollution, and so Shelducks might even increase as a result of pollution from sewage. On the other hand their numbers may be liable to decline for other reasons, such as restriction of range through reclamation of mud-flats, or from disturbance or through oil pollution killing food organisms. Many birdwatchers count birds as routine, and an effort to make a practical use of this hobby is worthwhile. Perhaps the only really satisfactory method of checking on Shelduck numbers is from the air, counting the whole area within a few hours. But this is expensive and depends on good weather and a pilot being available together. So synchronised counts by amateur birdwatchers will continue to be valuable. Counts done for the Wildfowl Trust are organised for the same day in each month, but ideally counts of Shelducks should be done at both high tide and dead low tide on the same day (tide times are given in local newspapers), and in April/May as well as through the winter. The time of the count and state of tide should always be recorded. Counts done at low tide on afternoons in late May usually give consistent results, if one adds one duck for single drakes on territories and also adds in birds known to be living

at fresh-water pools. This makes allowance for ducks away incubating eggs and gives the size of the breeding population. This is the routine method for assessing Shelduck numbers at the Ythan and is good for Aberlady; it would be worth checking elsewhere.

Conclusions and summary

The paper gives data for Shelduck numbers in the Firth of Forth from 1956 to 1971. The main results are :

Shelduck haunts now are much the same as in the early 1930's.

The build-up of numbers of adults returning after the moult migration occurs at different times in neighbouring estuaries in the Firth, associated with differences in the amount of disturbance.

The main wintering area is near Grangemouth, with about 1000-1300 birds in January. At this time there are relatively few elsewhere except at Aberlady Bay where there have recently been 120-140.

Spring populations of more than 100 birds occur at Grangemouth, Aberlady, Kennet Pans and Tyninghame Bay, but there are only about 80 breeding residents at Aberlady Bay. Smaller breeding stocks occur in the Almond estuary and near Tullibody Island, with scattered pairs elsewhere. About 20 Shelducks occur at Loch Leven in April and May. The total spring population for the whole of the Forth area is thought to be about 700-1000 birds, but there are no data on the number of breeders.

At most places there was no major change in spring numbers of full-grown birds between about 1960 and 1971, but they increased at Aberlady Bay.

Breeding success was variable and unlikely to be of use as an indicator of changes in habitat. There is a suggestion that smaller populations may tend to breed more successfully than bigger ones.

Care is necessary in interpreting the figures available up to now, but adult Shelducks are relatively easy to count, and since Shelducks are at the top of an estuarine food chain, monitoring the numbers of full-grown birds may be useful in demonstrating the effects of changes in estuarine conditions. Presumably these have not deteriorated significantly in the Firth of Forth in the last decade for Shelducks and their food. If standardized, winter counts of Shelducks by birdwatchers may be useful for monitoring changes in future, and some suggestions on methods are given.

Acknowledgments

Many people provided data used in this paper, especially A. Allison (who collated counts at Loch Leven), G. L. Atkinson-Willes (who checked count figures supplied to the Wildfowl Trust), A. Currie (who collated counts for the Moray Firth), G. Dick, T. Gibson, P. Hall, F. D. Hamilton and K. S. McGregor (who provided all the data for Aberlady in the early period), J. Potter, G. L. Sandeman (who did the Almond counts in 1971 and made special visits to Grangemouth in 1972), R. W. J. Smith, Prof T. C. Smout and Miss V. M. Thom. I am also grateful to D. Scott who drew the figures, and to Dr I. Newton, Dr I. J. Patterson, P. Rothery and M. Williams who helpfully criticised drafts.

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Short Notes

Birds at Rockall

Rockall, a coarse granite islet 70 feet high situated 200 miles west of the Hebrides, is now officially part of Scotland. During a nine-day visit to the rock to erect a navigational beacon in June 1972, I kept a record of birds seen there.

Most numerous by far were Fulmars, gliding in the wake of our ship as it steamed to and fro close to the rock. Gannets in all plumages, Kittiwakes and Guillemots were seen every day in small numbers, and single Great Skuas, unmistakable with their heavy flight and distinctive white wing patches, flew by on most days. Storm Petrels first appeared as southwesterly

gales increased to hurricane force on the 23rd and could usually be seen in small numbers thereafter; in the brilliant evening sunshine of the 26th up to a dozen of them were visible at one time. The few Manx Shearwaters observed were always far from the ship, flipping from one wing to the other low over the sea.

Razorbills and Puffins appeared occasionally, usually in small parties, and a good number of the latter were seen flying together inside Helen's Reef on the evening of the 27th. Two other species were recorded in very small numbers: Arctic Skuas (all dark-phase) and Lesser Black-backed Gulls. Also seen but not specifically identified were a large shearwater on two occasions, and a tern.

Daily totals of birds at Rockall, 19th-27th June 1972

	19th	20th	21st	22nd	23rd	24th	25th	26th	27th
Fulmar	50	200	100	50	15	150	150+	94	41
Manx Shearwater	1		3			3	1	*	
Shearwater sp			1		1				
Storm Petrel					1	2+*	2	22	1
Gannet	6	3	5	3	2	5	4	4	5
Great Skua		1	3	1	*		1	1	1
Arctic Skua			1	1	1	1			
Lesser Black-backed Gull		1	1	2					
Kittiwake	2	1		5	21	1	1	2	*¶
Tern sp								1	
Razorbill		3				1			4
Guillemot	1		1	1	4*	2	2	*	*
Puffin					3				3+

* singles all day
¶ 8 perched on the rock at 1915

Although seabirds perch on the rock and may possibly roost there when the weather is favourable, it seems impossible for them to breed there, since the waves regularly break right over it.

J. BUTLER.

(A photograph of Rockall is given in plate 16.—ED.)

Steller's Eider in the Outer Hebrides

A drake Steller's Eider had been seen earlier in the summer of 1972 at Vorran Island, South Uist. R. Jones, C. Palmar and I visited the area on the evening of 5th July and found the bird among Eiders just off a rocky promontory.

My first impression was of a duck considerably smaller than Eider, half black, half white, with a square-shaped head. We watched it both in the water and on the weed-covered rocks at ranges between 40 and 150 yards for about 1½ hours in good

weather and noted several variations from the descriptions in the Peterson and Hamlyn field-guides.

It associated freely, and swam easily, with the Eider, but occasionally showed aggression for a few seconds when it sat up in the water, flapped rapidly, and arched its neck forwards rather in the manner of an angry Mute Swan. Other birds in the flock sometimes pecked at it.

Description Head white, with a dark mark round the eye and a round crest at the nape of a noticeable light green (similar to green on head of drake Eider). Neck white; a black line from under the bill, wider on the throat, encircled the base of the neck. Upper back white, lower back black extending to the waterline. Underparts mostly white; lower breast, lower flanks and probably under tail-coverts light cinnamon-brown, not visible on swimming bird. On the white flank before the bend of the wing there was a small, roundish, dark mark. Wings black, with a large white patch on the forewing and white trailing edge on secondaries, only visible when wings open. Tail dark, quite long and often carried cocked up. Bill dark greyish, shallower and shorter than Eider's.

This drake was not particularly shy, and we had good views of it out of the water, when its stance was Eider-like, with the head lowered on the back. We particularly noticed that the cinnamon patch was much lighter and less extensive than shown in the field-guides (RJ noted that it looked as though stained by peaty water), and also that the upper back was white, not black, while the white of the foreparts did not continue the length of the body along the wing. The impression of square-headedness was produced by the light-green crest.

J. M. O'SULLIVAN.

(The bird was first reported to C. Brown early in May and seems to have disappeared in July, though there is an as yet unconfirmed November report from the same place. This is the sixth Scottish record and the first for Outer Hebrides.—ED.)

Eider and porpoises

At about 2220 hrs on 27th July 1972 I was watching a number of flightless Eiders from the beach at Kildonan, South Uist. It was a lovely, warm, still summer evening, with not a ripple on the sea. The Eiders were in small groups about 80 or 100 yards out. There was just one bird on its own, and, as I watched, this one was suddenly projected vertically three or four feet into the air, immediately followed by a porpoise. Another porpoise appeared, and the two proceeded to toy with this unfortunate duck, repeatedly coming up underneath it and shooting it into the air with their noses; they also jumped clean out of the water beside it, but never once did they appear to try to land upon the bird. The Eider tried desperately to prevent this. When the bird finally seemed too

exhausted to escape, its play value must have waned, because the porpoises then left it and went out to sea. The exhibition lasted perhaps three or four minutes. By the time the porpoises departed, the bird was about 50 yards from the beach. It soon seemed to recover.

LT CDR R. H. MILLER.

Further early fledging of Hen Harriers

The young of a pair of Hen Harriers, which in 1971 had nested in a conifer plantation near Dornoch, southeast Sutherland, fledged by 12th June, more than a fortnight earlier than any previous record (*Scot. Birds* 6: 444). On 26th May 1972 a nest with four young was found about 300 yards from the 1971 site. By the evening of 12th June two of the brood were fully feathered and appeared ready to fly. Unfortunately, the next visit to the nest could not be made until 11.30 a.m. on 15th June, when two of the young birds were flushed in the vicinity of the nest-site and flew away strongly, one of them disappearing over a ridge about 200 yards distant.

Although the adult female in both years lacked any individual recognition features, her general behaviour and the exceptionally early breeding strongly suggest that the same bird had reared both broods. Few sightings were made of the adult male in 1971 as the nest was not found until the young had fledged, but in 1972, when the older nestlings were nearing the fledging stage, the male suddenly became much more aggressive than the female towards intruders at the nest.

D. MACDONALD.

Spotted Sandpiper in East Lothian

On 30th October 1971 on the beach at Sandy Hirst, Tyninghame, I saw a small bird feeding among the seaweed on the high-tide line. At first sight I thought it was a Common Sandpiper, as it had the stance, brownish back and tail, white breast, belly and shoulder pads and relatively short bill of that species. A rather late migrant, I thought.

I approached within about 20 yards, and the bird seemed undisturbed and continued feeding on flying insects in the seaweed. On studying it with binoculars, I was immediately struck by two unusual features. First, there were 6-12 spots on the bird's side and underparts; dark brown or black and about the size of the bird's eye, they showed no pattern and appeared to be moulting out. Secondly, the legs and feet were a pale but definite yellow, with no trace of brown or green.

The light was quite good, but black clouds were rolling in from the southwest. I moved round until the sun was shining from the side and noticed that the bird appeared

greyer than the Common Sandpipers I had seen in summer. People walking along the beach disturbed the bird, and it flew about 50 yards and landed on a rock, bobbing in typical sandpiper fashion. In flight its wing-bars were clearly visible, and a noticeable feature was the spasmodic wing-beat, with the wings held down in the bow-shaped position. It began to rain heavily, and I left the beach after once more seeing the bird in flight. I did not hear it call during either flight. Thirty minutes later in heavy rain I searched the beach but failed to see the bird again.

After reading the field guides, I suspected I had been watching a Spotted Sandpiper but was not convinced until I had read D. I. M. Wallace's paper "Identification of Spotted Sandpipers out of Breeding Plumage" (*Brit. Birds* 63: 4).

L. L. J. VICK.

(This is the first Scottish record.—ED.)

A large movement of skuas in the Outer Hebrides

The weather at Balranald, North Uist, in mid May 1971 was stormy, with a strong northeast wind backing northwest and increasing to gale force. On the 17th the weather began to improve, and the wind dropped to force 5. That afternoon a quick look at the headland Aird an Runair showed much seabird activity; about 150 Gannets diving on a shoal of fish, some Arctic Skuas and a small group of Pomarine Skuas passing the headland, and numbers of Manx Shearwaters, Arctic Terns and auks also present. I began a systematic seawatch from the headland that evening and during 9¼ hours of observation between then and the end of the movement on 23rd May, saw totals of 6 Great, 92 Pomarine and 136 Arctic Skuas pass within recognition distance; one Long-tailed Skua was seen resting on the headland.

The detailed record below shows the composition of each group of birds passing, and for Arctic and Pomarine Skuas indicates the numbers of light phase/intermediate phase/dark phase birds in the group. Using 8.5 x 44 binoculars I could identify with certainty skuas up to 500 metres away, and only recorded these. Most were within 100 to 200 metres. Each group contained only one species.

Detailed Record

17th May 1971, 2000-2200 hrs	broken cloud, wind NW force 5						
Pomarine Skua	7/0/0	4/0/0	5/0/0				
Arctic Skua	3/0/0	0/0/3					
18th May 1971, 1037-1245 hrs	cloudy, wind NW force 4-5						
Pomarine Skua	1/0/0	4/0/1	5/1/0	6/0/1	1/1/0	2/0/0	9/0/1
	5/0/0	8/0/0					
Arctic Skua	1/0/1	0/17/0	0/0/8	0/2/0	0/8/0	0/22/0	2/0/0
	0/0/3	0/0/2	0/0/1	0/0/3	0/0/2	0/14/0	

2000-2200 hrs							
Arctic Skua	1/0/2 0/0/1	1/0/1	2/0/0	2/0/0	1/0/3	1/0/0	0/0/1
19th May 1971,	overcast, cloudy, dull						
1300-1315 hrs							
Pomarine Skua	5/1/0						
Arctic Skua	1/0/0						
1600-1730 hrs							
Great Skua	1	1					
Pomarine Skua	5/0/0	4/0/0					
Arctic Skua	1/0/0	0/0/1	2/0/1	4/0/0			
20th May 1971,	overcast, cloudy, bright, wind W force 4						
1120-1220 hrs							
Arctic Skua	7/0/0						
23rd May 1971,	hazy sun, wind variable, force 0-1						
0905-1105 hrs							
Great Skua	1	1	1	1			
Pomarine Skua	1/0/0	2/0/0					
Arctic Skua	0/0/1 1/0/1	1/0/0	1/0/0	1/0/0	0/0/1	0/0/1	3/0/0

Totals

	Great Skua	Pomarine Skua	Arctic Skua	Long-tailed Skua
17th May		20/0/0=20	3/0/3= 6	1
18th May		49/2/3=54	11/63/28=102	
19th May	2	14/1/0=15	8/0/2= 10	
20th May			7/0/0= 7	
23rd May	4	3/0/0= 3	7/0/4= 11	
	6	86/3/3=92	36/63/37=136	1

Great Skuas all followed the coastline in the direction of Lewis. The Arctic and Pomarine Skuas seemed to have been driven near the coast by the storm. Their flight on leaving the Aird (where all tended to concentrate) was generally north northwest, back out to sea. None flew east of a line running north from the Aird. With practice it became easy to pick out the bulkier shape, more rounded wings and heavier wingbeats of the Pomarine Skua, although I always confirmed identification of this species by the characteristic blunt, twisted tail—which gives the impression of a cork stuck on the end, or the legs of a heron protruding clumsily behind.

I first saw the Long-tailed Skua being mobbed by Arctic Terns as it rested on the headland on the evening of 17th May. It was a light-phase bird in superb plumage and unmistakable at the short range. The two central tail streamers were unbroken, about the same length as the body, very flexible, and moved gracefully in flight. Everything about the bird was much sleeker and more elegant than Arctic Skua. It hovered for a few seconds as if to confirm its identity, and finally flew back over the sea and out of sight.

G. CRITCHLEY.

Mole kills Herring Gull

On 12th July 1972 R. Mack found a freshly dead Herring Gull lying in a field some 200 yards from Godscroft Farm near Abbey St Bathans, Berwickshire. Protruding from the angle between the neck and the left wing was the head of a dead mole. The bodies were sent by A. Cowieson to the Royal Scottish Museum for a more detailed examination.

X-rays were taken at the Royal (Dick) School of Veterinary Studies, in order to determine the undisturbed position of the mole within the body of the gull and to check for any bone damage. The gull was then carefully opened, and the two bodies examined together and apart. The conclusions were as follows : the mole had been swallowed alive and probably undamaged (it had no broken bones and there was no sign of any bruising on the skin). As it was swallowed it had made a 2cm tear in the top of the gull's oesophagus; from the oesophagus it had passed into the thoracic cavity and into the highly distensible crop-like stomach. The mole then tore through the stomach wall, forced its way through the arch of the furculum (wish-bone) until it came to rest, as discovered, with its head and fore-limbs outside the body of the gull. Smears of blood on the gull's neck-feathers suggest that the bird was still alive at this point, though it must have soon succumbed because of the severe damage to the lungs and blood vessels around the heart.

Having got so far, what stopped the mole from making good its escape? Godfrey and Crowcroft in *The Life of the Mole* (1960) note that a mole tunnels using one forelimb at a time to loosen and throw back the soil, at the same time bracing itself against the wall of the tunnel with its other three limbs. Every so often the mole turns round and, using one of the forelimbs like the blade of a bulldozer, pushes the loose soil back along the tunnel and up the middle of the nearest mole-hill. The weight of soil the mole must contend with has been calculated to be approximately 800 gms, that is, some eight times the average body weight.

In the present case the mole was fully grown and probably filled all the available space within the gull's thorax. It could powerful fore-limbs, force a way out between the two halves of the furculum. Unfortunately, once the front half was outside the thorax of the gull the mole was unable to gain purchase with either fore or hind limbs and so became trapped about the region of its diaphragm as the bones of the furculum closed to their normal positions. It is significant that both the scissor and the barrel types of mole-trap kill by squeezing the

mole in this area. It would appear that the mole died of suffocation, coupled perhaps with exhaustion and shock.

Herring Gulls are omnivorous and are recorded in the *Handbook* as able to swallow, in one piece, comparatively large items of food, for example moles, young rats, young rabbits, and even nestlings of their own and other species. Quin records a fledgling Lesser Black-backed Gull regurgitating a mole (*Brit. Birds* 62: 117). Such items of prey are normally killed before being swallowed, but Tinbergen in *The Herring Gull's World* (1953) records one incident where this may not have been the case; he writes, "Moles are almost certainly caught alive and eaten by gulls. Once I observed, from a distance, a Herring Gull pecking vigorously at what I thought was a struggling mole; anyhow it was a mammal of that size. After a number of violent pecks it swallowed its prey and flew off, twisting and stretching its neck in a most peculiar way, as if the mole were still 'wriggling and wriggling and wriggling inside her'." Occasionally gulls, grebes and other fish-eating birds are killed when they try to swallow spiny fish which stick in their throats, but there appear to be no confirmed records of gulls dying as a direct result of swallowing a still living mammal, even though this would seem to be a fairly common hazard facing these voracious birds.

I. H. J. LYSTER.

Habitat of Redwings in Scotland

During June and July 1971 and May to July 1972, while doing field work for the Atlas Project, I visited samples of all the habitats in 131 ten-kilometre squares in Scotland. In 18 of the squares, in Caithness, Sutherland, Ross-shire, Inverness-shire and Perthshire, I found a total of 24 singing Redwings and proved breeding for 12 pairs. Initial location was usually by the distinctive fluty song of four to seven (commonly five) descending notes "*d-de-du-du-doo*". A description of the habitats may help location of the bird in new areas.

Only eight of the 24 were not near human habitation and no fewer than 15 were in the garden of a lodge or large house, usually with rhododendrons or other dense shrubs. I found none in open birch woodland (despite much time spent in this habitat) and only one in coniferous woodland—and that wood was unusual in that large birches had been left as standards. Three were in open oak woodland, two in dense coppiced birch woods, and there were singles in an isolated patch of birch round a house, dense alder scrub at the head of a loch, and open mature woodland with dense undergrowth.

The *Handbook* notes Redwing habitat on the Continent (*T. i. iliacus*) as woodlands of birch and alder, pine where the trees are not too large, and scrub growth of birch, willow, etc.; and in Iceland (*T. i. coburni*) as broken, often rockstrewn country, with dwarf birch and willow-scrub or even almost devoid of scrub. In Scotland Redwings seem to prefer a combination of tall trees (as song posts) and dense shrub undergrowth (for nest sites), with nearby short grass, such as lawns (for feeding).

J. T. R. SHARROCK.

Scarlet Rosefinch in Shetland

On 8th May 1971 on Whalsay I noticed a bird sitting on a wall between two House Sparrows and immediately identified it as a male Scarlet Rosefinch. The bird was similar in size to House Sparrow but showed a large amount of very obvious red, enabling me to identify it at a glance.

Description Forehead, crown, nape, cheeks, chin, throat, upper breast brilliant brick red, with a few grey-brown flecks on crown and ear-coverts visible only at very close range; lower breast and belly to legs pinkish red, less brilliant than crown etc; remainder of underparts off-white, tinged pink; mantle brown with pink suffusion; rump red, as crown; tail noticeably forked, uniform dark brown; wings mid brown, suffused pink, with slightly paler tips to median and greater coverts forming a very indistinct pinkish buff double wing-bar; some similarly coloured pale edges to tertials; bill heavy-looking, blunt, broad and deep, grey-brown; eye dark and prominent; legs brown.

The flight was undulating, heavier than that of House Sparrow, with less rapid wingbeats. At first the bird was very approachable. It frequented a crofting area and fed mostly on seeds in newly planted fields of corn. It perched freely on buildings and bushes and was seen picking buds from flowering currant on several occasions. A soft but penetrating *hu-irc* was heard several times. At close range, the plumage was seen to be immaculate, and there was no cagebird ring.

The bird was seen also by Mrs M. E. Marshall and J. H. Simpson.

B. MARSHALL.

(Although Scarlet Rosefinches occur annually, especially at Fair Isle and in Shetland, spring records are scarce and red males rare.—ED.)

Reviews

The Birds of Britain and Europe with North Africa and the Middle East. By Hermann Heinzel, Richard Fitter & John Parslow. London, Collins, 1972. Pp 320+16. 700 species illustrated in colour. 19 x 11½ cm. £1.50.

This latest European bird guide is Collins's reply to the popular Hamlyn guide. The presentation is almost identical, with all species illustrated in colour, and a brief text on the page opposite the plate, together with a European range map and symbols and letters following the text to indicate British status and relative abundance. The scope of the guide includes North Africa and the Middle East.

The plates, by Herman Heinzel, are presented in a pleasing manner, with each family on a different-coloured background, and illustrated in typical, though unobtrusive, settings. Nearly all readily distinguishable races and plumages are also shown. Unfortunately the colour printing of certain plates, notably those of ducks, is poor. There are also errors, such as the grey (instead of brown) coverts of the Lesser Kestrel in flight, the inaccurate barring of the rather extraordinary Hoopoe (which seems to be leaning over backwards to accommodate a flight picture), the absence of white on the tips of the outer tail-feathers of the Mistle Thrush in flight and the quite misleading head pattern of the Lapland Bunting in winter. A novel and helpful feature at the front and back of the book is a small illustration of a representative of each family beside the page number on which the family starts. The text by Richard Fitter is often extremely abbreviated, and the format leads to some unevenness, allowing four lines of description for Hume's Lesser Whitethroat and 17 lines for Blackbird. However, within the considerable limitations imposed by the text-opposite-plate layout (which most birdwatchers find easier to use than a format with the (fuller) text on a different page as in the Peterson field guide), a good job has been made of picking out salient features. The small, coloured, European range maps present information on summer and winter status clearly, although a colour stronger than yellow would have been desirable for breeding summer visitors. For example, it would be easy to overlook that Red Kite breeds in Sweden or Roseate Tern in northwest France. These maps are supplemented at the back of the book by a further 240 maps by John Parslow of the British range of 200 regular breeding species, and the 40 main winter visitors and passage migrants. These maps have been a major undertaking and are much better than any previously produced: they show whether a bird is a common or less common breeder, and where non-breeding visitors occur commonly or less so (but still regularly). BTO Atlas recorders will probably be able to spot odd mistakes in their region, e.g. Barn Owl not shown in the Dee faunal area, but any such errors could perhaps be revised following publication of the Atlas. The maps are adequately cross-referenced from the text, but not from the index.

With three pocket-sized European bird guides to choose from now, one will inevitably be asked which is best. In my opinion, the new guide would be a most confusing and unsuitable book for anybody beginning birdwatching in Britain, as so many species are illustrated. For European birds the Peterson field guide must still remain preferable for its more comprehensive descriptive text. However, those who like the Hamlyn guide should find the presentation and scope of the new book an improvement. Furthermore, the fact that it deals with species from regions which are being increasingly visited by British birdwatchers and which have not previously been served with a suitable fieldbook, must ensure it a place alongside the Peterson field guide. To have produced this well

bound book for as little as £1.50 has been a remarkable achievement, but it is to be hoped that a hard-cover version will soon become available.

N. PICOZZI.

The Storm Petrel and the Owl of Athena. By Louis J. Halle. Princeton, University Press; London, Oxford University Press, 1972. Pp. xii+268; many drawings in text. 22 x 16 cm. £3.60.

The title on the dust-jacket, superimposed over the photograph of a bonxie, does little to suggest what kind of reading lies within the covers. The book is in two parts, each comprising a series of essays: most of those in part two have previously appeared as magazine articles, whereas part one was mainly inspired by a more recent six-week holiday spent in Shetland.

The pitfalls of writing even half a book based on such a short acquaintance with an area are avoided by the dexterity of the author in combining his own observations with those of other writers, and so, with the light of his previous wide experience and obvious learning, there emerges a series of essays that could almost be described as ecological sermons; using birds as their texts, they develop themes encompassing the whole history and relationship of birds and man. At times profound and philosophical, often lyrical and humorous, the book is written in such a simple and unpretentious way that it can be enjoyed by people who have no claims to either literary knowledge or ability. I am sure that many readers will find, as I did, passages expressing thoughts they have had, but have never been able to put into words.

In the second part of the book Professor Halle roams widely, from his present home at Lake Geneva in Switzerland to the rolling pampas of South America and to the Greek islands. His sympathy and love of birds together with a concern for their future come through strongly, and today, when the problems of development and pollution are the topic of so many discussions, I am sure readers will find the book thought-provoking.

R.J.T.

Birds of South America : illustrations from the lithographs of John Gould. Text by A. Rutgers. London, Eyre Methuen, 1972. Pp. 321; 160 colour plates. 25 x 19 cm. £5.

The book comprises 160 colour plates taken from Gould's four monographs of the American quails, the trogons, the toucans and the hummingbirds. Each plate illustrates a single species, and on the facing page there is a brief text by A. Rutgers outlining the bird's distribution and habitat, its behaviour in the wild and in captivity. Avicultural and taxonomic notes are given on many species, and the author comments on the accuracy of some of the plates in the light of modern knowledge.

This is a beautifully produced volume (it is printed in Holland); the reproduction of the plates on high quality paper is outstanding and does full justice to the originals; the colours are full of clarity and vibrance. The illustrations of the toucans and the hummingbirds are especially delightful in their natural forest or floral settings.

Gould (with his collaborators) produced nearly 3,000 illustrations for 41 folios, and the present volume is a nice tribute to his monumental 19th century skill and industry. Who in the 20th century will draw the rest of South America's birds for us ?

T. DELANEY.

The Oxford Book of Birds, Pocket Edition. Text by Bruce Campbell; illustrations by Donald Watson. London, Oxford University Press, 1972. Pp xvi + 207; 3 line drawings; 96 coloured plates. 16 x 11½ cm. £1.35.

This is a miniature replica of the well known Oxford Book of Birds by Bruce Campbell and Donald Watson. It truly lives up to its "Pocket Edition" subtitle, for it measures only 4½ x 6¼ inches, yet its pages contain a wealth of information on all our British birds, giving description, habitat, and details of song, breeding and so on. As a result of the reduction in size, the text is now in very small print (too small for some eyes), but Donald Watson's beautiful coloured illustrations have reproduced extremely well in the smaller format, and for these alone this useful reference work should be well worth its modest price.

OLIVE T. THOMSON.

Wild Highlands. By Lea MacNally. London, Dent, 1972. Pp. 113; 48 plates (74 black-and-white photographs). 22 x 14 cm. £2.95.

Another delightful and unsentimental book by the author of *Highland Year* and *Highland Deer Forest*. With over 20 years actively studying wild animals and birds in the wilder parts of the West Highlands small wonder that Lea MacNally writes with such absorbing knowledge and conviction.

Numerous creatures are mentioned throughout the book, but it deals mainly with his own 'tame' red deer and roe deer, their wild counterparts, and Golden Eagles and foxes. Many of his anecdotes are superbly illustrated by his own photographs.

If at first sight the price seems rather high, do not be misled; the quality of the illustrations and written information more than compensates. A very readable book.

HARVEY BURTON.

Enquiries

Effluent enquiry—an SOC investigation of sewage and other outfalls as sources of health and hazard to Scottish birdlife. At the suggestion of its Research Committee, the Council of the SOC is sponsoring a survey of outfalls of sewage and other effluent (such as distillery wastes) into Scottish tidal (and occasionally fresh) waters and of the birds associated with them. Large outfalls are of major importance to species such as Scaup, Goldeneye and Mute Swan, but the concentrations of these birds may also be highly vulnerable to toxic discharges and pollution, for instance by oil. Various schemes for improved sewage disposal and an increasing desire by industry to use coastal sites make a survey of the present situation particularly valuable as a base from which to consider the effects of these developments.

The enquiry is being organised by B. Pounder, 64 Forfar Road, Dundee, and he is now attempting to locate and classify all significant outfalls. A wider appeal for help will be made when this information is collected, but meantime he would be very glad to have offers of help from anyone interested, and

especially any data on existing discharges or spoil dumps at food-processing factories, whether or not these are associated with concentrations of water birds.

Crow hybrid-zone enquiry. There is evidence that the zone of hybridisation between Hooded and Carrion Crows is moving north, at least on the east coast of Scotland. Accurate mapping of the present zone limits will provide the basis for a picture of future changes. To get this SOC enquiry under way in time for the 1973 breeding season, volunteers are needed now : they should contact Tony Cook, Edinburgh University, Department of Zoology, West Mains Road, Edinburgh EH9 3JT.

Great Crested Grebe breeding survey 1973. The aim of this SOC enquiry is to locate every breeding pair of Great Crested Grebes in Scotland and, as far as possible, record how many young are fledged by each pair. Two visits should provide the necessary information—one in early summer to locate the breeding birds and another in late summer to count the surviving young.

The enquiry will be carried out on a county basis. Forms can be obtained from the local recorders or from the organiser, R. W. J. Smith, 33 Hunter Terrace, Loanhead, Midlothian EH20 9SJ.

Aberlady Bay. In 1960 the East Lothian Antiquarian and Field Naturalists' Society published a check list of the birds of Aberlady Bay by F. D. Hamilton and K. S. Macgregor. This was later published by the SOC as a separate booklet.

It has been felt for some time that this should be updated, not only with regard to rare birds but also concerning changes in the migration patterns of the common waders and ducks. We should be pleased therefore to receive any unpublished details of uncommon birds and large counts, either single or in series, of common birds, with details if possible of tide and weather. Please send all records to Frank Hamilton, 17 Regent Terrace, Edinburgh, EH7 5BN.

Buzzards. As part of an intensive population study in an area between Kingussie and Boat of Garten, Inverness-shire, many Buzzards have been individually colour-ringed. In addition, several carry small yellow or pale-green, numbered and/or lettered wing tags. The tag is situated on the upper surface of the leading edge of the wing and is visible in flight or at rest. So far, colour-marked birds have been seen or recovered as far afield as Skye and Fife. Any report of tagged or colour-ringed Buzzards, however scanty the details, will be gratefully

received by us. Please contact: N. Picozzi, The Nature Conservancy, Banchory, Kincardineshire AB3 3PS (Banchory 2206) or D. Weir, Creagdhu, Newtonmore, Inverness-shire (Laggan 234).

Shelducks. Dr D. Jenkins is anxious to obtain more data on Shelducks in Scotland. Interested observers could help:

(i) by making accurate counts of Shelducks at high and low tide on the usual monthly count dates. (When only one count can be done, high tide is preferable). (ii) by making a count at low tide on an afternoon in April, May and early June (iii) by making other counts whenever possible (iv) by recording the number of apparently solitary drakes on afternoons in late May (v) by recording the numbers of ducklings, first-year birds and adults seen on each count, especially the number of ducklings in the second half of July (vi) by collaborating with the local organiser so that counts in as wide an area as possible are done on the same day (vii) by also recording counts that show no Shelducks. Time of day and state of tide should be specified for all counts.

If anyone can help with any or all of these aspects, Dr Jenkins' address is Hill of Brathens, Glassel, Banchory, Kincardineshire AB3 4BY.

The Scottish Ornithologists' Club

Revenue Account for the year ended 30th June 1972

	Year to 30/6/72	Year to 30/6/71
INCOME—		
Subscriptions received for year	£4084	£3796
Income Tax recovered on covenanted subscriptions	589	604
Dividends and Interest received (gross)	197	195
Surplus on Bookshop (sales £7282)	1899	1382
Sale of 'Scottish Birds'	271	170
Sundry sales less sundry purchases	113	17
Donations received	99	63
	£7252	£6227
EXPENDITURE—		
Branch expenses including lectures	£340	£372
Travel expenses of Council members and of delegates to conferences	140	195
Secretarial services	3655	3270
Office expenses	701	536
Scottish Centre for Ornithology and Bird Protection: Club's share of running expenses	841	317
Cost of books purchased for library	111	56
Cost of publishing 'Scottish Birds' (less advertising revenue £341)	1087	786
Net cost of annual Conference	—	121
Subscriptions paid	38	33
	£6913	£5686
Excess of Income over Expenditure carried to Balance Sheet	339	541
	£7252	£6227

The Scottish Ornithologists' Club

Balance Sheet as at 30th June 1972

			Year to 30/6/72	Year to 30/6/71
Accumulated surplus as at 30th June 1971			£3566	£3025
Add: Excess of Income over Expenditure for year			339	541
Accumulated Surplus as at 30th June 1972			£3905	£3566
(Note : £1000 of this is earmarked for the House Fabric Fund)				
Made up of:				
Cash in hand and Bank current accounts			£203	£316
Savings Bank accounts			202	560
Bookshop stock at valuation			1640	977
Tie and Badge stocks at valuation			151	211
Debts due to Club			536	565
Night store heaters—Cost	£465			
Less depreciation	195		270	360
Addressing machine—Cost	530			
Less depreciation	130		400	—
Investments at cost, as below			2900	2900
			£6302	£5889
Less:				
Life Membership Fund	£675			500
Subscriptions paid in advance	54			50
Debts due by Club	1236			816
Sum due to Endowment Fund	113			510
'Scottish Birds' Fund	152			150
Sums earmarked for : Library binding	167			238
Painting	—			59
			2397	2323
			£3905	£3566

Investments as at 30th June 1972 :

	Market Value	At cost	At cost
Safeguard Industrial Investments Ltd.—700 Ord. shares of 25p each	£560	£508	£508
£950—6½% Treasury Loan 1976	902	946	946
£1300—British Electricity 3% Guar. Stock 1974/77	1105	952	952
£550—5¼% Conversion Stock 1974	536	494	494
	£3103	£2900	£2900

ENDOWMENT FUND

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

Revenue Account for the year ended 30th June 1972

	Year to 30/6/72	Year to 30/6/71
EXPENDITURE—		
Grants as detailed in Report of Council	£400	£ —
INCOME—		
Interest and Dividends received (gross)	224	227
Excess of Expenditure over Income	£176	(£227)

Balance Sheet as at 30th June 1972

Endowment Fund as at 30th June 1971		£2519	£2519
Accumulated unexpended Income as at 30th June 1971	£731		505
Deduct: Excess of Expenditure over Income ...	176		(227)
		555	732
		£3074	£3251
Deduct: Fees, etc., for purchase of Shares		13	—
		£3061	£3251
Made up of:			
Investments as below		£3011	£2441
Royal Bank of Scotland Deposit Account		88	300
Due by Club's General Funds		112	510
		3211	3251
Deduct: Grant allocated but not yet paid		150	—
		£3061	£3251

Investments as at 30th June 1972:

	Market Value	At cost	At cost
976 Units of the Equities Investment Trust for Charities	£2815	£1000	£1000
£1140 5% Exchequer Stock 1976/78	1003	1000	1000
£440 8½% Conver. Unsecured Loan Stock 1993/98 British Printing Corporation Ltd. ...	361	441	441
250 St Andrew Trust Ltd., Ordinary 25p ...	582	570	—
	£4761	£3011	£2441

HOUSE FABRIC FUND

Summary of Accounts for the year to 30th June 1972

			Year to 30/6/72	Year to 30/6/71
RECEIPTS—				
Balance (debit) as at 30th June 1971			£(25)	£129
Year's rent from Mr and Mrs George Waterston			150	150
Nine months rent from World Wildlife Fund			98	130
Three months rent from British Council for Rehabilitation of the Disabled			35	—
Grants from S.O.C. Revenue Account			300	—
Miscellaneous Interest			4	5
			£562	£414
EXPENDITURE—				
Repairs and maintenance			£127	£181
Property Burdens	£381			
Less contribution from tenants	9			
			372	214
Insurance			19	18
Miscellaneous			10	26
			£528	£439
On deposit with Edinburgh Building Society			34	£100
Loan from S.O.C. General Revenue Account			—	125 (25)
			£562	£414

EDINBURGH, 3rd October 1972.—I have audited the foregoing Revenue Accounts for the year to 30th June 1972, and the Balance Sheet at that date. I have accepted as correct the 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) ARTHUR WALKER,
Chartered Accountant.

REPORT OF COUNCIL

Your Council submits the following Report for the year 1971/72:

Membership At the end of the session the Club had 2371 members. This was a net increase during the year of 185, and for the first time over 400 new members joined (429), 70 more than last year. Four members transferred to Life Membership. A table of membership for the past six years is given below.

	30/6/67	30/6/68	30/6/69	30/6/70	30/6/71	30/6/72
Ordinary	1524	1677	1771	1849	1889	2054
Junior	259	265	274	286	282	298
Life	—	3	6	9	10	14
Honorary	4	4	5	5	5	5
	1787	1949	2056	2149	2186	2371
Increase	159	162	107	93	37	185

The number of Deeds of Covenant signed by members rose from 409 to 445, representing 509 subscriptions, enabling us to reclaim £590 of tax. It is very helpful that nearly a quarter of the Ordinary Members have signed a Deed of Covenant, but we hope that more Members will consider this way of helping to combat the ever increasing costs and to bridge the gap made by the further reduction of income tax next year.

Deaths It is with deep regret that Council records the death during the year of Commander Sir Geoffrey Hughes-Onslow, a founder member and Honorary President of the Ayr Branch; the Earl of Mansfield and Mr J. Stainton Crosthwaite, also founder members; Mr Victor Bateman and Lieutenant Colonel J. K. Stanford.

Honours Council has great pleasure in recording the award of the Gold Medal of the Royal Society for the Protection of Birds to Mr George Waterston.

Business of Council Five meetings of Council were held during the year, while the Management Committee met once. Business discussed included the following :

Ornithological work by the Club Council was most concerned that the impetus and interest stimulated by work on the Atlas project organised by the British Trust for Ornithology over the past five years should not be lost. Accordingly, a small Research Committee, consisting of Mr A. T. Macmillan (Chairman), Mr R. H. Dennis and Dr I. Newton, was formed to investigate and make recommendations for Scottish projects, which could be either national or at Branch level.

Winter Wildfowl Counts For the past nine years Miss Valerie Thom has been the Organiser, for the Wildfowl Trust, of the winter wildfowl counts in Scotland. Miss Thom, who followed the work done by the late Misses Baxter and Rintoul and Miss Betty Garden, has had to give up the work because of her other commitments, and in future there will be no overall Scottish Organiser. However, in the last two years, Miss Thom built up a network of Regional Organisers, responsible for counts in their own areas, who now deal direct with the Wildfowl Trust at Slimbridge. Council wishes to record its sincere appreciation to Miss Thom for her work which has made a valuable contribution to Scottish ornithology.

Conference location With the ever increasing attendance, consideration was given to holding the annual Conference at a different location. A thorough investigation was carried out but, accepting that it should be held centrally in Scotland, alternatives to Dunblane were ruled out either because of expense or unsuitable location. Other Conference centres are being built and will be considered when they have been completed.

Endowment Fund It was agreed that full support should be given to the BTO's Atlas project in its final year, and your Council approved a Grant of £150 to help subsidise observers who visited Scottish islands.

Council also approved a Grant of £250, with a further £50 if required, to the North Solway Ringing Group to cover the capital cost of cannon netting equipment which will be used primarily for ringing and research on waders. This Grant was only approved after very careful consideration, including a report of recommendation by the Research Committee, and is subject to stringent conditions regarding the use of the equipment. With Council approval, the equipment is available to other qualified members.

Cromarty Firth Port Authority A Draft Order setting up the Cromarty Firth Port Authority was published in April. There were no safeguards to the environment or wildlife in the Cromarty Firth in the Order, and

the Club, together with the Royal Society for the Protection of Birds and the Wildfowl Trust, supported the Scottish Wildlife Trust in a Petition against the Order which was submitted to the Secretary of State for Scotland. The result of this Petition is still awaited.

Council wishes to draw particular attention to this very good example of the way in which voluntary organisations can cooperate in combating the threat to our environment and wildlife. Whenever occasion demands, the Club will associate itself with, and lend full support to conservation bodies on issues of this importance.

Secretarial Staff Ever increasing mail order book sales, work in the Library and greater membership, have combined to make further assistance necessary. On the recommendation of the Management Committee, Council has agreed to appoint a full time Assistant who will start work towards the end of 1972.

Club Representation The Club was again represented on the British Section of the International Council for Bird Preservation by Sir Landsborough Thomson and Mr George Waterston, and on the Duck Working Group of the International Wildfowl Research Bureau by Miss Valerie Thom.

Annual Conference The Twenty-fourth Annual Conference and the Annual General Meeting, held in Dunblane, were attended by 331 members and guests. On the Saturday morning three Danish ornithologists, Mr A. Holm Joensen (Game Biology Station, Kalo), Mr N. Otto Preuss and Mr Jan Dyck (Zoology Museum, Copenhagen), gave lectures on Ornithology in Denmark. These had been preceded on the Friday evening by a short talk on 'Bird Locations in Denmark' by Dr Lorenz Ferdinand, President of Dansk Ornithologisk Forening. On the Sunday morning Dr Ian Newton (Nature Conservancy, Edinburgh) spoke on 'Birds of Prey in Scotland', and he was followed by Mr Gordon Hollands who very kindly showed his excellent film 'Storks over Stavno'.

Branches During the winter a full programme of lectures was given in all Branches, while both summer and winter excursions were organised by Branches themselves. Attendance at the Dumfries weekend to the Solway goose grounds was greater than on any previous occasion. Council is most appreciative of the help given by members of the Dumfries Branch in making all the arrangements and leading excursions, for the enjoyment of many members and their friends.

Fieldwork Members of the Club have taken part in a number of activities during the year which included :

Atlas of British Breeding Birds (BTO) in its final year of fieldwork; Winter Wildfowl Counts (Wildfowl Trust); Beached Birds Survey (RSPB); Estuaries Survey (BTO) and Rook Roost Survey (SOC).

Scottish Birds Four numbers of the journal, including the 1971 Scottish Bird Report, were published during the year, with an Index to Volume 6, now completed.

Library A number of new reference books were added to the Library and further gifts of books, journals and reprints were donated. Council is most grateful to all donors for their generosity.

Bookshop Sales in the Bookshop continued to rise, being over a third more than last year, with mail orders, for which we charge no postage, still constituting the greatest part. These sales naturally bring a considerable increase in the work of ordering, checking, invoicing and packing the books, which is reflected in the need to appoint another full time member of staff.

Council is most grateful to the British Trust for Ornithology for allowing the Club to arrange a book display at its annual Conference in December, but this year we were unable to accept the invitation of the Irish Wildbird Conservancy and RSPB to take a display to their annual Conference in Eire.

Scottish Centre After occupying rooms in the Centre for the past four years, the Scottish Regional Office of the World Wildlife Fund moved to Perth, which is more central for its work. Two basement rooms have been leased to the Scottish Office of the British Council for the Rehabilitation of the Disabled.

The Centre continued to be used for informal discussion groups and for meetings of the Fair Isle Bird Observatory Trustees, the Isle of May Bird Observatory and Field Station Committee, and the Aberlady Bay Nature Reserve Biological Committee.

Enquiries from many British and overseas visitors were dealt with throughout the year.

Acknowledgments In conclusion, the Council wishes to thank the many members of the Club who have given their time and help in many ways in order to give advice and enjoyment to others.

For the Council
A. DONALD WATSON, President.

THIRTY-SIXTH ANNUAL GENERAL MEETING OF THE CLUB

The Thirty-sixth Annual General Meeting of the Club was held in the Hotel Dunblane Hydro, Perthshire, on Saturday 28th October 1972 at 6 p.m. Mr A. Donald Watson, President of the Club, presided over an attendance of about 200 members.

Apologies Apologies for absence were received from D. G. Andrew, Dr D. A. Bannerman, Dr David Boddington, Dr Morton Boyd, Professor G. M. Dunnett, M. J. Everett, Lt Col J. P. Grant and Dr I. D. Pennie.

Minutes The Minutes of the Thirty-fifth Annual General Meeting, held in Dunblane on 30th October 1971, were approved and signed.

Report of Council The Report of Council for Session 35, presented by the Chairman, was adopted.

Accounts The Accounts for the year ended 30th June 1972, presented by the Hon. Treasurer, were approved.

Appointment of Auditor Mr Arthur Walker C.A. was re-elected Auditor for the ensuing year.

Election of new Office Bearers and Members of Council In the absence of any other nominations, the Council's recommendations for the following elections were approved :

President: George Waterston to succeed A. Donald Watson who had completed his term of office.

Vice-President: Andrew T. Macmillan to succeed George Waterston.

Council Members: J. H. Ballantyne, F. D. Hamilton, H. Robb and B. S. Turner to succeed Andrew T. Macmillan, Professor M. F. M. Meiklejohn and T. D. H. Merrie who were due to retire by rotation, and R. S. Baillie who had resigned due to business commitments.

The Chairman thanked the retiring members for their service to the Club.

Young Member: The Chairman announced that Council had co-opted R. L. Swann as the Young Member of Council for the coming year; if he is unable to fulfil the commitment his place will be taken by R. W. Forrester. The Chairman thanked the retiring Young Member, R. G. Nisbet, for his service to the Club during the past year.

Statement on Club policy on Conservation and the Environment. The Chairman reported that Council had given considerable thought to the policy of the Club with regard to the ever increasing threat to birds in Scotland as a result of pollution and industrial development. Summarising the main points of the statement, issued to all members present and to be published in *Scottish Birds*, he stressed that while the Club should not develop into yet another conservation body, it should liaise very closely with, and supply facts and data to, the various conservation organisations; only in particular cases would the Club take independent action on conservation matters. Research projects, recommended by the newly formed Research Committee, would often be conservation oriented. Members are to be encouraged to take an active part by keeping in close touch with local representatives of conservation organisations, and in collecting facts and data on species in their own area.

When members were invited to comment, Dr W. R. P. Bourne said that, while he welcomed the statement, he wished to stress the importance of concerted action in the face of the current attacks on our environment. Urging the Club to take more positive action, he stated that ornithologists had always given a lead when our wildlife was in danger, and that with the new developments in the North Sea threatening our Scottish coasts, a strong and vigorous lead should be given by Scottish ornithologists. The President agreed that Council would take account of his views. Council's statement of policy was adopted.

Atlas of British Breeding Birds At the invitation of the Chairman, C. G. Headlam, who had been the Scottish co-ordinator for the British Trust for Ornithology's Atlas project, thanked all members who had helped during the past five years. He particularly thanked all the Regional Organisers who had worked for long hours collating the records sent on to him and to Dr J. T. R. Sharrock, the National Organiser.

Votes of Thanks The Chairman moved a warm vote of thanks to all members and the staff of the Club who had helped to make the Conference such a success. The Meeting closed with a sincere vote of thanks to the retiring President by George Waterston, President-elect of the Club.

COUNCIL AND OFFICIALS OF THE CLUB FOR SESSION 36

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

President: George Waterston, O.B.E., F.R.S.E.

Vice-President: Andrew T. Macmillan, C.A.

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

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

Secretary and Treasurer: Major A. D. Peirse-Duncombe.

Deputy Secretary: Mrs George Waterston.

Membership Secretary: Mrs R. D. Smillie.

Editor of "Scottish Birds": T. Delaney.

Assistant Editor of "Scottish Birds": D. G. Andrew, W.S.

Business Editor of "Scottish Birds": Major A. D. Peirse-Duncombe.

Council: J. H. Ballantyne, R. H. Dennis, Dr I. T. Draper, F. D. Hamilton, C. G. Headlam, Miss M. P. Macmillan, Dr I. Newton, N. Picozzi, H. Robb, B. S. Turner. **Young Member** co-opted for 1972/73: R. L. Swann.

Branch Representatives to Council: R. G. Caldow (Glasgow); Miss G. L. C. Falconer (St Andrews); C. K. Mylne (Edinburgh); B. Pounder (Dundee); R. T. Smith (Dumfries); A. G. Stewart (Ayr).

BRANCH AND GROUP OFFICE BEARERS

Aberdeen: Chairman, N. Picozzi; Vice-Chairman, D. P. Willis; Secretary, Miss F. J. Greig; Committee, A. Duncan, A. Robb, R. F. Yule.

Ayr: Chairman, A. G. Stewart; Vice-Chairman, Dr M. E. Castle; Secretary, R. M. Ramage; Committee, W. R. Brackenridge, J. L. Burton, R. W. Forrester, R. H. Hogg, Mrs J. K. R. Melrose; Junior Member, B. C. Forrester.

Dumfries: Chairman, R. T. Smith; Vice-Chairman, B. S. Turner; Secretary, W. Austin; Committee, Mrs E. M. G. Ross, H. M. Russell, J. Todd, A. D. Watson.

Dundee: Chairman, Dr D. G. Adamson; Vice-Chairman, B. Pounder; Secretary, Mrs A. Noltie; Committee, N. K. Atkinson, P. N. J. Clark, Mrs J. A. R. Grant, D. B. Thomson.

Edinburgh: Chairman, C. K. Mylne; Vice-Chairman, J. M. S. Arnott; Secretary, L. W. G. Alexander; Committee, Mrs C. M. Adams, I. V. Balfour-Paul, W. A. Craw.

Glasgow: Chairman, R. G. Caldow; Vice-Chairman, Dr I. T. Draper; Secretary, Mrs I. T. Draper; Committee, Mrs H. S. C. Halliday, R. A. Jeffrey, A. McIver, R. G. Nisbet.

Inverness: Chairman, R. H. Dennis; Vice-Chairman, Rev. J. M. Crook; Secretary, M. I. Harvey; Committee, Miss J. Banks, Miss P. R. Forbes, Mrs W. Morison.

St Andrews: Chairman, Miss G. L. C. Falconer; Vice-Chairman, Miss J. McFarlane; Secretary, Miss M. M. Spires; Committee, I. G. Cumming, Miss M. H. E. Cuninghame, Miss D. E. Rowling, J. S. Wiffen.

Stirling: Chairman, Rev. G. T. Jamieson; Vice-Chairman, K. P. Anderson; Secretary, D. M. Bryant; Committee, T. D. H. Merrie, A. B. Mitchell, H. Robb, R. M. Wilson; Junior Member, Miss M. M. Riley.

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

SCOTTISH BIRDS RECORDS COMMITTEE

Chairman: D. G. Andrew.

Committee: A. G. S. Bryson, Sir Arthur B. Duncan, Dr W. J. Eggeling, A. T. Macmillan, Prof. M. F. M. Meiklejohn, Dr I. D. Pennie, Kenneth Williamson, George Waterston, Prof. V. C. Wynne-Edwards.

MANAGEMENT COMMITTEE

M. H. Hamilton (Convenor), D. G. Andrew, R. G. Caldow, Dr W. J. Eggeling, A. T. Macmillan, George Waterston.

LIBRARY COMMITTEE

George Waterston (Convenor), Ritchie Seath (Hon. Librarian), A. T. Macmillan, Dr I. D. Pennie.

RESEARCH COMMITTEE

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

CLUB REPRESENTATION

British Section, International Council for Bird Preservation: Sir Landsborough Thomson, George Waterston.

International Wildfowl Research Bureau, Duck Working Group: Miss V. M. Thom.

HONORARY MEMBERS

Duncan Anderson, Henry Boase, P. W. G. Gunn, Sir Landsborough Thomson.

WEEKEND EXCURSION TO DUMFRIES

The weekend excursion to the Solway goose grounds has been arranged with the County Hotel, Dumfries, from Friday 9th February to Sunday 11th February 1973.

Accommodation: inclusive terms £7.60 (including gratuities) as follows: bed on Friday 9th; breakfast, packed lunch, dinner and bed on Saturday 10th; breakfast and packed lunch on Sunday 11th. Dinner on Friday night is £1.25 extra per person. A limited number of rooms with private bathrooms are available for the additional charge of £1.00 per night.

Members may bring guests and should book direct with the Manager, County Hotel, Dumfries (tel. 5401), notifying him that they are attending the Club excursion. Members should also advise the Hotel in advance if they require Dinner on Friday night.

Those not staying at the County Hotel are invited to attend an informal meeting at the Hotel on Friday evening at 8.30 p.m., when details of the weekend excursions will be announced. An informal programme of slides will be shown on Saturday evening. Members or Guests who may have slides of interest are asked to bring them to the Hotel, and to contact the Club Secretary on Friday evening to discuss their inclusion in the programme. A selection of books from the Bird Bookshop will be taken to the Hotel for sale during both evenings. It is advisable to bring warm clothing, gumboots if possible, and thermos flasks, for the excursions.

RAFFLE IN AID OF THE 'SCOTTISH BIRDS' APPEAL FUND

In 1970 a Special Appeal was launched inviting members to make donations specifically for *Scottish Birds* in order that the high standard and quality of production of the journal should be maintained in spite of ever increasing costs; Council also decided that a reasonable honorarium should be paid to the Editor for his exacting work. (See *Scot Birds* 6: 180 and 234).

The aim is to produce an income of £500 each year, and at present several members have generously covenanted donations which provide nearly £150 of this total. In order to increase this sum, Council decided to hold a Raffle, with the draw being made at the Annual Conference in 1972. With limited time after the decision was made, tickets were sold at Branch Meetings in the week prior to the Conference and at the Conference itself, and the sum of £228.90 was raised.

For this very welcome addition to the Fund the Club would like to thank those Members and Firms who donated prizes and all who sold and bought tickets. Following on this success, plans are being made to hold another raffle in 1973 with larger prizes, and to sell tickets over a longer period. Full details will be announced in a later issue of the journal, but if any member has a prize he would like to donate he is asked to contact the Club Secretary as soon as possible.

GLASGOW BRANCH SOCIAL EVENING

The Glasgow Branch will hold a Social Evening on Friday 9th March 1973 at Hillhead Refectory, Glasgow University. Applications for Buffet Supper tickets (numbers limited) at £1.20 each (including 1 glass of sherry and 2 glasses of wine) should be made to the Branch Secretary.

AYR BRANCH WINTER EXCURSIONS - 1973

Saturday 3rd February CRAUFURDLAND (by kind permission of Mr J. P. Houison-Crauford). Meet Wellington Square, Ayr 1 p.m

Saturday 3rd March LOCH KEN AND THREAVE. Meet Wellington Square, Ayr 9 a.m. Bring picnic lunch.

Saturday 7th April DIPPLE SHORE. Meet Wellington Square, Ayr 1 p.m. or Maidens Harbour car park 1.30 p.m.

For further details, including Leaders of the excursions, contact the Ayr Branch Secretary, R. M. Ramage, 57b St Quivox Road, Prestwick, Ayrshire KA9 1JF (tel. Prestwick 79192). Send s.a.e. if writing.

DUNDEE BRANCH WINTER EXCURSIONS - 1973

Sunday 11th February GLEN LETHNOT. Leader: D. Henderson.

Sunday 11th March ROHALLION. Leader: T. M. Clegg.

Sunday 22nd April FORFAR LOCH AND RESCOBIE. Leader: I. Simpson.

Excursions by private car leaving City Square, Dundee at 10 a.m. For further details contact the Dundee Branch Secretary, Mrs A. Noltie, 14 Menteith Street, Broughty Ferry, Dundee DD5 3EN (tel. 0382 75074). Send s.a.e. if writing.

BRANCH SECRETARIES

Please note the following new addresses:

GLASGOW Mrs I. T. Draper, Otter's Holt, 37 Drumbrock Road, Strathblane, Glasgow G63 9DG.

THURSO S. Laybourne, Old Schoolhouse, Harpsdale, Halkirk, Caithness KW12 6UN.

ENDOWMENT FUND

In *Scot. Birds* 6: 406 the attention of members was drawn to the Endowment Fund which is administered by the Council of the Club. It has been decided that, in future, applications for a grant from the Fund should be submitted to the Club Secretary by 31st December each year, so that they can be considered at the Council Meeting normally held in March. Applications received after 31st December will, however, not be debarred from consideration.

Members are reminded that the Endowment Fund was established for the advancement of ornithology in Scotland. Any legacy or donation to this Fund will be gratefully received and should be sent to the Club Secretary.

SCOTTISH BIRDS — VOLUME 1

Volume I Numbers 2, 3 and 5 are being reprinted and will be available fairly early in 1973 at 50p each (post free). All who require a copy of any of these numbers, including those who have ordered but have not yet paid, are asked to send their remittance to the Club Secretary.

SITUATIONS VACANT

FAIR ISLE BIRD OBSERVATORY requires a COOK from April to October inclusive. Must have experience of cooking for 30.

Also required: ASSISTANT COOK/HOUSEKEEPER from May to September inclusive.

Excellent conditions, ample time off; good opportunity for young energetic persons interested in island life and birdwatching.

For more information write to Mrs Broad, Riverside Cottage, Mossdale, Castle Douglas, Kirkcudbrightshire.

1973 ORNITHOLIDAYS (Regd)

(WESSEX TRAVEL CENTRE)
Holidays organised
by Birdwatchers
for Birdwatchers

MOROCCO Exciting safari-type Ornitholiday to southern Morocco and the edge of the Sahara. Tour starts Marrakech and covers the most interesting parts of the Haut and Moyen Atlas, and the desert beyond. Good hotel accommodation, coach travel reduced to minimum consistent with good birdwatching. Departure on 24th March. Maximum 20.

FINLAND The last wilderness. Ornithological safari through the lakeland and forests of Finland. Good accommodation. Coach throughout. Departure 9th June. Maximum 20.

ARCTIC NORWAY Another Ornitholidays safari, this time to the top of Europe in search of arctic birds. Good hotel and guesthouse accommodation, road and air transport throughout. Departure 23rd June. Maximum 20.

HOLLAND Autumn visit to Texel and the Polders. Pleasant hotel accommodation, air and road transport throughout. Departure 22nd September. Maximum 16.

YUGOSLAVIA Another exciting safari-tye tour which will explore the marshes and hills of northern Yugoslavia, then head south for Lake Scutari and Metkovic. Good hotel accommodation, coach throughout. Departures 14th April and 22nd September. Maximum each group 20.

MALAWI Detailed exploration of Lake Malawi, Lake Chilwa, Lengwe Game Reserve, Zomba, etc. First-class hotel and good game-lodge accommodation, minibus transport. Departure 12th July. Maximum 14.

ZAMBIA Exciting birdwatching at Kafue, Livingstone, Sumbu Reserve, etc. Good-class accommodation, air and minibus transport. Departure 9th October. Maximum 14.

ETHIOPIA Repeat of our 1971 and 1972 tours to the Awash National Park, the Rift Valley Lakes, Lake Tana, the Blue Nile Gorge and the Menagesha State Forest. A fascinating country with outstanding birdlife. Departure 15th November. Maximum 22.

Full details of costs and schedules for these and many other holidays on application : please send 3p stamp for 1973 programme

LAWRENCE G. HOLLOWAY
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44 ALDWICK ROAD
BOGNOR REGIS, SUSSEX, PO21 2PW
Tel. Bognor Regis 21230

BIRD & FLOWER TOURS 1973

The Special Projects department of Henry Allan Travel has pleasure in announcing the following programme for 1973. It has been prepared by a staff experienced in arranging such tours for the past ten years.

Birds

Centre	Leader	15 days from :
ALGARVE	Mr Don Parr	13 April (1 week)
MALTESE ISLANDS	Mr Glyn Davies	14 April
GREECE—Macedonia	Mr Rae Vernon	4 May
MAJORCA	Mr Eric Pilcher	5 May
BULGARIA	Mr Frank King	19 May
USSR—Caucasus	Mr Don Parr	19 May
TURKEY	Mr John Collins	26 May
N.W. SCOTLAND	Mr G. Stebbing-Allen	2 June
ICELAND	Local guide	3 & 12 June
ROMANIA—Danube Delta	Mr E. L. Roberts	21 August
ALGARVE	Mr Ron Kettle	6 September
MAJORCA	Mr Frank King	29 September

Flowers

CORSICA	Mr David Paton	7 April
TURKEY	Mr J. E. Lousley	15 April
FRANCE—Pyrenees	Mr J. E. Lousley	15 June
ITALY—Val d'Aosta	Dr C. T. Prime	23 July

Our special brochure giving full details of these tours is now available. Write to Cecil Kline or Joy Randerson BS/12 HENRY ALLAN TRAVEL, 310 High Holborn, London, WC1 7LU or Tel. 01-242 2039.

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Retaining the romance of a Castle and the homely charm of a country house combined with the amenities of a modern hotel, our guests receive a warm welcome and a first-class service.

Conveniently situated for the Dornoch Firth, Tain Bay, Edderton Sands, Skibo Estuary and Loch Fleet as well as many interesting moorland, mountain and forestry areas, Dornoch has much to offer the observer of wild life.

To Ornithological and other parties, we offer the following reductions on accommodation prices for 1973 season : 12th April to Whitsun—20%, Whitsun to end of June—10%, Mid September to 5th October—10%. Organisers of parties of 12 or more are free.

Illustrated brochure of Hotel and tariff (also special golfing terms) gladly sent on request to

Resident Proprietors, IRENE and STUART THOMSON

Telephone : Dornoch 216

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We stock all makes, but one binocular which we can particularly recommend is the Frank/Nipole 8 x 30 which, complete with case costs only £12.50. Not only do we ourselves recommend this binocular, it also carries a strong recommendation from The Royal Society for the Protection of Birds, and each glass carries the seal of approval of the Game Conservacany. Our Free 42 page catalogue illustrates hundreds of Binoculars & Telescopes including the larger 10 x 50 model at £16.50 and the 9 x 63 at £30.

FREE COMPARISON TEST

Test any Frank/Nipole binocular free for 7 days. Should you decide, however, on a binocular other than the Frank/Nipole make, **we can promise a substantial price reduction at least equalling any other offer which you may bring to our notice.** This offer also applies to Telescopes.