SCOTTISH BIRDS

THE JOURNAL OF THE
SCOTTISH ORNITHOLOGISTS' CLUB

Volume 6 No 1 SPRING 1970 Price 10s

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Vol. 6 No. 1 **Spring 1970**

Edited by A. T. Macmillan, assisted by D. G. Andrew

Editorial

Oil. It almost happened.

Valerie Thom's paper on duck wintering in Scotland was published in *Scottish Birds* just before Christmas. It warned of the extreme vulnerability of Scaup at Leith to any oil pollution there. Within days, with some 37,000 Scaup, 4000 Goldeneye, 3600 Eiders, very high numbers indeed, between Granton and Joppa, a dangerous oil slick appeared in the area, and outlying ducks began to be fouled by it.

By luck—and no thanks to any preplanning or regular organisation—the danger passed. A few hundred, maybe a thousand, ducks died; not the whole Scaup population of Iceland; not 40,000 to 50,000 ducks gathered for slaughter in one closely-packed ghetto.

No one seems to know where the pollution (light fuel oil) came from. Who was to blame? No one knows. Nothing can be proved. Who was responsible for doing something? No one knew; they held a conference to find out.

In 1968, local authorities were advised to appoint oil pollution officers. Many have done so, but their responsibilities seem to be mainly concerned with oil close inshore or on the beaches. Oil slicks at sea are evidently the concern of the Board of Trade; and it can be a little difficult to persuade that body to go and look for them when it is only oiled birds that are washed up on the shore. The basic data must be supplied by others if anything effective is to be done quickly.

As 1970 opened, birdwatchers breathed again. Yet ere a week was out more oiled birds were being reported along the east coast. By the middle of January nearly 1000 badly oiled birds had been destroyed, and many more seen—mainly auks, but also substantial numbers of Eiders, Common Scoters, divers and other species, evidently victims of at least two further incidents. Heavy fuel oil was identified in East Lothian; and a quite different type in the Tentsmuir area, where Eiders were involved for the second time within two years. The mystery is that very little oil has come ashore, and no trace of an oil slick has been seen anywhere; but the birds have suffered in large numbers.

Three incidents off one short stretch of coast in one month, and near disaster at one absolutely vital wildfowl haunt—will we ever learn? And what is being done about it?

One most important task is to get every incident fully documented, and quickly; to record numbers of lightly oiled, heavily oiled, and dead birds, day by day, whenever and wherever oiling occurs. The RSPB and the Seabird Group plan to enlist local helpers to be responsible for stretches of coast all round the country. At the first sign of oiling these people would arrange for volunteers from the public and from all the various natural history societies to go out and look for the birds. If you are able to act as a local organiser or to help in any way please get in touch with the RSPB Scottish Office, 17 Regent Terrace, Edinburgh, EH7 5BN, where you may also get copies of a most valuable booklet on *Oiled birds—what to do*, prepared by the various organisations concerned with birds and oil pollution.

(**Postscript.** Even as these paragraphs were in press there came news of further trouble. Large numbers of fouled birds continued to be washed up, mainly in the Tay area, while the Board of Trade in Scotland announced that it would be far too costly to mount an air search for the oil out at sea. With some 4000 already involved in this incident, the number of oiled birds dead or destroyed on the east coast of Scotland exceeded 7000 by the end of January. In a letter to the *Scotsman*, representatives of the RSPB, the SSPCA and kindred bodies, and the SWT, described their fruitless attempt to interest the Board of Trade in arranging an air search for the oil, at a time when it might have been dealt with well out at sea. They had pointed out that there would in fact be no extra cost to the taxpayer in fitting a search for the oil into the routine training flights carried out in any event by the RAF. But evidently this sort of interdepartmental cooperation did not commend itself to the Board of Trade, and nothing happened. Finally, in desperation, the voluntary bodies themselves made enquiries from the RAF and the Ministry of Defence, who were most helpful and glad to cooperate, locating the oil without difficulty next day, now broken up into a number of patches by recent gales.

It is to be hoped that this dismal saga will not be repeated, and that proper arrangements will be made to take note of oiled birds as an indication of oil pollution at sea. As we write (on 2nd February), the last has not been heard of this, nor of the oil, which has been drifting about and coming ashore in the Tay area and now between Aberdeen and Peterhead, especially in Cruden Bay).

Current literature. Recent material of Scottish interest includes :

The Edinburgh Natural History Society News-Letter. Centenary Year. 1969.

Loch Leven, 1968. I. K. Marshall & C. R. G. Campbell, 1969. *Wildfowl* 20 : 154-155.

The migration of the Goldeneye in north-west Europe. L. Nilsson, 1969. *Wildfowl* 20 : 112-118.

Geese at Loch Leven. I. Newton & C. R. G. Campbell, 1969. *Wildfowl* 20 : 155.

Weights and measurements of Greylag Geese in Scotland. G. V. T. Matthews & C. R. G. Campbell, 1969. *Wildfowl* 20: 86-93.

Greylag Geese at Loch Druidibeg. I. Newton, 1969. *Wildfowl* 20: 156.

Changes in the British-wintering population of the Pink-footed Goose from 1950 to 1957. H. Boyd & M. A. Ogilvie, 1969. *Wildfowl* 20: 33-46.

The status of the Canada Goose in Britain, 1967-69. M. A. Ogilvie, 1969. *Wildfowl* 20: 79-85.

Scarce migrants in Britain and Ireland during 1958-67. Part 2. Melodious Warbler, Icterine Warbler and Woodchat Shrike. J. T. R. Sharrock, 1969. *Brit. Birds* 62: 300-315.

BTO Ornithological Atlas 1968-72

It is not very difficult to encourage people to help with a project that has been well thought out, is within the scope of any birdwatcher who can identify species and knows or can learn how to recognise the more obvious facets of breeding behaviour, and which has the backing of the SOC Council. It is a pleasure, as well as a duty, to thank wholeheartedly all who are contributing in various ways.

It is equally important, and a great deal more difficult, to report back what has been achieved so far. In terms of species, one cannot at this stage do more than indicate the wide breeding records of some passerine species such as Redwing, Grasshopper Warbler, Blackcap, Garden Warbler, Wood Warbler and Pied Flycatcher; with Sedge Warbler and Whitethroat, whose numbers apparently suffered a sharp reduction in 1969, these will all be worth careful attention in 1970.

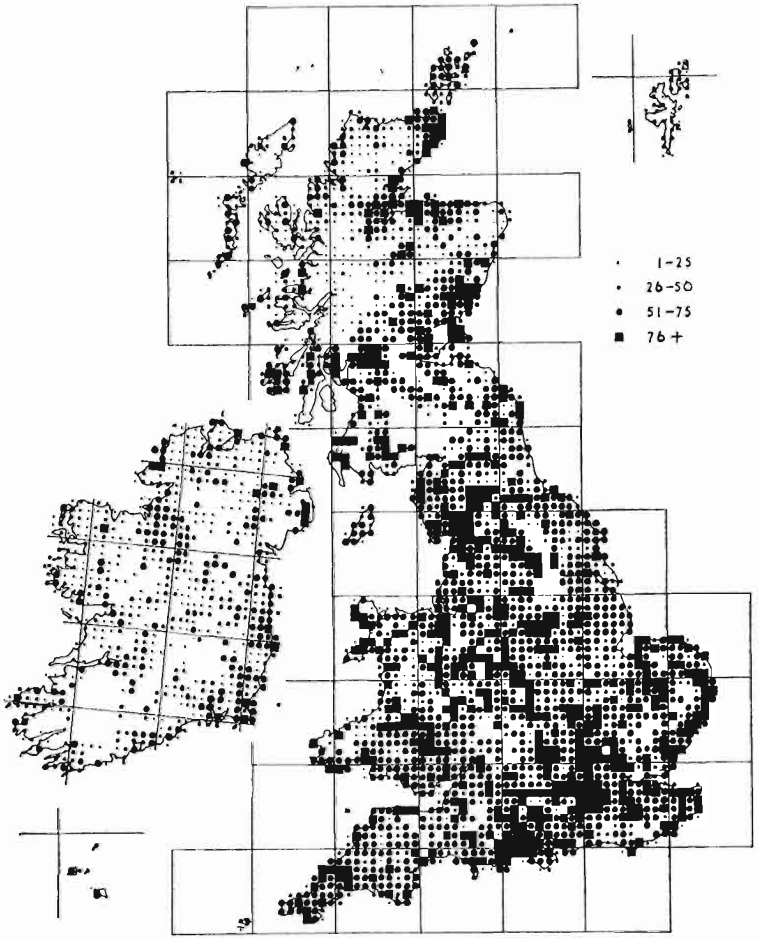
In area coverage, combined 1968-69 results by the end of 1969 showed records in a total of 761 10-km squares out of nearly 1100—214 squares with 1-25 species, 220 with 26-50 species, 226 with 51-75 species, and 101 with 76 or more species. This is a real achievement after only two years, particularly as it excludes a fair number of cards from two major areas not actually received by 31st December 1969. It is not possible to get more up-to-date information into this issue of *Scottish Birds*, though Dr Sharrock hopes to embody it in a 1970 number of *BTO News*.

With the wide variety of habitats in Scotland, often within the compass of each 10-km square, we expect a total of 80-100 species breeding in many squares, or 120 or more in a slightly larger area. The challenge for 1970 is therefore to improve the species total in local squares to class 3 or at least class 2 status, as well as to record as much as possible in areas with no resident birdwatchers. In the latter case, the only safe assumption is that nothing has been recorded so far, and this applies particularly to most of Lanarkshire, Arran, mainland Argyll, Jura, Mull and the smaller islands around, mainland Inverness-shire, all but East and NW Ross, and most of Sutherland. Help from visitors is also needed in Aberdeenshire, Banffshire, Lewis, Harris, Orkney and Shetland (particularly the two mainland counties). Since it is impossible to list which areas within these regions have been surveyed, it would be most helpful, to save duplication, for visitors to get in touch beforehand with the local organiser.

Apart from those which are difficult to find, many species such as

Gannets, Herons, predators and Swifts get their food far from the nest area; while gulls, in particular, may be present as non-breeders in almost any situation. Especial care is clearly needed in recording these, both for the sake of accuracy and to reduce the extra paperwork caused by having to query doubtful records.

In squares in the Highlands, full coverage will require much walking



Atlas coverage 1968-69. This map shows the number of species which have been found in each 10-km square. Even though the potential number of species in each square depends to a great extent on the variety of habitats within the square, the map gives a good indication of the degree of Atlas cover achieved in the first two years of this five-year project. If you can help with this ambitious venture to map the breeding birds of Britain and Ireland, please contact the Scottish Coordinator, C. G. Headlam, Foulis Mains, Evanton, Ross-shire, or one of the local organisers, who will supply full details.

over large areas with very few species well scattered. But each patch of different habitat will have its representative species and possibly some suprises. In the barer areas, each small group of scrub trees or bit of marsh may be like an oasis in the surrounding moorland and hill country. Even short stops by the roadside in the Highlands may not only produce very useful Atlas records, but also show up significant differences between one patch of birch or other scrub and the next, like the faunal differences between one desert oasis and another.

C. G. HEADLAM.

Foulis Mains, Evanton, Ross-shire.

Berwick, Roxburgh, Selkirk D. R. Grant has moved out of this area and the new organiser is Dr J. I. Meikle, Bridgeheugh, Lindean, Galashiels.

Goose studies at Loch Leven in 1967/68

I. NEWTON and C. R. G. CAMPBELL

Nature Conservancy, 12 Hope Terrace, Edinburgh, EH9 2AS, and Wildfowl Trust, Slimbridge, Gloucester

(Plates 2-3)

Introduction

Each winter several thousand Grey Lag *Anser anser* and Pink-footed Geese *Anser brachyrhynchus* (=*A. arvensis brachyrhynchus*) roost on Loch Leven (Kinross) and feed on the surrounding farmland. This paper describes the general behaviour and feeding habits of these birds in the winter of 1967/68. It forms part of a longterm study aimed to give a sounder ecological basis to the conservation of these birds in Britain. The numbers of both species in Scotland have increased greatly in the past twenty years, each now exceeding 60,000 individuals (Wildfowl Trust counts), and as these birds feed exclusively on farmland they are causing increasing concern among farmers, an aspect studied in detail by Kear (1962, 1963, 1963a, 1965 and in press). In planning our work we have benefitted from discussions with Dr J. Kear and from an earlier pilot study made in various parts of Scotland by H. Boyd, C. R. G. Campbell, Miss V. M. Thom and W. Brotherston.

An area of about 8.5 square miles of farmland around Loch Leven includes most of the feeding grounds of the geese, and contains over 300 fields, all visible from roads and tracks. We mapped this area in September to show the crops available in each field when the birds arrived, and thereafter once each month until April to show any changes that had taken place. We also covered the area at least four times each week by car, noting the location, size and species composition of all goose flocks encountered, the fields being numbered for

ease of recording. These circuits were made in the mornings when movements by the geese were minimal. It was usually possible to tell what the birds were eating from their behaviour and from their droppings, but in addition some were shot for analyses of their gut contents. Finally we counted the geese roosting on the loch at least once each week in dawn flight. A total of 172 circuits was made during the season, each lasting 3-4 hours, and 36 dawn counts.

Numbers and behaviour

Ringing has shown that the Pinkfeet come from Iceland and Greenland and the Greylag from Iceland; apparently these populations winter entirely within the British Isles, mostly in Scotland.

The majority of Pinkfeet normally arrive in Britain each year at the end of September and in early October, and the birds appear over almost their whole wintering range on the day of the first big influx. Those coming to Loch Leven in 1967 began to glide in while still at about 2000 feet and more than a mile from the water; at the same time, other flocks flew over at greater height, ignoring those below. The birds arrived by day, mostly in flocks of 10-100 individuals; and also by night.

The peak population of 7000 Pinkfeet was reached in only six days from 29th September, but 6000 of these arrived within three days from 2nd October. The birds assembled on a mud-bank, covered by a few inches of water, off the north side of the largest island (St Serf's). On first alighting they drank a good deal, but then spent many hours sleeping, standing on one leg in the shallow water. At times they also waded into deeper water, splashed and preened for long periods. Single juveniles flew around calling, apparently seeking their parents; and if they walked through the flock they were chivvied continually by other birds. For the most part, however, the family groups were maintained.

A boat on the loch, an aeroplane or a Short-eared Owl flying over was enough to put up the whole flock, which circled once or twice before settling again. Otherwise the birds were initially rather tame towards people; but this changed as soon as they had been shot at, a few days after arriving.

The birds fed very little on the first day, and then only desultorily on the rough grass of the island; probably most birds took no food at all at this stage. At dawn the next day they began to feed in the large fields near the edge of the loch (East Brackley farm being the traditional area), and in another day or two in more distant fields as well. Their first feeds at several miles from the loch were preceded by long circling flights over the surrounding terrain. Often the birds used a particular field as a base from which, as the days passed, they extended their range in certain directions. One

particularly large field at Kinglassie has apparently been used in this way for several years. Within two or three weeks after their arrival the Pinkfeet had established a routine, with flight lines to several distant feeding areas.

The majority of Greylag normally arrive in Britain each year around mid October. Their arrival at Loch Leven is unremarkable because their numbers increase only slowly to a peak in January, and most of the birds have presumably spent some time elsewhere in Scotland before reaching us. In 1967 the first few arrived at the same time as the first Pinkfeet, but these were probably birds which had been caught up in the Pinkfoot flocks. The numbers did not begin to increase until after mid October, when the birds formed discrete flocks, though sometimes feeding in the same fields as Pinkfeet.

In most circumstances Pinkfeet remained closer to one another and moved more rapidly while feeding than did Greylag, which often scattered widely over familiar ground. Pinkfeet also fed in much larger flocks (sometimes more than 2000 birds) than did Greylag, but the flocks of both species tended to become smaller as the season progressed. Also, at the start of the season large numbers of geese often remained in a single field throughout a day, and for several successive days, but in late winter they used several fields each day, often spending no more than an hour in each.

The dawn flight from the loch each day began soon after sunrise; on bright clear mornings the departure usually took less than an hour, but on dull or misty mornings it began later and took longer, and under these conditions most birds settled to feed near the loch. Either way, the majority of Pinkfeet left before the majority of Greylag. On most days, after feeding for an hour or two, parties of birds of both species began to return to the loch to drink, bathe and rest. They would move back to the fields later, producing a continual movement between the loch and different feeding flocks. On the whole, however, Greylag spent more time on the water than did Pinkfeet, which more often remained on or near their feeding grounds. The Pinkfeet also had regular rest places, on hillsides or other places giving a wide view. But both species returned to the loch around dusk, the majority of Greylag arriving up to an hour earlier than the majority of Pinkfeet, often at lower altitude. The two species roosted in separate areas, which varied according to the direction of the wind.

On moonlight nights the birds moved between the loch and the fields and sometimes apparently spent the whole night in the fields. This seemed more frequent among Pinkfeet than Greylag, and more frequent in both species in the latter half of the season than in the first half.

The results of the dawn counts are shown in fig. 1. At all

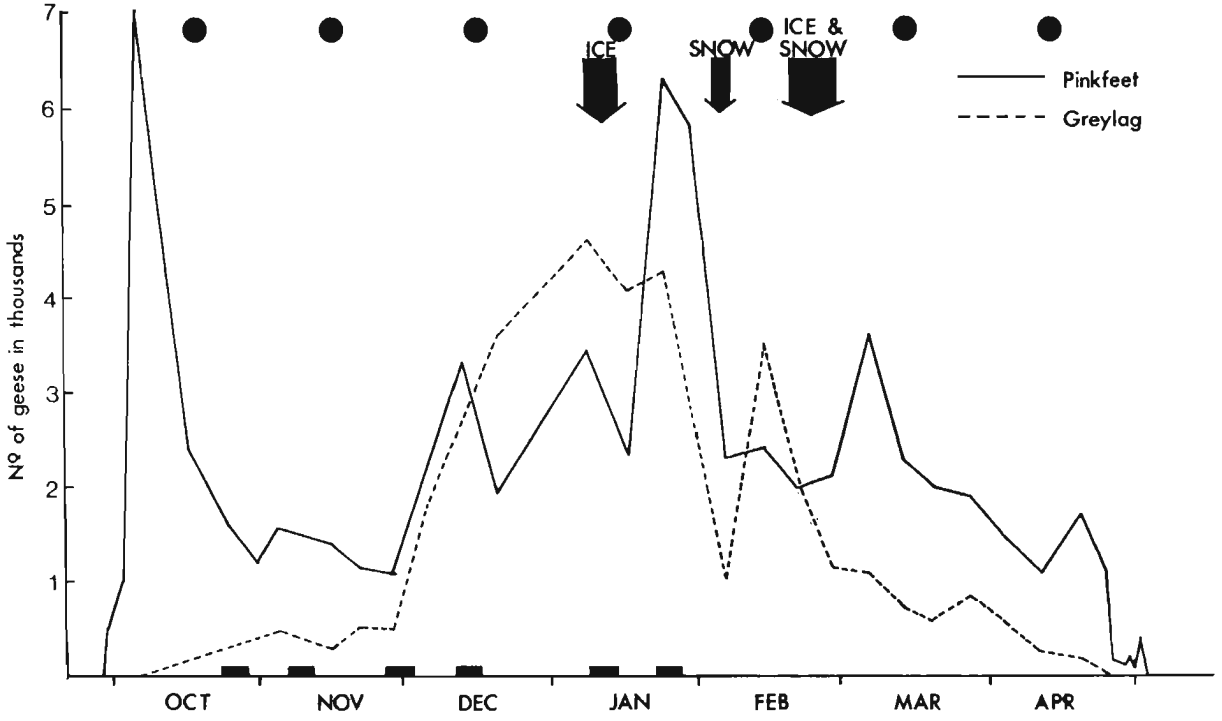


FIG. 1. Counts at dawn flight of geese on Loch Leven, 1967/68. The blocks on the horizontal axis show days when geese were shot; the filled circles show full moons.

times except around full moons (which are marked) they probably represent the total geese in the Loch Leven area. The numbers of Pinkfeet declined rapidly from the peak in early October, showing that some birds used Loch Leven as a staging post *en route* to other areas. Their numbers remained at 1000-1500 in November, then increased to over 6000 in January, and declined thereafter with large fluctuations; the last birds were seen on 1st May. The numbers of Greylag reached over 4000 in January, and declined thereafter, the last birds being seen on 24th April. The most geese (both species) present at any one time was 10,500 in late January. A roughly similar pattern had been followed in 1966/67, with the Pinkfeet reaching peak numbers in October and the Greylag in January; but in 1966 the Pinkfeet reached 12,000 in autumn, about a fifth of the total wintering in Britain that year.

As may be seen from fig. 1, when the whole surface of the loch froze in early January fewer birds were counted there, but since this also coincided with a full moon the birds might have remained in the fields. Those using the loch roosted in their usual areas; on the first morning, the separate piles of droppings on the ice showed where each bird had stood, but after several days their droppings had accumulated to form a compressed layer more than an inch thick. Two periods of snow in February were accompanied by more pronounced declines, through birds of both species leaving the area completely. In only one of these periods was the loch frozen, and then only for part of the time. After the thaw on both occasions the numbers soon increased again. Thus many birds left the area temporarily while their feeding grounds were covered, but it is not certain whether they left when the water was frozen and the feeding grounds remained open. These findings may not, of course, be generally applicable, but at least they help to explain some of the fluctuations observed at Loch Leven.

In six 'shooting weeks', between October and January, the geese were much disturbed, but fewer than 200 were killed (as they flew on and off the loch), a negligible proportion of the total present. After some shoots the numbers declined and after others they rose (fig. 1), so probably shooting had no important effect on the numbers of geese using the loch in this winter, though the same conclusion might not have held for smaller waters or where disturbance was greater.

The departure of the geese on spring migration was less obvious than their arrival in autumn. In both species the departure was spread over at least a month, with numbers on the loch fluctuating greatly from night to night, suggesting that some birds used it as a staging post, as in autumn. Only one flock of 2000 Pinkfeet was actually seen to leave, and that was at dawn.

In addition to the main species, the following geese were seen:

Greenland White-fronted Goose *A. albifrons flavirostris*. Adult 25th October (on barley stubble with Pinkfeet), and on 20th-22nd January (*Scot. Birds* 5: 315).

Snow Goose *A. caerulescens*. Four adults 22nd and 23rd January (on pasture and old potato field with Pinkfeet) and on 14th and 27th February (on pasture with Greylag); two 5th and 6th March (on old potato field with Pinkfeet). Presumed escapes (*Scot. Birds* 5: 316).

Ross's Goose *A. rossii*. Adult 4th, 5th and 10th October (on barley and oat stubble and St Serf's Island with Pinkfeet). Presumed escape.

Pale-breasted Brent Goose *Branta bernicla hrota*. One 3rd November (on barley stubble with Greylag), and one 14th-18th January (*Scot. Birds* 5: 316).

Barnacle Goose *B. leucopsis*. Two 4th March (on barley stubble with Greylag); four 5th and 12th March (on grass with Pinkfeet); three 11th April (on grass with Pinkfeet).

Finally it is worth noting that the arrival of Pinkfeet at Loch Leven in 1967 was similar to that described by Millais (1901) in 1883, except that then the peak population was only 2000-3000. "These great flocks always remain for a few days on Loch Leven, and then away they go, distributing themselves in favourite localities throughout the south-east of Scotland—all except five or six hundred, which remain on the lake until the following spring. They are nearly all pink-footed geese, with a few graylags and bean." The numbers of both Pinkfeet and Greylag are now much greater, and the Bean Geese have gone altogether. In Millais's time St Serf's was apparently the favoured feeding area, but the amount of farmland round the loch was less than now and the disturbance probably greater.

Crops and agricultural procedure in the study area

About half the study area consisted of grassland of various types, about a third of cereal crops and the rest of potatoes and turnips. Over half the cereal crops were barley, the rest mostly oats, with a little winter wheat. Some fields had remained as pasture for many years, but on most fields crop rotation was practised; it was usual to undersow some of the barley fields with grass, and to sow the next year's corn either in autumn or in spring, so that some fields yielded two 'crops' of use to geese in the same season. The birds ate almost any green or root crop available, and we added nothing important to the foods listed by Kear (1963a).

Grass. Generally, the older the sward, the poorer the grazing; old rough pastures consist mostly of grass species which are poor in nutrients and difficult to digest, whereas areas re-

seeded in the previous year consist almost entirely of grass species that are rich in nutrients and easy to digest. Like other animals, geese prefer the recent growth.

All types of grassland, from rough old pastures to fresh growing swards, were available in the study area and used by both species throughout their stay. Grass of all types grew to some extent during the first few weeks after the geese arrived, but appeared to stop with the first severe frosts in November. Then the birds gradually ate it down until, on their favourite fields, very little greenery remained by late winter. Only in the few weeks before the birds left in April was there much fresh growth.

In March and April some geese came into direct competition with domestic stock by selectively grazing those fields of young grass which had been fertilised to provide the 'early bite' for lambing ewes and the cattle which were turned out at this time. This problem did not arise where such fields were near to steadings, where geese were reluctant to feed.

Growing cereals. Some wheat and barley were sown in autumn, but most in spring, and were thus available to geese chiefly for two to three months. Around Loch Leven, geese fed from growing cereals only in the spring.

Potatoes. Geese visited potato fields for tubers left on the surface after the crop had been lifted in October or November, and later for any other tubers that had been exposed by rain or frost, or turned up with subsequent cultivation, Also, as any flood pools dried out, the birds probed for potatoes in the soft ground, apparently at random. By late March, however, all had been eaten. The geese scraped off slivers up to an inch in length using the nail on the bill and, as shown by analyses of the gut contents, took in a good deal of earth at the same time. Outside our area some potatoes remained unharvested, and Greylags fed from these after the tops had rotted and the tubers had been exposed by rain. A late harvest results in many more tubers than usual rotting in the ground and hence increases the number later available to geese.

Turnips. Some turnips were lifted in the autumn, but others were left in the fields for outwintered sheep, and were thus available for six of the seven months that the geese remained. Turnips formed a major part of the Greylags' diet, but chiefly when other foods were covered by snow. The birds would then walk among sheep to feed, and would also take turnips put out for sheep in other fields. The extent of the loss to the farmer seemed to depend mainly on how long the snow lasted. Only once were Pinkfeet seen to eat turnips; and they took only the small pieces of skin discarded by Greylags and sheep.

Stubble. Geese visited cereal fields after the harvest to eat spilled grains and discarded seed heads off the ground. The

burning of unwanted straw in the fields was helpful to the geese, for the fire moved too quickly to destroy the grains themselves but exposed them and made them more visible against the charred ground. The geese did not fly into standing corn, but sometimes removed seed heads from plants flattened by wind and rain*. This was not observed in the study area, but almost all the cereal fields had been cut before the geese arrived. Spilled grain remained available on the ground only until December or January, by which time the stubbles had either been ploughed or the grain had been eaten or had sprouted. After this time, though, geese visited stubble fields for grass.

In 1967 more grain was shed naturally from barley than from oats or wheat, and the spillage in any one field seemed to depend chiefly on the amount the crop was flattened and on the efficiency of the harvesting machinery, but also on the wind around harvest time and the interval between ripening and harvest.

Freshly-sown fields. Both species visited freshly-sown fields to pick up grain spilled on the soil surface. Often they fed in such fields for only a few hours on the day following sowing. They did not probe for grain, which was anyway drilled too deep for them. We had no indication that plant roots were eaten as well, and if these were regular in the diet the birds should also have fed in freshly ploughed fields, which they did not (unless these fields had held potatoes).

Bill structure and feeding behaviour

The bills of both species have serrated edges for cutting the leaves and shoots of plants, and a nail on the end of the upper mandible for gouging out pieces of roots and tubers. While grazing, geese walk slowly forward and shear off grass with the side of the bill, eating leaves of clover and other plants at the same time. Although they selected certain swards on which to feed, once on a sward their habit of plucking several leaves at a time limited the extent to which they could feed selectively, and analyses of gut contents showed that birds normally ate some dead brown stems along with fresh green ones. Presumably it is more efficient to graze in this way and take in some unwanted material than to eat only the fresh growth, which would entail picking leaves individually. But this is not to imply that they are completely unselective.

Both species eat the seed heads of cereals and grasses, but neither can efficiently separate grain from husk and both nor-

*W. Brotherston told us that 1000 Pinkfeet near Gladhouse Reservoir flew into standing corn a few days after their arrival in 1967, beginning to feed in the middle of the field and eventually flattening 2-3 acres. So far as is known, the crop had not been laid beforehand. In some previous years geese had occasionally entered fields left unharvested, but began by walking in from the edges.

mally bite off and swallow parts of whole seed heads, except those of oats, where the grains can be picked individually. Fallen grains are also picked singly off the ground. The birds also probe into soft mud and pull out roots, as mentioned, and break into grass tussocks to get the stolons. This is especially true of the Greylag.

The bill of the Greylag is longer and more powerful and has a harder nail than that of the Pinkfoot, and on agricultural land this is reflected in a greater proportion of roots and tubers in the Greylag's diet. Also, as shown from shot birds, Pinkfeet prefer soft potatoes, whereas Greylag will eat hard ones as well, and only Greylag can deal efficiently with such hard material as turnips.

Food around Loch Leven

Seasonal changes in the diet of the geese kept step with seasonal changes in the foods available; grass was eaten by

Table 1. Feeding places of geese in relation to those available
(data collected during periods of snow are excluded)

		Grey Lag Goose		Pink-footed Goose	
	Fields available	Feeding records	Index of preference	Feeding records	Index of preference
January 1968					
Old grass	43	21	0.5	54	1.3
New grass (of previous year)	12	1.5	0.1	8	0.7
Barley stubble	14	29	2.1	34	2.4
Oat stubble	10	1.5	0.2	0	0
Wheat stubble	1.5	0	0	0	0
Potatoes	11	38	3.5	3	0.3
Turnips	7	0	0	0	0
Growing corn	1.5	9	6.0	1	0.7
February 1968					
Old grass	45	32	0.7	47.5	1.1
New grass (of previous year)	15	13	0.9	10	0.7
Barley stubble	11	26	2.4	27	2.5
Oat stubble	7	2	0.3	14	2.0
Wheat stubble	1	0	0	0	0
Potatoes	11	16	1.5	1	0.1
Turnips	8	11	1.4	0.5	0.1
Growing corn	2	0	0	0	0

Note. In January 211 fields offered feeding to geese and in February 181, ploughing accounting for the drop. Taking each goose feeding in a field as a separate record, there were 5570 feeding records for Grey Lag and 4920 for Pinkfeet in January, and 14,050 and 11,660 respectively in February. Fields available with each type of feeding are expressed as a percentage of the total number of fields offering feeding each month; feeding records from each type of field are expressed as a percentage of the total feeding records for the same month. Dividing the first figure into the second gives an index of preference showing whether such fields are used more (index over 1) or less (index under 1) than in proportion to their numbers.

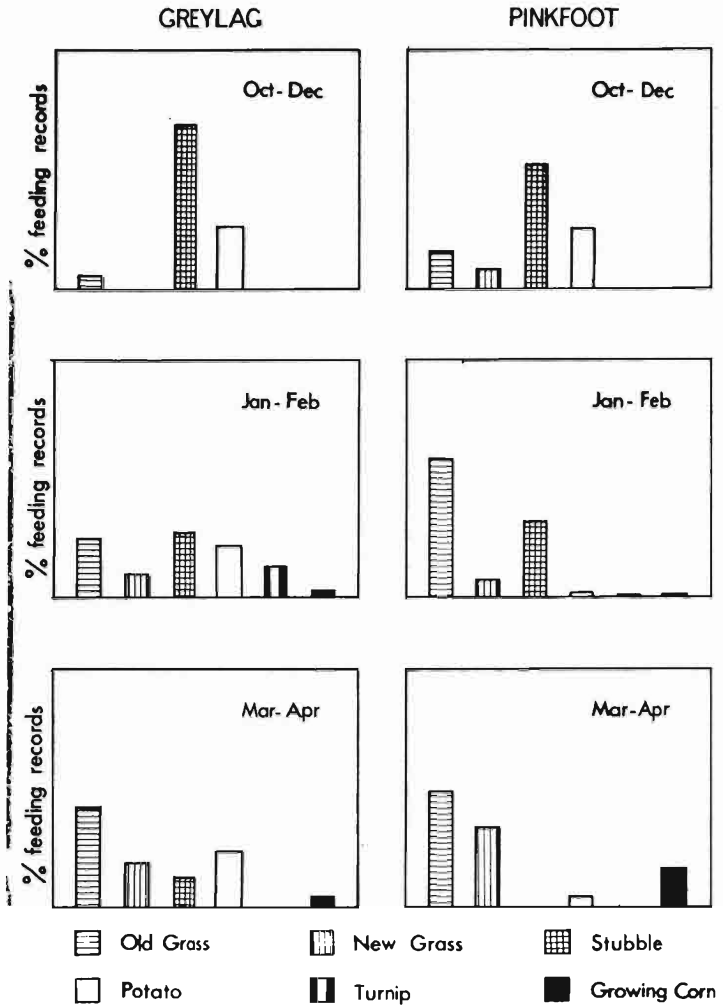


FIG. 2. Feeding places of Loch Leven geese at different times of the winter; the birds fed also from freshly sown fields, but too infrequently to show here. Taking each goose feeding in a field as a separate feeding record, the total numbers of feeding records in the successive periods were, for the Greylag 9040, 21,100 and 10,180, and for the Pinkfoot 37,370, 20,300 and 1110.

both species throughout their stay, but more towards spring, grain was eaten mostly in the autumn, potatoes mostly in autumn, winter and early spring, and growing corn mostly in late spring (fig. 2). However, potatoes and turnips together provided nearly a third of our records for Greylag, but less

than a ninth for Pinkfeet, which ate more grass. When the ground was covered by snow, Pinkfeet fed mainly on rough grassland, from protruding tussocks, and Greylag largely on turnips. Thus the diets of the two species around Loch Leven differed mainly in the proportions of the various foods eaten, rather than in the types of food. Turnips were the only food which provided a large part of the diet of one species and hardly any of the other.

To what extent do geese select their feeding places, rather than exploit a random sample of what is available in their favoured areas ? This has been examined in table 1 by comparing (a) the percentage composition of the fields available in particular months with (b) the percentage composition of the feeding records obtained in the same months. The index (b)/(a) reflects the degree of preference for particular types of field; an index of 1 indicates that the geese are using such fields in relation to their availability in the study area, more than 1 that they are preferring these fields to others, less than 1 that they are spending less time on them than would be expected from their availability in the area, and 0 that they are avoiding them altogether. Data are given only for those months for which we have most records; periods with snow cover are excluded.

In January Greylags showed a preference for fields of growing corn, old potatoes and barley stubble, but also fed from permanent and new pastures and oat stubble (though less than would be expected from the proportion of these fields in the area), and avoided altogether wheat stubble (of which there was little anyway) and turnips. In the same month, Pinkfeet preferred barley stubble and permanent pasture, fed off new pastures, growing corn and potatoes less than would be expected on their availability, and avoided altogether oat and wheat stubble and turnips. Roughly similar results were obtained in February, except that Greylag favoured turnips and avoided growing corn, and Pinkfeet favoured oat stubble, fed a little on turnips and avoided growing corn. The two species thus differed in some of their preferences and at least with the more important foods were roughly consistent in the two months.

Behaviour elsewhere in Scotland

The two species differ more in their ecology than the above analysis would suggest. Loch Leven is one of about seven places in Britain where large numbers of both species regularly feed and roost together. Elsewhere, as we shall substantiate in a later paper, differences in roosting and flighting behaviour reduce the extent to which the two species are brought onto the same feeding grounds. In general Pinkfeet prefer large expanses of water or estuaries for roosting, and large open

areas for feeding; they regularly fly more than five miles from their roosts to feed (see also Brotherston 1964). Greylag, on the other hand, roost on small as well as on large waters, and feed in smaller fields and nearer trees than Pinkfeet; they rarely feed more than two miles from their roosts. However, we cannot tell whether these differences are inherent in the two species or whether they result incidentally from the greater wariness of the Pinkfoot. This alone might account for this species' particular choice of roosting and feeding places, and its greater reluctance to change from traditional sites; in which case it might be expected to behave more like the Greylag if shooting were less. Either way, the present result of these ecological differences is that, despite the similar diets of the two species, less than one quarter of the total goose country in Perthshire is occupied by both species together, the rest by only one (see Thom & Murray 1966).

Discussion

When the geese are eating waste grain and potatoes, which form a large part of their diet, they are causing no loss to the farmer. In fact by removing potato tubers the geese check the spread of disease from one crop to the next. The effect of their feeding on grass in winter is difficult to assess, but presumably this is more detrimental in the south of Scotland, where domestic stock are often outwintered, than in the north, where stock are often taken off the fields in winter (or are merely 'housed' there and fed extra food). In the Loch Leven area few farmers complained of geese at this season. The grazing of growing corn does not apparently reduce the yield of either straw or grain, even when the plants are grazed to the ground (Kear 1965 and in press). It is not yet possible to say how much this grazing delays the harvest, but the date of ripening depends on so many other factors that in most years the effect of the geese is probably negligible. Whether geese also cause damage by puddling in wet weather, so that the soil surface of cereal fields hardens, reducing aeration, is also uncertain, but Kear has shown that a poor crop does not necessarily follow from this activity. None of the fields in our area was badly puddled. And again, few farmers complained of damage to growing corn.

The chief conflicts arose when the Greylag ate turnips in midwinter, and when both species ate the 'early bite' in spring. Thus about 6% of the total feeding of both species brought them into serious conflict with agriculture (this being the proportion of time spent on these crops over the winter as a whole), remarkably little considering that they feed entirely on farmland. On the other hand, their feeding is concentrated, and only a few days are needed for a flock to eat down a field

of turnips or of fresh grass, involving substantial loss to the individual farmer.

The results given here refer to a single winter at Loch Leven, however, and the diet varies in different localities and in different years, according chiefly to the amount of grain spilled and the completeness of the potato harvest, more grass being eaten in years when these foods are scarce. It is by studying these annual and regional differences that we hope to define more precisely the conditions under which severe damage occurs, and perhaps suggest ways in which it might be reduced. One aim is to find out how a large goose population can be maintained with the minimal conflict with agriculture. Already it has become apparent that farmers complain about Pinkfeet less than about Greylag, and that the two species present different conservation problems. The tendency of Greylag to feed near their roosts means that damage is often heavily localised, so that the brunt is borne by individual landowners, on whose goodwill the protection of the birds depends. The Pinkfoot is different; its natural wariness makes it more difficult to shoot, but more prone to disturbance. On the whole, Pinkfeet roost in less accessible (and hence more secure) sites than Greylags, and range more widely to feed, so that any damage they may do is spread over a wider area, and shared among several landowners. Any reserve established for Greylag should ideally include an area of feeding around the roost, but for Pinkfeet this is less important. If either species is in need of protection, this need at present is greater for the Greylag, not because its population is smaller, but because its feeding and roosting habits make it more vulnerable.

Acknowledgments

We are grateful to Dr D. Jenkins (Nature Conservancy) and Dr G. V. T. Matthews (Wildfowl Trust) for encouragement and discussion; to these two, H. Boyd, W. Brotherston, Dr J. Kear, Dr M. Owen, and Miss V. M. Thom for their comments on the manuscript; to D. McK. Scott for drawing the diagrams; to J. B. A. Rochard (Department of Agriculture) for helpful discussion and notes; and not least to J. H. Swan and A. Allison for help with the counts.

Summary

The general behaviour and feeding habits of Grey Lag and Pink-footed Geese on farmland around Loch Leven (Kinross) in the winter of 1967/68 are described.

The majority of Pinkfeet arrived by day and night within 72 hours from 2nd October, and on the day of their arrival rested mostly and fed little or not at all. They reached a peak of 7000 on 5th October. Greylag arrived about a fortnight later, and increased to more than 4000 in January. The greatest number of geese present at any one time was 10,500 in late January. Both species had gone by early May.

The two species ate almost every type of crop available in the study area, though neither selected food in proportion to its availability. Grass was eaten by both throughout their stay; spilled grain mainly in autumn; potatoes mainly in autumn, winter and early spring; and growing corn mainly in late spring. The species differed in the proportions of these various foods they ate. The Greylag has a larger bill and ate more root crops, turnips forming its main food in times of snow. The chief conflicts with agriculture arose when Greylag ate turnips in winter, and when both species ate young grass in spring.

Loch Leven is one of about seven places in Britain where both species occur together in large numbers. Elsewhere, differences in roosting and flighting behaviour reduce the extent to which the two species share common feeding grounds. Pinkfeet prefer large waters or estuaries for roosting, and large open areas for feeding; they regularly fly more than five miles from their roosts to feed. Greylag roost on small as well as on large waters, and feed in smaller fields and nearer trees than Pinkfeet; they rarely feed more than two miles from their roosts. These ecological differences might, however, be explained by the greater wariness of the Pinkfoot and thus be imposed by man's hunting.

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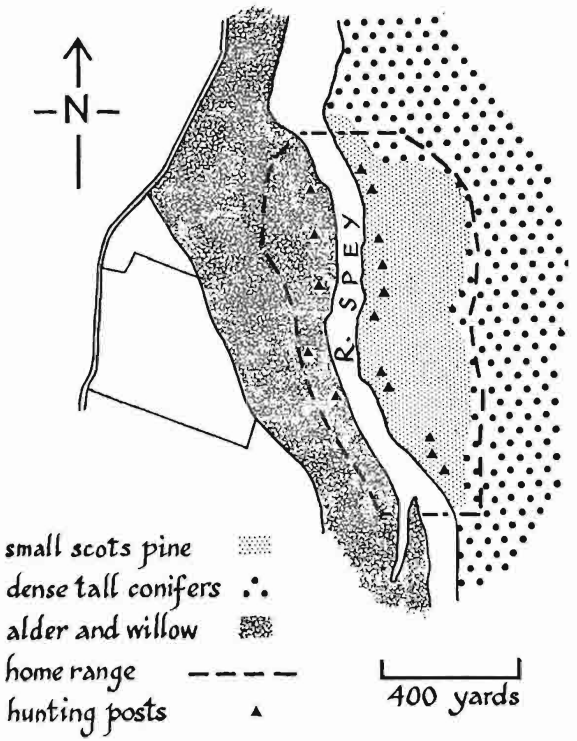
Winter home range and feeding habits of a Great Grey Shrike in Morayshire

RAYMOND HEWSON

(Plates 1, 4)

Mester (1965) has described winter territories of the Great Grey Shrike *Lanius excubitor* in Germany. Each one occupied areas of 100 to 150 acres of pastures and marshy ground on both sides of the River Ruhr. Territorial limits were indicated by regularly used perches, but the territories were not immediately adjacent to one another. A similar area was occupied by a male Great Grey Shrike near Fochabers, Morayshire, from December 1967 to April 1968. It was regularly seen by several observers. Fourteen pellets were collected from beneath the shrike's hunting perches and these have been analysed.



Home range

On the east bank of the River Spey the bird's home range consisted of fairly recently planted small conifers, and on the west bank dense alder and willow, with a shrub layer of gorse and broom and thickets of birch and willow. On the east side the low conifers were bounded by taller dense plantations not used for hunting by the shrike, while the open ground near the river enabled the bird to be seen in the trees on the opposite bank. The home range occupied about 95 acres, measured by mapping the hunting posts around the perimeter. Robson (1954) implied that a home range in Westmorland measured about 880 yards x 400 yards, which is about 73 acres, but he stated on the previous page that the area was 35 acres. No other information is available on the size of the home range of shrikes wintering in Britain.

Within the Fochabers home range the vegetation differed greatly on opposite banks of the river, affecting the prey species available and the shrike's hunting methods. On the east side of the river trees—mainly Scots pine *P. sylvestris*—were planted on strips of ground about a yard wide separated

by drainage ditches a foot deep and 18 inches wide. Large numbers of field voles *Microtus agrestis* lived in the coarse grass in and around these ditches. The abundance of vole runs, droppings and latrines, and the amount of grass stems bitten through, indicated a peak population, which also occurred nearby in Banffshire during the winter of 1967/68. In October 1968 voles were much less numerous than in the previous winter in the area formerly occupied by the shrike.

Hunting methods

In the open eastern part of the home range the shrike used perches in sycamore and ash at heights of five to 25 feet but generally above 12 feet. These trees grew along the river bank at the edge of the vole-inhabited ground, but the shrike also perched on scrubby alders about four feet high in the middle of the planted area. From those perches the shrike pounced directly to the ground, usually within ten feet of the bottom of the taller trees, and returned to the same or a nearby perch.

On the west bank of the Spey the shrike perched on the top-most branches of alders or willows at 20 to 30 feet. From these it made short flights along and among the thickets, not unlike the hunting flight of a Sparrowhawk, swooping down initially from its high perch and rising at the end to a different perch. The dense trees and shrub layer prevented it from pouncing on voles except in a few grassy patches, and the hunting flight was obviously directed against birds which might be caught by surprise rather than by flying down.

Duckels (1968) has described an interesting case of a Great Grey Shrike descending into brambles after a Stonechat which flew out and was pursued and killed. Dr R. Richter saw an unsuccessful pursuit of a Chaffinch at Fochabers. Although Robson (1954) found Blue Tit, Fieldfare and Skylark among prey remains of a Great Grey Shrike wintering in Northumberland, and more recently Glue (1968) found remains of six small birds, eight small mammals, one reptile and various invertebrates in shrike pellets in Hampshire, Mester (1965) gave an extensive review of prey and hunting methods and found that unsuccessful pursuits of birds were common. Boyd (1957) found that a Great Grey Shrike in Cheshire regularly dropped from its perch into long grass and apparently ate its prey there, which suggests that this would be small rodents or insects. The Fochabers shrike regularly crossed the river and, in my experience of a few hours watching, spent more time on hunting posts on the east side than elsewhere, presumably hunting voles.

As Mester (1965) found opinion divided as to the mobbing of Great Grey Shrikes by small passerines it seems worth recording that a Great Grey Shrike on the Balloch Hill, Keith, in October 1964 was repeatedly mobbed by tits and could be

located by the disturbance it caused among these birds. Two other Great Grey Shrikes which I watched for fairly brief periods in Inverness-shire and Kincardineshire were not mobbed in this way, but N. Picozzi (pers. comm.) saw the Kincardineshire shrike being mobbed by tits.

Regarding winter territory, Lack (1968) has pointed out the advantage to birds such as shrikes of a territory which ensures the isolation advantageous to their solitary way of hunting. The Fochabers area was not defended and the shrike was not heard singing so that this should perhaps be regarded as a home range rather than a territory. Similarly, although some of the shrikes studied by Mester sang, their "territories" did not adjoin those of their neighbours and there was no reference to territorial defence. However, the Fochabers shrike occupied a similar area of ground, which may have been related to the abundance of prey or other unknown factors. The term "home range" is more familiar to mammalogists and means the area in which an animal finds food, shelter and conditions suitable for breeding. It is not defended against other animals of the same species. Territory, on the other hand, implies a defended area.

Food

Fourteen pellets (plate 4) were collected in March 1968 from beneath the shrike's hunting perches on the east bank of the Spey. They were grey and fibrous, rather loosely knit together, and externally showed much small mammal hair and mandibles and other bony fragments of small rodents. The size was rather variable, ranging from 40mm x 19mm down to 15mm x 12mm and 17mm x 14mm. Mean size was 25mm x 14mm, the lesser measurement, presumably related to the size of the oesophagus, varying only between 12 and 16mm, except for one large pellet at 19mm. For comparison, pellets of Kestrel measured by Blue (1967) averaged 35 x 15, by Simms (1961) 34 x 14, and by Davis (1960) 31 x 11.

Analysis of 12 pellets showed the remains of 5 field voles, 1 small bird and several invertebrates, probably beetles. Using conversion factors based on a 20gm rodent as standard and relating other prey to this (see *e.g.* Fairley 1967) 83% by weight of the shrike's food was field vole and 17% bird, with a trace of invertebrate prey, but the pellet sample was too small for accurate assessments. See also p. 25.

The mammal remains were rather small, with the crania broken into fragments about 6mm across, but the jawbones were intact and were used to identify the prey. Bayer (1950) analysed 139 pellets of Great Grey Shrikes from southern Germany between autumn and the end of January and found the remains of 76 voles *Microtus*, 124 insects, especially beetles and earwigs, and one small unidentified bird; much the greater

part of the weight of food consisted of voles. Similarly the Great Grey Shrike invades eastern North America about every fourth year during years when voles and mice are at peak populations (Lack 1954).

It is possible that the Great Grey Shrike's pursuit of birds, being much more obvious than the long periods of inactivity involved in waiting to pounce on voles, has attracted more attention and may have given rise, for example, to the *Handbook* reference to Great Grey Shrike prey as "largely small birds."

Acknowledgments

I am much indebted to E. Thomas and Dr R. Richter for additional information on hunting methods, perches and the locations of the shrike, to M. Macpherson for information on areas planted with trees, and to Dr Adam Watson for his comments on a draft of this paper.

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(In view of the happy coincidence of having several contributions on the Great Grey Shrike at one time we are including two notes below which would otherwise have gone in the Short Notes section.—ED.)

Notes on a Great Grey Shrike wintering in Lanarkshire

From 26th December 1967 to 6th March 1968 my family and I regularly watched a Great Grey Shrike which frequented an area about two miles long and half-a-mile wide on the north side of the Clyde opposite Hamilton Low Parks. This is an

area of coarse grass and boggy ground, with hawthorns scattered on hilly slopes and a dense belt of willows at the eastern end. A few old oaks grow at one edge of a small level field containing scattered hawthorn bushes and trees, and the shrike lived in this area during the last six weeks of its stay.

It was conspicuous at a great distance owing to its almost invariable habit of perching on the very top of a bush or tree. A dead branch on the largest oak was a favourite perch. Against a dark background it appeared largely white, and at a distance often seemed suspended in mid-air when its perch was invisible. Its silhouette and frequent downward tail-flicking were very distinctive. When perching it often turned to face in the opposite direction, with much swaying and tail-flicking, as if it found this movement difficult. Occasionally it would turn in a complete circle, again looking somewhat inebriated. Kestrels hunted the area regularly, but they, and a Sparrowhawk which once perched only 20 yards from the shrike, caused it as little concern as did nearby humans.

Its flight was usually the same—swooping down to ground level, where it occasionally landed, and sweeping up to the top of a bush. The only time when this varied was when it chased a bird directly, sometimes into the middle of a hawthorn. Once we disturbed it eating a Chaffinch about four feet up in a hawthorn bush. The finch was wedged quite firmly between two branches and had been gutted. When we retired about 100 yards the shrike returned and flew off with the remains in its claws. We found another part of what was probably the same Chaffinch about 100 yards away, this time impaled on a thorn in the heart of a hawthorn, about two feet off the ground.

During late February the shrike was obviously feeding well, judging by the frequency of its droppings and the abundance of small passerines in the area. On one occasion, while we were approaching its larder, the shrike flew down into the hawthorn, about 20 yards from us, and immediately flew out again carrying a vole in its beak. When we last saw the bird, on 6th March 1968, it was carrying a frog in its feet into a hawthorn, where it sat eating it about five feet up. After 20 minutes it flew off with the remains of the frog. During our observations of this bird we only twice saw it disgorge a pellet.

We heard the shrike singing on four dates in late February, when the song was very varied, being at times repetitive (a whispered *too-ee, too-ee*), liquid or rasping. On 1st March the song was noticeably louder and even more varied. It appeared to mimic Rook, Lapwing and Blackbird, and also frequently interspersed its own short, bubbling crescendo or short rasp. A short snatch of song was heard on 2nd March.

KENNETH C. R. HALLIDAY.

Notes on the feeding behaviour of a captive Great Grey Shrike

In October 1968 I was given a Great Grey Shrike which had a damaged wing. I kept it for ten days, first in a bird cage and later in a large wire-fronted box (plate 1). After only one day the bird settled down and took food readily, occasionally even grabbing it from me, and made no attempt to escape.

I fed it on mice and on small birds brought to me by local schoolchildren. The latter were available in some numbers, as heavy migration was in progress at the time and many small birds were being killed or maimed by cats, flying into telephone wires and so on. The shrike was willing to tackle dead prey up to Redwing size. The only live prey offered was earthworms, which the bird took after seeing them crawling on the floor of its cage.

During the second day in captivity the shrike immediately pounced on a dead Brambling which I put in the small cage. It then hopped up onto the high central perch, carrying the prey, and stared intently all round the cage before hopping down to the floor, where it commenced flinging the Brambling's body (which it held by the head) over one of the low perches an inch from the end of the cage. Having thrown the body over the perch it would drag it along to the end, obviously trying to wedge it in, but it continued to fail in this manoeuvre until I altered one end of the perch to form a crotch with the end of the cage. After one or two attempts the shrike was then able to wedge the Brambling in position, and only then did it commence to tear off pieces and eat.

I later made some experiments and found that unless a possible wedging place was provided the shrike was unable to eat prey which was too large to be swallowed whole. Such prey was usually dragged round and round the cage with a succession of backward jerks. Compared with a true bird of prey or a Crow the shrike showed little ability at holding down large prey with one foot.

Later, in the larger cage, I provided part of a bush and spiked some of the twigs with sharp nails, but I saw no deliberate attempt to use the nails as thorns to impale prey. Usually the shrike used a branch a little higher than the one on which it was perched, getting the body of the prey across it and dragging it along towards a crotch. If in the process the body caught on a nail this was good enough, but if not it was dragged on to the crotch and if possible jammed there. The bird then hopped to a lower twig and started to pull pieces off and eat. When the bird had eaten enough, or when after repeated meals only the skin was left, the prey remains were left hanging and ignored. A mouse, with its relatively thicker neck, was much more difficult to wedge securely than a bird, and I noticed that if no suitable 'jamming places' were avail-

able the shrike was simply unable to pierce a mouse's skin, and after a time would give up trying.

These observations show clearly that without 'jamming places' of some sort, a shrike finds it difficult, if not impossible, to deal with prey of a certain size. Wedged or impaled prey may not necessarily mean the formation of a 'larder' by a Great Grey Shrike, though prey storage of this kind is well known in this species.

R. J. TULLOCH.

(While these three accounts were being prepared for publication, an important paper, "The impaling of prey by shrikes" by G. Beven and M. D. England, appeared (*Brit. Birds* 62: 192-199). It includes details of impaling techniques and describes the use of larders by this species. Further observations on larders and hunting techniques appear in the same issue (62: 203-204) in a short note on "Feeding behaviour of Great Grey Shrike in North Africa" by K. E. L. Simmons. Numerous accounts of hunting methods of Great Grey Shrikes, including the chasing of birds in flight, appear in the literature, but little mention seems to have been made of the actual process by which prey is killed. Mester (*Brit. Birds* 58: 375-383) quotes Naumann (*Naturgeschichte der Vögel Mitteleuropas*, 1905) as saying prey is seized in feet and bill together, and Cade (*Wilson Bull.* 74: 386-408) as saying that prey of the Northern Shrike, the North American race of this species, is seized by the feet from the side and killed by a bite in the neck in hawk fashion. In *The Living Bird*, the Sixth Annual Report of the Cornell Laboratory of Ornithology (1967), Cade, in his paper "Ecological and behavioural aspects of predation by the Northern Shrike", states that small birds are usually caught in the feet, but are occasionally struck down first with the bill. Rodents are always attacked with the bill and picked up in the feet. Small prey is carried in the bill, larger prey in the feet. Attacks may be launched from 200 yards or more, and bumblebees were spotted at 100 yards. Vertebrate prey is killed by a series of hard bites which sever the cervical vertebrae or damage the nerve cord. Shrikes' bills bear a tomial tooth similar to that of falcons which, it is suggested, plays an important part in efficacy of killing via the neck. Readers who are interested in falconry may be surprised to learn that some of the experiments described in this paper were carried out flying Northern Shrikes from the fist.—ED.)

Postscript. Dr G. D. Morison identified the insect prey remains from the Spey bird (p. 21) as (1) *Hymenoptera, Ichneumonidae*, one black and yellowish, about 15 mm long, reduced to over 18 fragments including left forewing, (2) *Diptera, Cyclorrhapha, Clayptratae*, specimens little smaller than house-fly, one right and one left forewing from possibly two specimens of same species, (3) fragments of cuticle of three insects, probably under 10 mm long, possibly beetles.

Short Notes

Black-necked Grebes nesting in Selkirkshire

When taking part in the Great Crested Grebe census on 30th May 1965 Lt.-Col. and Mrs Linehan discovered a pair of Black-necked Grebes on a new sheet of water formed by the damming of the outlet of a marsh in Selkirkshire. Capt. W. S. Medlicott watched them build two nests within an hour on 31st May, pulling up weed from below the surface, and on 4th June he saw two eggs in the second nest, material being added by both birds but arranged by the female only. Dr J. Meikle also took part in observations.

I first saw the nest, which was in full view in open water, on 9th June, when the female was incubating and material was still being added. On the 16th, after a night of heavy rain and high wind, the water level had risen and the nest was almost awash. The grebes were paying little attention to it, and were preening and bathing together. By the 18th they were already prospecting for another nest site, and the female twice jumped onto a submerged eminence and stood with neck held low, apparently considering its possibilities. Another nest was completed here by 27th June and she was again incubating, which she continued to do until 29th July when it was obvious that the eggs were infertile.

The previous night was one of very heavy rain and once again the water rose. At 3 p.m. both birds were repairing the nest, which was just visible, but by 7 p.m. it was submerged and finally abandoned. The grebes were last seen on 21st August.

This is believed to be the first record of the Black-necked Grebe in the county.

ARTHUR J. SMITH.

Black-browed Albatross in Orkney

On 13th August 1969 at about 1530 hrs from the deck of the ferry boat *St Ola*, while sailing from Scrabster to Stromness, we observed a Black-browed Albatross off the island of Hoy flying from NW to SE and passing the ship at about 200 yards. It was very large and flew low over the sea, now and then gliding. The head, rump and underparts were white; the mantle, including the upper surface of the wings, and the tail were blackish or dark brown; the bill was large and yellow, and a small dark stripe through the eye was plainly seen. It had the appearance of a huge Fulmar with long nar-

row wings and a heavy-looking head. The tail was short and square-ended.

K. JANICH, M. JANICH, N. VAN SWELM.

(Apart from the recent series of Firth of Forth/Bass Rock sightings, this is the first Scottish albatross to be specifically identified, though the two earlier records (Orkney 18th July 1894 and Fair Isle 14th May 1949) were probably Black-browed too.—ED.)

Purple Heron at Fair Isle

Gordon J. Barnes saw a Purple Heron fly low over his croft on Fair Isle at 1230 hrs BST on 2nd May 1969. He informed us and we saw it a little later in marshy fields at the south end of the island. We had good views of it, at ranges down to fifty yards, as it stood rather hunched up and miserable looking in a ditch, and also in the air. Like the bird I saw at Fair Isle in 1965 it was easily distinguished from a Heron in flight by its pale brownish grey wings with black ends, its smaller size, its comparatively larger feet and the narrow but very bulging neck. On the ground we noted that the back was grey and brown, the scapulars rather golden, the carpal patch rufous, the head buffish with the crown bluish-black and the chin nearly white; the neck and throat were buff with black streaks down the front of the neck; the rest of the underparts were buffish-brown and the tail was dark; the bill was orange-brown and the legs greenish-brown with paler, more orange, feet.

It was seen that afternoon in the same fields and also on 3rd, 4th, 5th, 7th and 8th May. The next sighting was in rock pools near the South Lighthouse on 15th May, and with a telescope it was seen that the bird was ringed. It was trapped in a mistnet before breakfast on 16th May and found to be wearing an Arnhem ring. The bird was examined at the observatory, reringed with a British ring, and released. It was seen at the south end, but not every day, until 31st May. During its stay it was seen catching eels in the ditches as well as small fish from the rock pools. It was seen by many people, including K. Armstrong and Mrs M. T. Dennis, during its stay on the island.

The Dutch ringing office informed us that the bird had been ringed as a pullus on 17th June 1967 at Noorden (Zuid Holland) 52°10'N, 4°50'E. On 16th May it weighed 867.5 gms and its measurements (in mm) were wing 340, bill 117, tarsus 118 and tail 131.

Detailed description. Forehead and crown grey-black, bluish above bill; back of neck rufous-grey with some black streaks; sides of head and neck buff with chestnut; chin and upper throat off-white;

neck and breast whitish-buff with black and buff streaks; belly and under tail-coverts mixture of buff, rufous and grey-brown; underwing grey, the coverts tipped dark chestnut; tibia feathers chestnut-buff. Upperparts dark oily grey-brown, greenish sheen on most feathers, some tipped buff; rump and upper tail-coverts greyish-black with green oily sheen; scapulars same as mantle but some buff and orange-chestnut feathers; primaries and primary coverts blue-black (outer 4 primaries and outer 3 coverts old feathers); secondaries paler and greyer; greater coverts grey with buff-orange outer webs; median and lesser coverts grey-brown broadly edged rufous; bill and face yellow-orange, greener around eye, bill darker along top of upper mandible; legs and feet dark brown in front but yellow-orange from behind and on bare part of tibia; iris whitish-yellow, slightly reddish round the edge.

R. H. DENNIS.

(There are five previous Scottish records, a young ♀ shot East Lothian, 21st October 1872, one shot Aberdeenshire 29th October 1872, a young ♂ shot Caithness 16th September 1907, one seen Berwickshire 8th April 1917, and one seen Fair Isle 17th-22nd June 1965.—ED.)

Green-winged Teal in Fife

On 12th October 1968, a day of gale-force southwest winds and heavy rain showers, we spent about 40 minutes in the hide at Morton Lochs, Fife, watching a large assembly of Mallard, Wigeon, Pintail and Teal.

We located two drake Green-winged Teal a few yards apart. Both were very similar to drake Teal in every way, but showed a distinct vertical white line in front of a broad green wing-patch rather than the common bird's horizontal white line above the wing.

K. C. R. HALLIDAY, H. S. C. HALLIDAY,
JESSIE M. MCFARLANE.

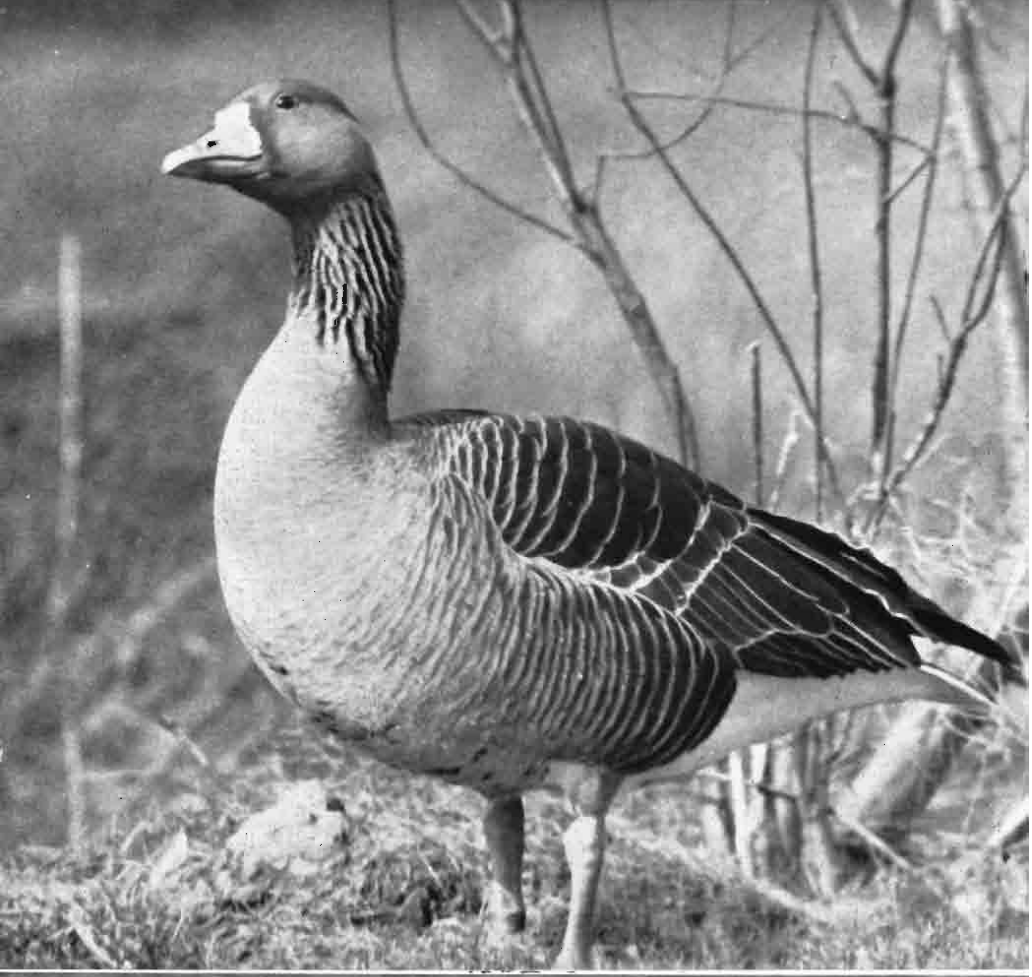
(This is the first record of this American race for Tay, and the 11th for Scotland. Ten of these have been recorded since 1952, and all have been drakes.—ED.)

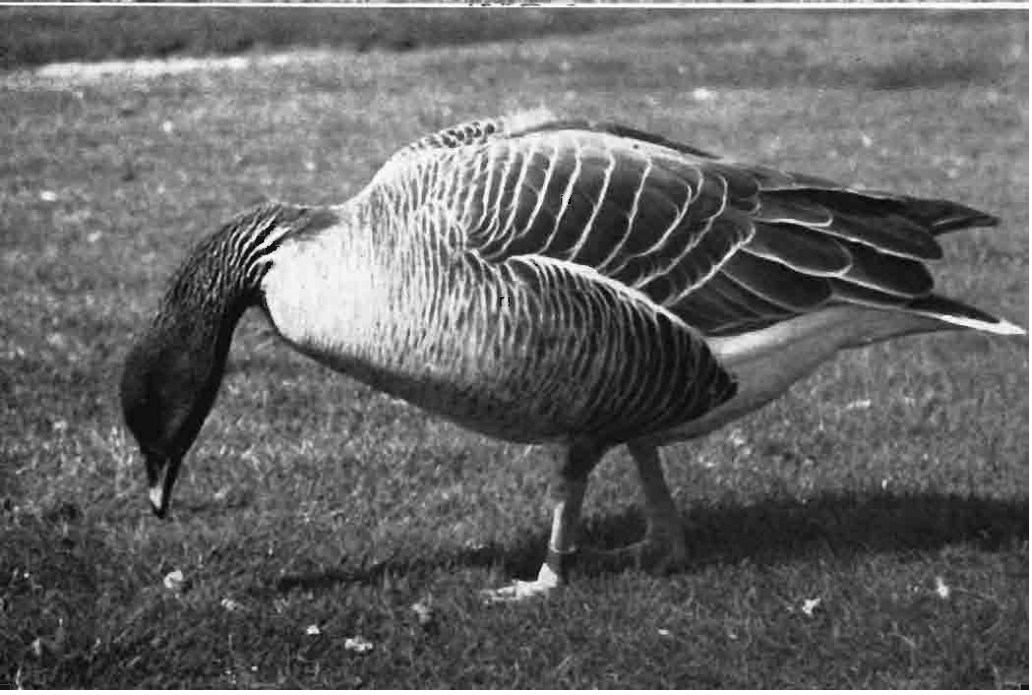
Blue-winged Teal in Outer Hebrides

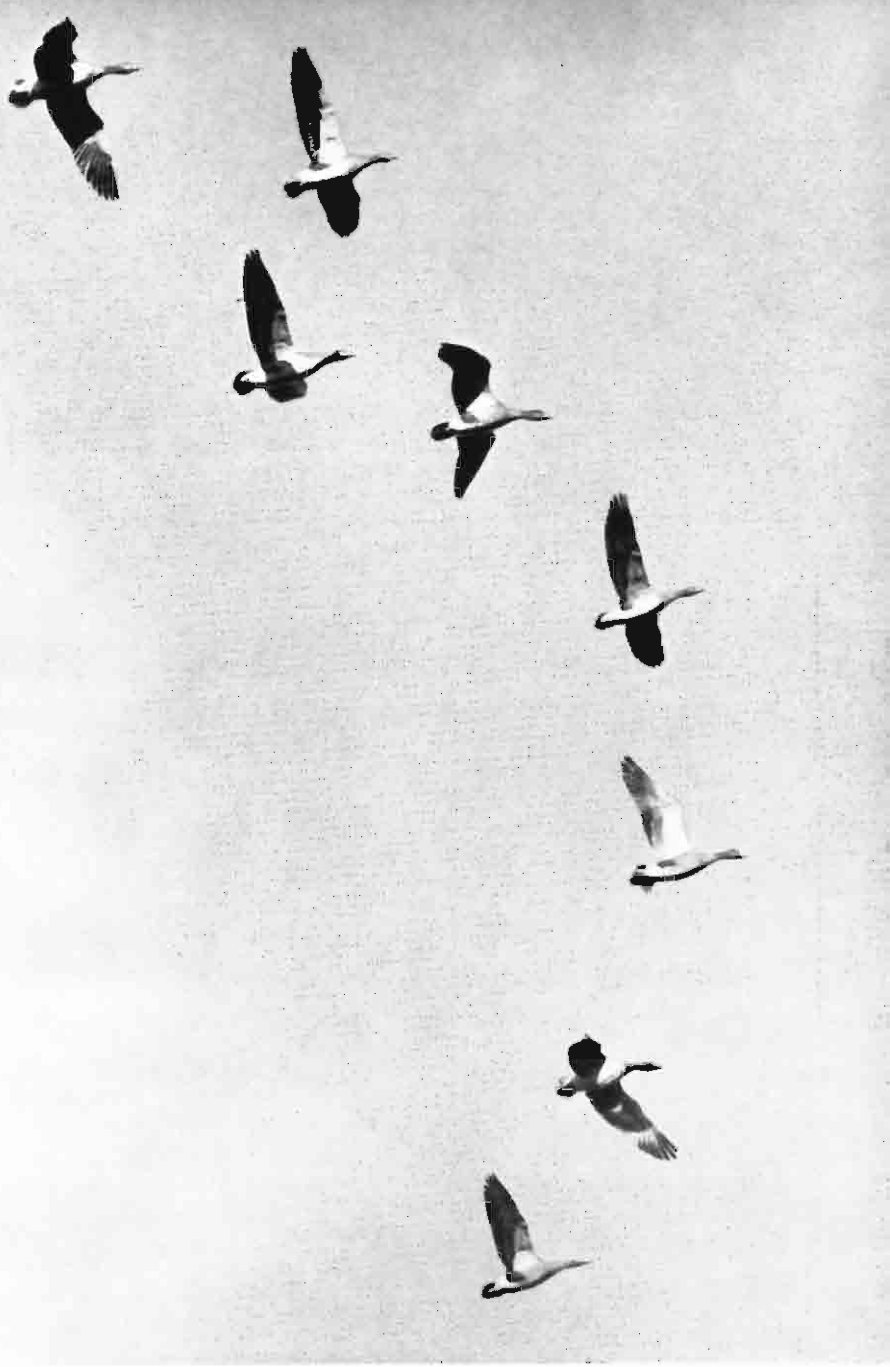
On 29th April 1968 I found a drake Blue-winged Teal at Loch nam Feithean in North Uist. It tended to associate with a pair of Shoveler feeding on the loch, but it was gone next afternoon.

At first sight, at about 150 yards, it was like a small Gadwall, with the same grey flanks and black stern, but there the resemblance ended. It showed two very conspicuous white marks, one crescent-shaped in front of the eye, and the other a patch on the flanks just in front of the black stern, rather like a Wigeon. In flight the powder-blue patches

PLATE 1. Injured Great Grey Shrike, Shetland, October 1968 (see page 18).
Photograph by R. J. Tulloch







PLATES 2-3. Grey Lag Goose (top), Pink-footed Goose, and a skein of Grey Lag Geese in Perthshire, November 1964 (see page 5).

Photographs by Morley Hedley

PLATE 4. Pellets of a Great Grey Shrike (scale in cm) (see page 18).
Photograph by R. Hewson

on the upper wing-coverts were very striking, and later, when it was in eclipse plumage, this was the only way to identify it. I asked C. MacDonald, a local crofter, to corroborate my observation, which he did by checking the various points as I read from the *Field Guide*.

With G. A. Williams I saw what was probably the same bird on the same loch on 14th June, and later that day it was seen by Drs W. J. Eggeling, J. Morton Boyd, M. E. D. Poore and I. Newton, all from the Nature Conservancy. It was still there two days later. Some visitors saw it on Loch na Reivil on 31st July and 8th August, and I saw it on the 9th with a flock of about 40 Shoveler, and finally on the 16th with the same flock. I can only conclude that this bird spent the whole summer on these lochs at Balranald Reserve. From 31st July onwards it was in eclipse plumage.

A. R. McGregor.

(Three of the five previous Scottish records of this North American duck are also from the Outer Hebrides: a female shot on 10th November 1927, a pair (one shot) on 6th September 1940, and two shot (a female and a probable young bird) on 18th October 1950 (*Birds of Scotland; Scot. Nat.* 1951: 191). The others were an adult female shot in Dumfriesshire in 1858 (*Naturalist* 1858: 168), and an adult male in Orkney on 10th November 1966 (*Scot. Birds* 4: 503). The present record is the first in summer, which, together with the bird's long stay, must make one wonder whether it originated in captivity.—Ed.)

Ring-necked Duck in Aberdeenshire

On the afternoon of 16th February 1969 while making one of my regular duck counts on the Don estuary, north of Aberdeen, I noticed a strange duck on the edge of a small group of Tufted Duck. It was constantly more watchful than the Tufted, often with its head raised alertly. The light was excellent and I watched the bird on the water for 20 minutes from 50-100 yards and then went to find another observer, who unfortunately could not come until the next morning, by which time the bird could not be found.

It was readily identified as a drake Ring-necked Duck. Possibly it was wintering in the area, for the date on which it was seen was in the middle of a severe freeze-up which had brought 120 Tufted Duck to the estuary, where they are seldom seen except in hard weather.

The bird resembled a drake Tufted Duck, being of a similar size or slightly larger, but with noticeably darker flanks —pale slate-grey at the back, paling towards the shoulder region, where they were almost white. The head was glossy

black with a noticeably high crown and a marked concavity at the nape, quite unlike the accompanying Tufted drakes. There was no crest, whereas those of the Tufted Drakes were plainly visible, ruffled in the breeze. The bill was blue-grey with an indistinct white ring round the base, and the tip dark with a broad white subterminal band.

M. J. H. Cook.

(The only previous Scottish record of this American species is of a drake in South Inverness-shire during January 1963 (*Scot. Birds* 2: 476).—Ed.)

Escaped American Red-tailed Hawk nesting with Buzzard in Midlothian

On the evening of the big gale in January 1968 a young falconer lost his immature female American Red-tailed Hawk *Buteo jamaïcensis,* imported from western North America the previous autumn, in the vicinity of Esperton Quarry near Gorebridge. At this time it was very tame and was photographed and filmed by at least one person. It was even reported that the local butcher used to feed it from his van. The falconer tried unsuccessfully for some time to recapture it but eventually gave up and so the hawk remained free.

I was told in early June, but by this time it was much more elusive, since the trees were in full foliage and the bird had extended its hunting area. During my numerous visits to the area I was lucky enough to get some good sightings, and on one occasion called it down to circle about 15 feet above me, but it was not really hungry and it ignored my lure and flew off. By mid July it had moulted out of immature plumage and now had the rich, chestnut-coloured tail of the adult. I had by this time tried all the usual methods of catching it but it was never hungry enough to be tempted into the various traps. It eventually moved out of the area and I gave up the search.

I had one secondhand report of it being seen in the company of a common Buzzard *Buteo buteo* near Broughton, Peeblesshire, in October 1968.

I next heard of the bird in May 1969 when the gamekeeper I had met the previous year came to tell me that it was again in territory on a neighbouring estate, along with a Buzzard. My first encounter with her in 1969, on 30th May at 9 p.m., showed a complete change in her character. Instead of keeping away, she circled over us screaming as she flew. I had never heard her call before and was amazed at its harshness. Her flight was just like a Buzzard's but with much more vigorous wingbeats and a surprising turn of

speed for a bird of her size. The main events of the next few days are as follows.

31st May, 8.15 p.m. Torrential rain. Watched her hunting for a short time between squalls. She was obviously hungry but the weather conditions forced her to abandon hunting that night. Set up cage trap.

1st June, 4.30 p.m. Beautiful afternoon. Watched her soaring at a great height being pestered all the time by two Carrion Crows which she easily dodged time and time again. A male Buzzard appeared and as they circled together it was easy to compare their size, the Red-tail being a much bigger bird and a much stronger flier. She pitched into a tree, and when we flushed her we found that she had been on a nest. This was easily examined from a vantage point on the hillside but we could not see anything in it. I then closed the trap and left the area.

3rd June, 8.30 p.m. After we had made sure that the birds were not in the vicinity, the tree was climbed and the nest was found to contain four eggs, one at least of them chipping. The shell had a small crack and the bill of the chick could be seen moving within the exposed membrane. There was every sign that the chick would be hatched sometime in the early morning. We decided to leave our next visit for a few days so that there would be no chance of disturbance at this critical period.

10th June, 8.30 p.m. No sign of adults and so again climbed the tree. The nest was empty but for broken eggshells and it looked as though it had been robbed by Crows.

14th June, 3 p.m. Both hawks seen in the area but they kept well away, Rook-scarers set up nearby possibly frightening them.

From then on she was seen less frequently as she widened her territory. I must stress that the failure of the nest was not due to human interference. With the exception of the evening we examined the eggs, when we knew the female was hunting in another area, all observations were carried out well away from the nest. The female was well accustomed to people, as local farmers and gamekeepers were often quite close to the nest and there were innumerable fishermen passing virtually underneath as she brooded. In addition to all these factors, she herself had been a tame, trained hawk and so was quite used to seeing people at very close quarters.

My explanation for the failure is that the male was only seen infrequently, and never either hunting or with prey, and the onus of breadwinning was left to the female. Consequently she was off the nest for long periods, leaving it an easy target for marauding Crows. At this time the tree

itself had very little foliage, which made the nest particularly conspicuous from the air.

Identification of both birds was positive. Both were broad-winged hawks adapted for soaring flight. The Buzzard male was of the pale-breasted form and was more grey than brown. The tail was banded in the typical pattern, but two centre tail feathers were missing, giving him a kitelike appearance. His call was unmistakeably that of a common Buzzard.

The female was easily recognised by her larger size, her tail rich chestnut above and pale, almost pinkish, below, and by her harsh scream. She was extremely rufous on the breast and belly, so that it was possible to identify her with a fair degree of certainty as the western race *Buteo jamaicensis calurus*.

Hunting habits of the female showed two distinct forms. One was by close quartering of the ground at treetop height followed by a stoop at the quarry. The more common method was to take up a stance in a tree and sit there motionless before swooping down on any unsuspecting prey which came near her perch. This is very much the way in which a Goshawk hunts.

Prey included young rabbits, of which bits were found under perching places. The remains of an adult Curlew were found 20 feet up in an oak tree about 100 yards from the nest. Over the past two seasons the female has gone for a Mallard drake, which she hit hard but failed to kill, Pheasant poults, domestic poultry and young rabbits. The latter seem to form her staple diet owing to their abundance and the ease with which they can be caught.

The nest was some 45 feet up in the fork of an oak tree, and was a large affair about 3½-4 feet across, with a nest cup about 12 inches across and 3 inches deep on one side of the main structure, leaving a large platform at the other side. This bulky nest was strongly built with twigs and fairly hefty sticks and the cup was lined with fresh green shoots of fir.

The oak was about 10 feet from a small burn flowing through a steep-sided valley. One bank of this valley was thickly covered with mature woodland and the other was steep, rough pasture with scattered birches and large clumps of gorse. The hawk had four favourite perches apart from the nest tree. The first was a tall pine about half a mile from the nest. It was on top of the valley ridge and dominated the surrounding landscape. The second was a large fir 100 yards up the slope from the nest, again affording an excellent vantage point and from which she obviously collected the material for lining the nest cup. The other perches were in two

large beeches within 300 yards of the nest, one on either side of it. When she used these trees she was extremely conspicuous, her red plumage contrasting with the bright green foliage. The eggs were slightly larger and more rounded than those of a Buzzard and quite unlike eggs of that species. They were devoid of any brown markings and were a dirty off-white colour, but on close inspection they showed a peculiar greenish, marbled effect all over. The broken remains of the shells are now in the Royal Scottish Museum. I believe that at least one of them had hatched before disaster struck, as with them in the nest were a few small, white, downy tufts such as are found on a nestling hawk.

Although only once certainly flushed from the nest the female was frequently seen in close proximity to it and appeared to come from it when flying to attack me or the farmer on different occasions, which she did if approached down the hillside though ignoring people walking along the burn. Only the one, easily recognised, Buzzard was ever seen, and the species is normally an infrequent visitor to the area.

I have not given the exact location of the nest but it is known to the editor and others. As most people will realise, this bird is a potential threat to game and poultry, and efforts to recapture it will continue, both for this reason and because it is a valuable falconer's bird and an alien to our avifauna. At the time of writing, in the autumn of 1969, the Red-tailed Hawk is still in the area. I would be pleased to hear from anyone who can supply any information about it or its mate, at the Royal Scottish Museum, Chambers Street, Edinburgh. Those who have seen the birds include W. T. P. Stout, M. J. Everett, J. Reddington, W. Tait, B. King, J. Arnott, I. Hutchinson, P. Howard, W. Brotherston, L. Young, R. W. J. and Mrs E. M. Smith.

JOHN B. MURRAY.

Kites in Angus

On 15th April 1969, in the evening, I was birdwatching with my wife at Kinnaber, near Montrose, looking for the nest of a pair of Sparrowhawks we had seen. We spotted what we thought were the male and his mate on the branches of a beech tree, but as we advanced cautiously it became clear that though they were raptors they were not the ones we were looking for. At about 60 feet the two birds flew off together some 40 feet over our heads in seemingly effortless flight, soaring swiftly upwards and then moving away in a sort of gentle gliding flight quite unlike anything I had seen before and with very distinct strong wingbeats, as if they were not taxing themselves to the full.

They were instantly recognisable as Kites from their distinctly forked tails, the fork at times extending some three-quarters of the length of the tail. One bird was a little smaller than the other, but in shape and colour they were the same.

The forked tails were visible but less obvious when the birds were perched. They were golden reddish-brown with dark brown markings on the feathers, and their heads were light in colour, but not as light as in any of the illustrations I have seen in bird books. The tails seemed darker than the body. The yellow legs and feet were unfeathered. As the perch hung over the North Esk it was not possible to get a view from the front. In flight the underside of the wings was dark on the leading edge and light on the trailing edge, with white patches at the base of the primaries; the wingtips were dark.

I am familiar with the local raptors and others elsewhere but these were quite new to me. I am absolutely certain they were Kites.

GRAHAM STEPHEN.

(Mr Stephen has submitted sketches showing the slender angular silhouettes and deeply forked tails of the birds in flight, and their upright stance.

There were only two satisfactory records of the Kite in Scotland from 1920 to 1968, yet for 1969 we have already noted two others (*Scot. Birds* 5: 381) and there was a "spate" of records in England about the same time, including two together in Norfolk on 16th April (*Brit. Birds* 62: 248).—ED.)

Black Kite in Orkney

While in Rousay on 15th May 1968 I observed a big dark bird of prey wheeling gracefully over Trumland valley. It was circling and gliding to and fro fairly high up, with a shallow-forked tail that became more or less square when fully spread; the bird was a dark silhouette and its colours could not be seen properly, but I had no doubt it was a Black Kite, a species I previously watched for a considerable time when one was present in Orkney on 18th and 19th May 1966 before moving to Shetland.

As so often with visiting raptors the bird was being mobbed by a male Hen Harrier, whose mate was incubating in the valley below, and quite soon it was escorted round the shoulder of the hill and out of sight. The distance and the angle of the sun made it just about impossible to see any underwing pattern, but the whole plumage appeared to be fairly uniform dark brown. It was a big bird compared with

the Hen Harriers, and its actions and attitude in flight were the same as the one I watched in 1966 (and it was definitely not a dark Marsh Harrier, a rarity in Orkney but which I have seen elsewhere).

This is only the third Scottish record of the Black Kite (see *Scot. Birds* 4: 296).

E. BALFOUR.

Red-footed Falcon in Shetland

On 31st May 1969 Mrs Rita Leask, who lives on a croft at Hamnavoe, on the south side of Yell, telephoned to tell me that a strange bird had arrived the evening before and was still there. Her preliminary description suggested Cuckoo, apart from a hooked beak. I lost no time in getting there, to confirm that it was a Red-footed Falcon, and by its plumage a first-year male.

It seemed tired and rather tame, sitting hunched on a peat stack 20 yards from the croft house Every now and again it would bestir itself to fly either to a new vantage point (fence post, outhouse roof, turf wall, telegraph pole) or to pick something from the ground. It would allow approach to 30 feet before flying off, and I managed to get some photographs. Mr Leask jokingly suggested I throw it a worm, and his little boy immediately went off to dig some up. I carefully approached the falcon and flicked a worm out onto the grass. To my surprise it bobbed its head a few times then swooped at the worm, only taking fright at the last moment. This encouraged me to try a 'ruler-flicking' method to get the worms farther away from me, and this was successful, the bird thereafter readily accepting worms. After a day or two, however, it got less approachable and looked obviously fitter, due mainly, I am sure, to the quantities of worms fed to it several times a day by the Leask family. It was last seen about 9th or 10th June.

It was not a markedly crepuscular feeder, although it would often disappear for a few hours during the height of the day. Size appeared about the same as a female Merlin, but its flight was more like a Kestrel, less dashing than a Merlin; but comparison was difficult because the bird rarely flew more than a few yards, and then in among houses and walls.

Description Head, upperparts and underparts a rather dirty mottled blue-grey, darker on mantle and round eye, with rather ill-defined moustache, most feathers showing darker shafts; some mottled pale or buffish markings formed an indistinct collar, with pale on chin and a small amount on forehead; centre tail feathers dark brownish-grey, outer ones with buffish barring; primaries and secondaries dark brownish-grey, with barring on secondaries and inner webs of primaries; upper wing coverts distinctly brownish mottled; lower belly and tibia feathers and under tail-coverts reddish-chestnut; legs and feet

orange; bill leaden with darker tip and orange cere; eye dark with orange orbital ring.

R. J. TULLOCH.

(This species has now been recorded in Scotland on 15 occasions (11 since 1940), nine times in spring (6th May-21st June), once on 22nd July, three times in autumn (11th August-8th October) and twice in November (though it seems doubtful whether wild birds would occur so late). This is the second Shetland record.—ED.)

Long-billed Dowitcher in Dunbartonshire

At 11.30 a.m. on 2nd May 1969 on the west bank of the Endrick at Loch Lomond I heard the call of a bird I did not know. It was flying with a Redshank and was about the same size, but of heavier build and with a snipe-like bill. I noticed some rusty patches on the underparts and a long white mark up the back.

I concluded that the bird was a dowitcher, and eventually managed to get within 30 yards of it in good light to make a detailed description and watch it in the company of a Black-tailed Godwit for about an hour. It never strayed far from the pools between the marsh and the open sandbanks, and when flushed it would climb to a height and circle before landing back at a pool near the bank. Its flight was like a snipe in slow motion; it flew with its bill at a low angle and its feet did not protrude beyond its tail. It fed in a quick 'pile-driving' manner, up to its flanks in water. I noted its call as a long high metallic *keeec;* when flushed it usually repeated this note three times, occasionally four times.

From these notes and the following plumage description I identified the bird as a Long-billed Dowitcher.

Crown chestnut but not dark enough to give any capped appearance over brown eyestripe and white superciliary; nape and back streaked chestnut; tail fan-shaped and barred black (more black than white); upper part of tail white, stretching up rump and lower back in long white line; wings silvery grey, leading edges of primaries black, some white on rear edges of primaries and secondaries; throat and breast with rusty blotches evenly distributed on white background; belly and flanks mostly white, with a few rust-coloured blotches; lower belly white; under tail-coverts white towards front, with small black bars on white background on rear half; bill long, thin and snipe-like; legs dark green.

I returned on the evening of 3rd May but could find neither the dowitcher nor the godwit again.

ROBERT J. W. SHAW.

(This record has a special interest because it was possible to identify the species of dowitcher, the bird being accepted as a Long-billed Dowitcher by the Rarities Committee. For

a recent discussion of the problems see *Brit. Birds* 61: 366-372. There is one certain previous record of the Long-billed Dowitcher in Scotland (see *Brit. Birds* 54: 346; *Scot. Birds* 2: 196); indeterminate records, of one species or the other, include a recent one from Dunbartonshire (*Scot. Birds* 3: 255). —ED.)

Dowitcher in Inner Hebrides

On 6th October 1969 at Loch Phuill, Tiree, I had counted 7 Curlew, 40 Lapwing, 200 Golden Plover, 20 Redshank, 8 Turnstone and 70 Ringed Plover on the loch side when a light aeroplane flew over and put up the birds. As they began to settle again I noticed head-on a larger grey bird with no apparent markings about to land at the edge of the water with a small party of Ringed Plover. As it landed I saw it was like a large snipe. I watched it for 1½ hours at down to 40 yards with binoculars and telescope and identified it as a dowitcher.

It fed with the other waders but seemed to prefer the company of the Ringed Plovers, being buffeted at times by Golden Plover and Dunlin, when it would give a rapid flap of its wings and carry on feeding. The water was high and covered grass grazed by sheep and cattle, the grass being saturated for 50 yards back from the edge. The dowitcher kept close to the water's edge or round pools in the grass and it would stand for minutes in one spot feeding from one small patch with very little head movement.

It was slightly smaller in body than a Redshank, with shorter legs, which were hidden in grass where the Redshank's legs could be seen. Once when an alarm call was heard it became erect and looked more like a Redshank or a Ruff. After taking detailed notes I flushed it twice with the Ringed Plover and got good views of the wings, back and tail in flight. It rose only a few feet and landed 40 yards away to continue feeding, and it was still there when I left. I saw it again on the 8th, when it was less approachable and fed over a wider area, but I could not find it on the 9th. The following plumage description is compiled from my notes:

Head, neck, breast, flanks and back uniform light grey, with long bold near-white stripe over eye, and crown slightly darker grey; end of tail apparently barred light and dark; rump white, extending down onto tail and up back; belly white; wings light grey above, with darker mottling and tinged brown, and narrow white trailing edge to inner half; bill long and snipe-like, but heavier, dark coloured but paler at base; legs short, light greenish (grass) colour.

C. S. TAIT.

(These are the ninth and tenth records of dowitchers in Scotland, including the first for the Inner Hebrides; there are two nineteenth century records and eight modern ones

(1958-69), all of uncertain species except for single Long-billed Dowitchers in September 1867 and May 1969. There are now two May records; and the others fall between 15th August and 20th November, but some of the birds stayed for considerable periods, and the latest date on which one has been first discovered is 20th October.—ED.)

Marsh Sandpiper in Shetland

On 4th May 1969 Robert Duthie told me he had just seen a Marsh Sandpiper at Strand Loch, Gott. He had noted how the bird looked smaller than two Redshanks with which it was feeding in the rocky shallows of the loch. He said the bird had extraordinarily long legs; yet it still stood smaller than the Redshanks and looked slimmer.

I later found the bird without difficulty—it looked so much paler and greyer than the darker fawnish colour of the Redshanks. It never bobbed as it walked through the water but often waded quite deep, following the shore for a hundred yards or so then turning back again. Once it caught a tiny fish, which was stolen from it by a Black-headed Gull.

When I flushed the Marsh Sandpiper, its wings, which were a darker fawnish-grey than the rest of the bird, now looked browner, and very long and narrow. The wingbeats were jerky, in twos, and the wings were very curved downwards. The feet came far beyond the whitish tail, the white extending well up between the wings in a point. The bird looked entirely white from below. Before it touched down, the legs hung downwards and out in rather an ungainly way. It ran a step or two as it came to a halt.

Using a 40x telescope I was able to watch the bird at distances down to 15 yards, and on three consecutive days, 4th-6th May, and to take some rather distant photographs.

Description General impression was of a very pale grey bird, almost white below; head, neck and mantle pale grey; very pale grey down throat to only slightly darker breast band; underparts white from there back; white of tail, which had very faint barring near tip, extended up over rump into a point well up between wings; wings fawnish-grey, a little darker than mantle, the coverts darker still, with primaries looking almost black on folded wing; a few dark feathers scattered through wing coverts and scapulars; bill thin, particularly towards tip, very long and blackish, with slight uptilt; legs very long, thin and dark green; eye very dark, with slight orbital ring.

DENNIS COUTTS.

(The Marsh Sandpiper breeds in southeast Europe and eastwards across Asia. The only previous Scottish record is of one seen in Caithness on 3rd-5th September 1966 (*Scot. Birds* 4: 557).—ED.)

Sabine's Gull in Ross-shire

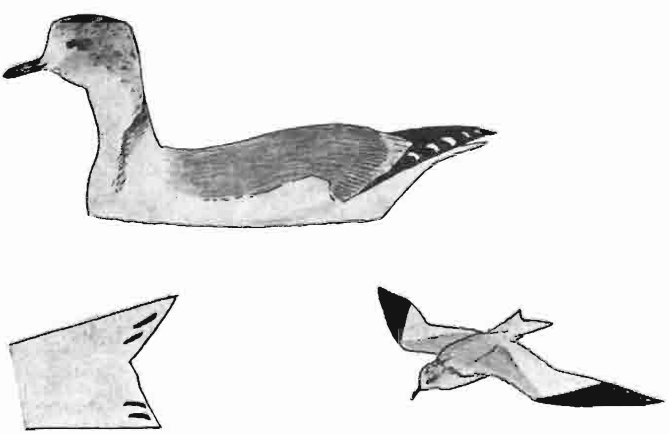
On 3rd August 1969 at Craigton Point, North Kessock, on the Black Isle, J. Thorogood and I noticed a small, darkish gull with a neat, delicate appearance swimming about 50 yards offshore. We watched as it floated on the rapid current past the point where we were sitting. It sat on the surface of the water, pecking at floating material and drifting backwards on the rapid tide, but on reaching a certain point it took off and flew forward to alight on the water and start floating backwards again. This sequence was repeated several times, and we had good views of the bird for three or four minutes, both on the water and in the air.

About the size of a Black-headed Gull, it was more delicately shaped, with a slender neck and small-headed appearance. In flight the textbook wing pattern at once identified it as a Sabine's Gull. Its actions were graceful, with a buoyant, rather tern-like flight. The fork in the tail was visible but not obvious. Plumage details were:

> Forehead and lores white; rest of head mottled grey, darkest on crown and behind eye; nape whitish, mottled grey; neck white with dark collar behind, extending down in curved blackish-brown mark to sides of breast; mantle grey (darker than Kittiwake, nearing Lesser Black-backed Gull); closed primaries black, with row of neat white spots, quite unlike Kittiwake or Black-headed Gull; underparts whitish; in flight, forked tail white with small black marks near tip when seen from below; wing pattern very obvious, outer primaries black, some with small white spots near tip, forewing triangle mid-grey, hindwing triangle white, forming smart, neat pattern rather like juvenile Kittiwake but darker on forewing, more clear-cut, and completely lacking any black diagonal bar; legs dark; bill blackish. Some of these points are illustrated in the sketches reproduced here.

R. A. HUME.

(Through N. Picozzi we referred this record to R. Khan,



who has extensive experience of Sabine's Gull in Cornwall, where he has seen about 70 in recent years. He commented that he had never seen this stage of plumage, with spots under the tail and shading (not an effect of the light) on the neck, but the record was entirely convincing, and the feeding behaviour typical of the species. It would be a one-year-old bird.

Though there are some 13 previous satisfactory records of this arctic gull in Scotland, all but three were before the 1914-18 war. This is the first for the Moray Basin.—ED.)

Behaviour of migrant Black Terns

While watching from my house beside Kirk Loch, Lochmaben, Dumfriesshire, on the morning of 3rd May 1969 I saw a Black Tern feeding among Swifts, Swallows and martins. It was a darkish bird, smaller than the Black-headed Gulls which were also present and occasionally mobbed it, with a grey-black body, narrow mid-grey wings and a distinctive white patch below a short square tail. The bird was still there when I left in the early afternoon.

On my return that evening I was delighted to find three Black Terns feeding over the loch. My wife and I rowed out to them in our small boat. They took very little notice of us, and we were able to study them closely and take a little cine film at 10-15 yards.

They were flying level about 10-15 feet above the water, looking down, and would "fall out of the sky" to catch flies just above the water without ever touching the surface. We watched them for about 45 minutes as they covered an area about 150 yards in diameter, keeping quite well separated, and occasionally calling gently *kip* or *kit*. Then one of them suddenly called much more stridently *keep*, and they came together; their pattern of behaviour now altered significantly. They remained together, and instead of flying down close to the water repeatedly splashed in for three or four seconds at a time, even submerging completely, always in concert. This continued for about five minutes, with much calling, before they rose high in the air and flew off to the southeast.

It seems that this combined display was a preliminary to their departure.

B. P. BOWER.

White-winged Black Tern in East Lothian

On 27th June 1969 in bright clear conditions, with telescope and binoculars, I watched an adult White-winged

Black Tern in flight for about half an hour from North Berwick Golf Course, at ranges down to 100 yards, generally low over the sea and sometimes against the background of the distant Bass Rock. Kittiwakes and Common Terns were there for comparison, and also fishing Sandwich Terns, which were often close and at which it sometimes swooped.

It was a small tern, only about two-thirds as big as the Sandwich Terns, and much slighter and looking very dark compared with their snowy white plumage. It was very quick on the wing, beating up and down a stretch of sea but not diving. Once it climbed quickly and appeared to catch something in the air.

The wings looked white both above and below; the underparts, from the small dark beak to the belly, appeared black, clearly defined from white beneath the tail; the rump looked white, and the upper side of the tail definitely so at certain angles, but as the bird kept mainly at eye level it was difficult to see the back clearly. The tail was slightly fanned in one view, but generally square-cut when seen from the side, with no visible forking.

I have previously seen breeding adults abroad, and also adults and an immature in England.

R. M. CURBER.

(This seems to be the seventh Scottish record, all of them since 1964, and the first for the south of Scotland (*Scot. Birds* 5: 30); the dates are from 7th May to 13th July.—ED.)

Gull-billed Terns in Stirlingshire

Two Gull-billed Terns appeared over a pond in grazing land close to the shore at Skinflats on 6th September 1969 and stayed for an hour, before moving east along the Firth of Forth. Good views were had with telescope and binoculars.

In stalling flight about 12 feet above the water one would drop to the surface, scooping it up with its bill and breaking the water with its belly, then rising a few inches it would move forward, repeating the action three or four times before returning to 12 feet; in this way they covered about 60 yards across the pool from west to east before returning to start again. The birds stayed together, and twice both stopped to rest on posts in the pool. Twice one rose high in the air and disappeared inland, only to return some minutes later.

No other terns were there for comparison, but the birds showed smaller than a passing Black-headed Gull. I have previous experience of this species abroad in the breeding season.

The following plumage description is compiled from my notes:

Forehead and back of head black, also encircling eyes; mantle light grey; tail near-white, short and deeply incurved; wings broad for a tern, with primaries partly dark, giving a streaked appearance near wingtips in flight; underparts very white; short, stout black bill; legs dullish black and noticeably long for a tern.

C. S. TAIT.

(This is the fifth Scottish record (see *Scot. Birds* 5: 285), the first for Stirlingshire and the first involving more than one bird. The three autumn records are closely grouped between 3rd and 11th September, and all from Forth.—ED.)

Three Bee-eaters in Fair Isle and Shetland

At 2000 hrs BST on 7th July 1969 I stopped to speak to Gordon Barnes, who was staring skywards with his binoculars at three birds which were uttering an unusual call that he did not know. I recognised this *prruik* call as that of a Bee-eater. Soon the birds came closer and we saw their brilliant colours. At this stage they were flying at about 1000 feet in a most erratic manner, and after we had followed them with binoculars for about ten minutes they disappeared over the south end of Fair Isle. Fifteen minutes later I discovered all three perched on telephone wires near the shop, and nearly everyone on the island had excellent views of them that evening or on the following two days. They left Fair Isle at 1100 hrs BST on 9th July in a northerly direction.

They were unmistakable birds with yellow and chestnut upperparts; the head was darker with a paler forehead, the yellow throat was bordered with black, and the underparts were bright blue-green; the wings and tail were blue-green, with projecting centre tail feathers; the bill was long, dark and curved; the eye was red. One bird was slightly larger and longer than the other two and it was more brightly coloured. This male bird often flew up calling above the two females, which stayed perched on a fence or telephone wire. We also noted that the male was usually with one of the females, while the extra female was often a little way away and was sometimes separated from the pair by a hundred yards or so. This same behaviour was noted from three Bee-eaters seen in Shetland from 9th July, and it seems certain they were the same party.

Most of their time on Fair Isle was spent perching on fences or telephone wires surrounding marshy fields with plenty of flowers, and we saw them catching bumble bees over these flowers. The one previous Fair Isle record was on 13th June 1966.

R. H. DENNIS.

(Dennis Coutts has sent us details of the Shetland sighting. The three birds were first noted, at Stromfirth, Weisdale, at 10.30 p.m. on 9th July, 11½ hours after being seen leaving Fair Isle some 55 miles to the south. One was a little bigger and brighter than the others and tended to sit with one of them. About 10.30 p.m. on 12th July they circled high in the sky and disappeared.—ED.)

Rollers in Aberdeenshire and Kirkcudbrightshire

On 8th July 1969 we were told of a strange turquoise bird with a brown back which had been seen daily since 28th June at Richmond, near Peterhead. From the description given by the farmer the bird appeared to be a Roller, and later that day we had good views and were able to confirm the identification.

The bird was slightly larger than a Blackbird. At rest on a fence post it seemed squat and dumpy, the head resembling a Jay's; in flight (which was like a Woodpigeon's or a Cuckoo's) it appeared much sleeker, but it was reluctant to fly. When it was sitting, the feathers were fluffed, giving it a fat appearance, and hiding the legs. The head and upper breast were turquoise, with a black line through the eye giving an indented appearance); mantle cinnamon-orange, with dark blue rump visible between crossed wings; breast and belly grey-blue, with slight pink suffusion on flanks; under tail-coverts blue-green; outer primaries all black, inner ones black with brown tips; heavy bill, dark horn, paler at base; a brief view of the legs suggested they were yellowish.

C. J. FEARE, F. C. FEARE, D. E. B. LLOYD,
T. JOHNSON-FERGUSON.

On 10th August 1969 we watched a Roller by the road just west of New Galloway, and we saw it there again several times up to the 14th. It was a bit smaller than a Kestrel and looked rather like one as it perched upright on the telegraph wires with its longish tail hanging down. It would drop to the ground with its rounded wings spread out, then return to the wire, once definitely with an insect. We also saw it flying low over the hillside.

The plumage was unmistakable: bright chestnut back and blue-grey wings in flight; with bright saxe-blue on body and tail as well as wings; and its greyish bill straight and heavy. In certain lights, however, the bright colours were muted and the wings looked slate-grey.

ALICE M. CHORLEY, JOYCE CLIFFORD.

Aquatic Warblers in Fair Isle and Shetland

Aquatic Warblers are difficult birds to see because they skulk in thick cover, such as fields of corn and patches of long grass and reeds on Fair Isle. In 1969 the amazing total of five individuals occurred there between 14th and 17th August, and four were trapped and ringed.

P. J. B. Slater discovered the first in a ditch near Pund on the 14th, and shortly afterwards we trapped it in a mistnet. It was ringed, weighed and measured at the observatory and detailed plumage notes and photographs were taken. Next day J. A. Ginnever found a similar bird in a reedy ditch at Schoolton, and when we mistnetted it we found it was a new bird. Later in the afternoon N. J. Collar found a third one in a field of potatoes at Stoneybreck, and this was also mistnetted. On the 16th a fourth Aquatic Warbler was caught in the Gully and one of the other birds was retrapped. On the 17th three were seen: one a ringed bird from the 15th; one not seen well enough to tell whether it was ringed; and an unringed bird seen by A. J. Parrott. None was seen after the 17th.

All were first-year birds and very similar in plumage; a detailed description was taken of the first, and the others were compared with it and closely resembled it:

> Head distinctly patterned by bright yellow-buff stripes from bill, over and behind eye, and down centre of crown; sides of crown black, feathers slightly tipped yellow-buff; whole upperparts tawny-buff streaked black, streaks on mantle being prominent and those on rump and upper tail-coverts narrower and long; forehead gingery, and lores greyish; ear coverts darker grey-buff; underparts yellow-buff, palest on belly, with fine black shaft streaks on feathers of flanks and sides of breast; underwing white; wing feathers brown with wide tawny-buff fringes; wing coverts and tertials rather like mantle; tail feathers brown with wide brown-buff fringes and shafts nearly black; upper mandible dark horn with pale tip and cutting edge, and lower mandible pinkish-horn with grey tip; legs pinkish-flesh, feet yellower; iris brown; three rictal bristles.

Weights (gm) and measurements (mm) of the ringed birds were:

Date	Ring No.	Wing	Bill	Tarsus	Tail	Weight
14 Aug	HX86510	64	12½	21	49	10.2
15 Aug	HX86515	61	13½	21	46	11.9
15 Aug	HX86516	64	13	19	43	10.1
16 Aug	HX86524	64	13	21	49	12.2

All four had the third primary emarginated on the outer web, and the wing formulae, in the same order as above, were:

1st	2nd	3rd	4th	5th	6th	7th	8th
from primary coverts	from third primary - longest in each bird						
—4	—½	—	—2	—5	—8	—10	—12
—2	—	—	—1½	—5	—7	—9	—11
—3	—1	—	—1½	—5	—7	—9	—11
—3	—1	—	—2½	—6	—8	—11	—12½

R. H. DENNIS.

For most of the first half of August 1969 the weather in Shetland was dominated by high pressure over Scandinavia and the Continent, giving mild fine weather with the wind mostly between south and east. Though there was a fair passage of waders, few passerine migrants showed up until about the 12th, when a trickle of smaller birds included Barred, Garden, Willow, Icterine and Wood Warblers. On the 17th I spent the day on Out Skerries, where I found a scattering of most of these species plus a few Whinchats and two Fieldfares.

While walking past a field of potatoes I was attracted by an unusual bird call, a sharp, quite loud *tzak tzak* with a decided scolding quality to it. In a few moments I saw the bird's head peering from the potato shaws, and at once the clear buffish-white centre on the otherwise Sedge Warbler head told me it was an Aquatic Warbler, a species I had previously seen in Fair Isle, both in the field and in the hand.

Later with Roy Mead I had good views of the bird, including the streaked rump, and was in no doubt as to its identity. We flushed it several times and it always returned to a potato patch in preference to oats nearby. Nearly always it betrayed its presence by the hard call note, which once nearly developed into a stutter.

Description Size, general appearance and behaviour similar to Sedge Warbler; general colour warm brown above, with quite prominent streaking on back and rump and paler edgings to wing feathers; tail rounded and same brown with paler edgings; underparts pale buffish with faint streaking on breast; head boldly streaked, with buffish-white supercilium surmounted by dark band, the head clearly divided up centre of crown by another pale buffish-white band; bill brownish; legs pale.

I can find no reference to this species in Shetland except at Fair Isle.

R. J. TULLOCH.

(Aquatic Warblers have been noted previously in Scotland between 11th August and 4th (once 23rd) October in 11 years since 1914, nine times at Fair Isle (*Fair Isle and its Birds; Brit. Birds* 59: 294) and six times at the Isle of May (*The Isle of May; Scot. Birds* 1: 356, 357; 4: 356; 5: 10), but no more than three birds in any year, and only in 1956 and 1960 at both islands in the same autumn.—ED.)

Water Pipits in Scotland

On 31st March 1968 I had brief views of a bird which I thought was a Water Pipit *Anthus s. spinoletta* on the grassy bank of the Peffer Burn at Aberlady Bay, East Lothian. It was larger than nearby Meadow Pipits and noticeably grey-brown on the mantle ("very grey upperparts"), with a prominent whitish superciliary, and very pale off-white underparts showing little or no streaking. The legs and outer tail feathers were not seen well. It gave a single *wheet* or *tseep* call, quite loud, in flight. There was a strong southwest movement of Meadow Pipits from a northeast or easterly direction at Aberlady that day and on the coast as I walked towards Fidra; the birds were flying low into a moderate SW wind.

A week later on 7th April I had much better views of the bird on the muddy and grassy banks of this small tidal burn 10 yards from the road. It was rather shy, not allowing me to approach closer than 20 yards. It fed on the mud, once close to a Pied Wagtail, which chased it away. The pipit seemed to flick its wings as it made short flights, so that it appeared to flutter from one place to another. I noted its very pale general appearance at a distance, especially about the head; grey-brown on mantle; darker tail with white outer feathers; two pale wing-bars; off-white breast and belly, even paler on throat, with no sign of any streaking; grey-white on sides of neck and breast; eyestripe prominent; legs apparently dark; single call note.

I know the Water Pipit well from winter and spring observations in Somerset, and also at a sewage farm in Berlin, and as a breeding species in the French Alps.

MICHAEL G. WILSON.

On 31st March 1969 I spent about an hour watching and taking notes on a pipit on the shore between the Aberlady Bay sandspit and Gullane Point. It was feeding among driftwood and on the tideline as I watched it at distances down to 20 yards. It was very wary, not allowing a close approach, and when flushed it invariably called—the same syllabification as a Rock Pipit *A. s. petrosus* but noticeably higher pitched, less flat and more drawn out. It was clearly attached to this stretch of beach, only leaving it once or twice to double back high over the sand dunes, and soon returning to the same place.

It first attracted attention by its very pale appearance, with grey head, dark cheek and pale eyestripe, plus pinkish breast, reminiscent of a Wheatear, and in some ways of a

Yellow Wagtail. The following description is compiled from my notes:

> Size and shape as Rock Pipit in flight but seemed slightly longer and slimmer on ground; rather long bill and steep forehead; crown, forehead and nape grey-brown, slightly greyer than back; prominent off-white curved supercilium, noticeable from more than 20 yards even without binoculars; cheeks and ear coverts darker; back and wings pale grey-brown with a few faint darker streaks, very hard to see; wings perhaps slightly darker; lesser and median coverts tipped off-white, forming two conspicuous bars on closed wing; prominent pale patch on closed primaries; tail dark with off-white outer feathers, much paler than Rock Pipit but not pure white; chin grey-white; breast pale grey with patches of faint streaking on either side of upper breast, joined by very thin line of streaks; flanks with a few rather heavy streaks; delicate pinkish flush on breast, very obvious from side but not from front; belly white; legs apparently quite black.

I spent about half an hour getting good views of the tail against various backgrounds, since I understood that this was an important racial distinction. Though the outer feathers often appeared white in flight, careful watching confirmed that they were distinctly grey, but much whiter than a Rock Pipit's; I did not note the extent of the white. From this I tentatively identified the bird as a Scandinavian Rock Pipit *A. s. littoralis*, which the habitat tended to confirm.

MURDO A. MACDONALD.

On 2nd April 1969 Paul Johnston and I were at the sandspit at Aberlady Bay at about 7 a.m. and located what was almost certainly the same pipit seen by M. A. Macdonald two days earlier.

It was calling *seep seep seep seep* from the ground, reminiscent of the song flight of British pipits. The first thing to strike us was the pale rosy-buff colour of the breast, merging into a whitish area on the throat and chin. When the bird faced us a small area of darkish spots was noted bunched together in the middle of the breast, but this was not visible from the side. This pattern differed from that noted by M. A. Macdonald. and the way the feathers were lying may have affected the appearance of the darkish markings. A quite noticeable whitish stripe ran back from just above the eye towards the ear coverts. The pale chin and throat reminded us of a Whitethroat.

We noted the head and back as fairly uniform brownish grey, more brown than grey; but Alan Leitch, who saw the bird later, in sunlight, thought the head and back were distinctly more grey than brown. On the ground the outer tail feathers could not be seen, but in flight they were distinctly white. The wings appeared to be slightly darker than the back and there were two wing-bars. Bill and legs seemed to

be dark brown. When flushed the bird flew up with a *seep* like a Meadow Pipit and landed on rocks near Gullane Point. When flushed again it flew back to the original spot.

I examined specimens of the various races of Rock Pipit in the Royal Scottish Museum. The Water Pipits were greyish on the back and had the whole outer web of the outer tail feathers white; Scandinavian Rock Pipits (none of them in spring plumage) had a conspicuous oblong patch of white near the tip of the outer web of these feathers, shading to smoke-grey further up the feathers, but showed almost as much white as a Water Pipit when the tails were slightly spread out.

The brownish back of our bird and the seashore habitat suggested that it was a Scandinavian Rock Pipit *A. s. littoralis*.

R. MACGREGOR.

(On the best current assessment both the 1968 and 1969 birds are thought to be Water Pipits *A. s. spinoletta*, but it is possible that revised criteria based on further study in the field may upset this judgment in the future, especially as dates and place are at least equally suitable for Scandinavian Rock Pipits *A. s. littoralis*. Separating the two races in the field is not easy, and helpful published information is hard to find. The Water Pipit *A. s. spinoletta* is a central European mountain bird (a different race from the American Water Pipit *A. s. rubescens*) whereas *littoralis* and *petrosus* are coastal birds. In recent years, *spinoletta* has been found to winter in small numbers (over 80 birds in some winters) in lowland England, mainly in freshwater habitats, usually inland but often coastal; but there have been no definite records for Scotland, whereas *littoralis* is known to occur and probably does so commonly.

We referred both records to K. Williamson, author in 1965 of 'Moult and its relation to taxonomy in Rock and Water Pipits' (*Brit. Birds* 58: 493-504), and to I. G. Johnson, author and investigator of 'Water Pipits wintering on watercress beds' (*Brit. Birds* 59: 552-554). They accept the 1968 bird as *spinoletta*, rather than *littoralis*, on the basis of the off-white breast and belly with no sign of any streaking, the whitish eyestripe, the two pale wing-bars, and the observer's considerable experience of the race. The March 1969 bird is accepted as *spinoletta* on the colour of the underparts (no *littoralis* has white belly or pale grey breast, but always yellowish unless in breeding plumage, when it certainly does not have a delicate pinkish flush), and also the pattern of streaking and the conspicuous eyestripe and wing-bars; evidence of the tail feathers is not considered conclusive in

this record. Of presumably the same bird in April 1969 they say that no *littoralis* has so few streaks and that the wing-bars and eyestripe as well as the colour of the underparts and the pure white outer tail feathers all confirm *spinoletta*.

There are two records probably of *littoralis* at Fair Isle in autumn (November), when it is virtually indistinguishable from the local *petrosus* (*Brit. Birds* 58: 499), and there is one record of a pullus ringed in Norway and recovered in Fife in midwinter which must be referable to this race (*Brit. Birds* 55: 554). Spring records of *littoralis* have been published for Fair Isle 16th May 1911 (*Studies in Bird Migration* 2: 123), Orkney 9th May 1912 (*Rep. Scot. Orn.* 1912: 43), Fair Isle 22nd May 1912 (*Scot. Nat.* 1913: 7) and 24th-25th May 1951 (*Fair Isle Bird Obs. Bull.* 1(2): 4), Fife 14th March 1965 (*Scot. Birds* 4: 100), and the Isle of May 27th May 1965 (*Scot. Birds* 4: 100); one record of *spinoletta* in Shetland 8th-9th May 1950 (*Birds and Mammals of Shetland* p. 138) was claimed but not fully accepted at the time (*Scot. Nat.* 1957: 42). Although reassessment of these records may be desirable it seems unduly risky to attempt it in the present state of knowledge.

I. G. Johnson most kindly showed us his preliminary draft of a paper on Water Pipits, and we are grateful to him and K. Williamson for help with these records.—ED.)

Lesser Grey Shrike in North Argyll

On 1st June 1969 my wife and I identified a Lesser Grey Shrike on the edge of Kentra Moss, an extensive peat bog by the River Shiel on the Ardnamurchan peninsula. The shrike outline was obvious as it sat on a gorse bush, and in flight white markings showed on the wings. We took particular note of the solid black band through the eye extending broadly across the forehead with no white edging above it. The bird had also a noticeable rosy flush on the breast.

R. E. DIX.

(This is the first record for the Argyll faunal area.—ED.)

Slate-coloured Junco in Shetland

While looking for spring migrants on Out Skerries on 7th May 1969 I came on a small greyish bird with white outer tail feathers. These were extremely conspicuous, especially when the bird flicked its tail, which it did quite often. As it was entirely new to me I took detailed notes, from which I identified it as a Slate-coloured Junco. It fed on small insects and seeds in the short grass, where it spent most of the day, and also among boulders on the shore. When alarmed it

called a sharp *tchick*, and when flushed *tchick-tchick*. It was in immaculate plumage and flew strongly for distances up to 300 yards. I was unable to catch it, and next day it had gone.

Description. Slightly larger than Pied Flycatcher (present), but appeared slimmer, with tail longer in proportion. Dark grey head noticeably rounded, with pale pink finch bill; mantle, back, rump and centre of tail also dark grey; outer tail feathers white and extremely conspicuous; throat, neck and upper breast dark grey, sharply contrasted with pure white on lower breast and belly; under tail-coverts and flanks dark grey; wing coverts grey and flight feathers dull brownish (looking grey in certain lights when seen from a distance); legs concealed by grass but thought to be pale flesh.

I. S. ROBERTSON.

(As this species does escape from captivity one may only speculate whether this bird found its way naturally across the Atlantic; there is no evidence to the contrary, and some in favour. Records from Foula at the same time of year—1st May 1966 (*Brit. Birds* 60: 332) and 10th May 1967 (*Brit. Birds* 61: 358)—have not yet been published in detail as we have for some time hoped to get a full account of recent observations there. These are the only Scottish records.—ED.)

Obituary

LEN FULLERTON

Many members of the SOC will remember the cover designs of *Scottish Birds* before the Crested Tit was adopted. Examples of these were the pair of Red-breasted Mergansers in flight, the Whimbrel and Leach's Petrel. They were the work of Len Fullerton, who died suddenly on 16th August 1969, aged 60.

Len was a free-lance artist and a dedicated naturalist. His lifelong interest in birds began at an early age to expand to include the various environments in which the birds were found, and he became extremely knowledgeable about mammals and about plants and insect life. Although ornithology remained his consuming interest, these other branches of natural history were represented in his artistic work. A great part of this work was concerned with book illustration, of which members are likely to have seen examples. His presentation was simple, natural and appealing.

He contributed a weekly illustrated feature 'Seen out of Doors' to the *Bulletin* for ten years. This series evoked considerable interest among the readers and led to constant correspondence with schools and with individuals.

From 1960 till his death, Len gave lectures in Dundee Museum on 'Field Studies' to adult education classes, and when Dundee Museum Club was founded in 1955 he was the

natural choice for giving talks to create interest in the environmental side of the club's activities.

He was Honorary Warden of Tentsmuir for some years, and in that capacity conducted many groups from schools and universities round Tentsmuir. He was for many years an invaluable member of Dundee Naturalists' Society, of which he was president for several years.

Len's greatest service, for which he will be gratefully remembered by so many, was in communication. He was in constant demand as a lecturer, particularly on birds, in many parts of Scotland. He was equally popular with young people and with adults. He had the gift, not only of arousing intense interest, but of communicating his own enthusiasm to others. His warmth and friendliness evoked an instant response from all those to whom he gave his time so ungrudgingly. His method of presentation was simple and informal and the interest of his material was enhanced by the personal appeal of the man himself.

In the course of his life he made innumerable friends who owed the kindling of their interest in, and concern for their natural environment, to him. Evidence of this is the fact that a committee has been formed to decide on a suitable memorial to him, and already the memorial fund has received generous contributions.

Our sympathy is extended to his widow and his three daughters.

F. D. GRAHAM.

Enquiries

Operation Seafarer. Very good coverage of both the Scottish mainland and island coasts was achieved by the many observers who made such stalwart efforts during the 1969 breeding season. However, for one reason or other, some sections could not be covered, and the Seabird Group hopes that arrangements can be made for these to be visited during 1970. Some of these areas may not contain many seabirds, but they still have to be surveyed. At the same time as looking for seabirds, an observer can of course obtain valuable information for the BTO Atlas project.

Among the areas for which observers are still required are parts of Shetland, chiefly on Mainland, and here one's own transport is essential. In the Outer Hebrides small sections of coast in the south of Lewis, Harris and South Uist still require examination. Of the mainland, still to be covered there are small sections in Sutherland, Wester Ross, West Inverness and Argyll. A number of islands, mostly small, also require attention during 1970 in order to complete the survey. Among the larger islands where more work is needed are South Rona

and Raasay, Coll, Jura and small sections of Skye.

As in 1969, the Seabird Group will be giving small grants to observers working in remote regions where travel expenses are high. The Group is greatly indebted to the Scottish Ornithologists' Club for a generous grant of £100 towards observers' grants in Scotland during 1970.

Anyone having outstanding records for 1969, or who can assist in the completion of the Seafarer survey during 1970, is asked to write at an early date to the Seafarer organiser, David Saunders, Tom the Keeper's, Marloes, Haverfordwest, Pembrokeshire (tel. Dale 202).

Photographs of seabird colonies. The Seabird Group is anxious to obtain copies of photographs of seabird breeding colonies to provide a permanent record of numbers present during the period of the "Seafarer" census in 1969, and to provide evidence of change. Besides this modern material old photographs would also be most welcome even if the date is not exactly known. Those which show a whole colony or an easily definable part of it are most valuable, especially if full details of the year and locality were recorded, but unknown sites may be identifiable if they show distinguishing features. If negatives, prints or transparencies are sent for examination they will be copied where appropriate and returned to their owner as soon as possible. Items for examination should be sent to the Seafarer organiser, David Saunders (address as above).

THE SCOTTISH ORNITHOLOGISTS' CLUB

SUBSCRIPTIONS AND COVENANTS

An Important Notice

Members have been notified (*Scottish Birds* 5: 478) that, owing to rising costs, the Club decided at the Annual General Meeting on 25th October 1969 to increase the annual subscription rates as follows—Membership, from 25s to 40s; Joint Membership, from 40s to 60s; Junior Membership, from 7/6d to 10s. Life Membership subscriptions remain at £50 and £75. For *Scottish Birds* alone the subscription is now 40s.

The new rates, which were applicable to all new Members from 1st November 1969, will apply to existing Members at the start of the new Session on 1st October 1970.

Banker's Orders All Members who pay their subscription by Banker's Order will receive a new form, which they will be asked to complete at the new subscription rate. This form will automatically cancel any previous order held by the Bank, and it is hoped by this means to make the change with the minimum of trouble to our Members.

Deeds of Covenant Members who have signed a Deed of Covenant which has not completed the seven years by October 1970, will be asked If they will consider signing a new Deed to replace the old one, thus enabling the Club to reclaim Tax on the whole of the new subscription instead of on part only. The Inland Revenue office has confirmed that a new Deed can replace the earlier one, and if Members are willing to do this, the income will be of immense help to the Club.

We would like, once again, to invite all Members who pay income tax at the full rate to sign a Deed of Covenant, to help augment our income at no extra cost to themselves. We can reclaim 28/1d on the 40s subscription and 42/2d on the joint subscription of 60s. Please write and ask us for a Covenant form.

Because of the considerable work involved in making these changes, the forms are being sent out early for completion. It will be most helpful if Members will kindly return them to us as soon as possible.

WEEKEND EXCURSION TO SPEYSIDE

A weekend excursion has been arranged from Friday 22nd May to Sunday 24th May 1970. The local organisers are Douglas Weir and James MacGeoch.

Special weekend terms have been arranged with the Cairngorm Hotel, Aviemore (opposite the station), as follows :

Friday, 22nd—Bed and Breakfast	£2 0 0
Saturday 23rd—Packed Lunch, Dinner, Bed & Breakfast	3 5 0
Sunday, 24th—Packed Lunch	0 7 6
	£5 12 6

Service charge 10% extra.

Members should inform the Hotel in advance if they require dinner on Friday night (extra). Soup and Salad can be provided (extra) for those arriving late by car or travelling on the train from the South due at Aviemore at 8.38 p.m. Please let the Management know your requirements when booking.

Members may bring guests and should book direct with the Manager, Cairngorm Hotel, Aviemore, Inverness-shire (tel. 233), notifying him that they are attending the Club excursion. Information about alternative accommodation can be obtained by writing to James MacGeoch, c/o Spey Valley Tourist Organisation, Aviemore.

Excursions to the major wildlife habitats in the Cairngorms and Speyside will take place on Saturday and Sunday, and ornithological talks on research and conservation will be given in the Cairngorm Hotel ballroom on Saturday evening. A show of slides will be given on Friday evening.

SUMMER EXCURSIONS

Important Notes

1. Members may attend excursions of any Branch in addition to those arranged by the Branch they attend regularly.

2. Where transport is by private car please inform the organisers if you can bring a car and how many spare seats are available. All petrol expenses will be shared.

3. Please inform the organiser in good time if you are prevented from attending an excursion where special hire of boats or buses is involved. Failure to turn up may mean you are asked to pay for the place to avoid additional expense for the rest of the party.

4. Please bring meals as indicated (in brackets) below.

ABERDEEN

For all excursions, please notify Miss F. J. Greig, 9 Ashgrove Road, Aberdeen, AB2 5AE (tel. 40241, Ext. Old Aberdeen 342, 9 a.m.-5 p.m.), one week in advance.

May. CULBIN FOREST. It is hoped to arrange a visit one Sunday in May. Please contact Miss Greig for details.

Sunday 23rd August. YTHAN ESTUARY AND LOCHS. Meet Culterty 10.30 a.m. (lunch).

Sunday 18th October. LOCH STRATHBEG (lunch).

AYR

Saturday 2nd May. CULZEAN CASTLE, MAYBOLE (by kind permission of the National Trust for Scotland. Leader: S. L. Hunter. Meet Wellington Square, Ayr, 2 p.m. or car park, Culzean Castle, 2.30 p.m. (tea).

Sunday 31st May. DRUMLANRIG CASTLE, THORNHILL, DUMFRIES (by kind permission of the Duke of Buccleuch). Meet Wellington Square, Ayr, 1 p.m. or entrance to Queens Drive (off main road), Drumlanrig Castle, 2.30 p.m. (tea). Contact Dr M. E. Castle, 9 Finlas Avenue, Ayr (tel. Alloway 41828) if further information required.

Saturday 6th June. AILSA CRAIG. Leader: T. B. Kay. Meet Wellington Square, Ayr, 9 a.m. or Girvan Harbour 10 a.m. Boat fare about £1.10.0. Members must book by 30th May at the latest. Applications to Dr M. E. Castle (address above) (lunch).

Wednesday 24th June. AUCHINCRUIVE ESTATE (by kind permission of Professor J. S. Hall, The West of Scotland Agricultural College). Leader: Dr M. E. Castle. Meet at the drive near the bus shelter at the main gates of the College on the Mauchline road, 7 p.m. prompt.

Saturday 29th August. FAIRLIE FLATS. Leader: R. M. Ramage. Meet Wellington Square, Ayr, 1 p.m., or on road in front of Hunterston Nuclear Power Station 2 p.m. (tea).

Saturday 12th September. LOCH OF THE LOWES, NEW CUMNOCK. Leader: Dr J. Begg. Meet Wellington Square, Ayr, 1 p.m. (tea).

DUMFRIES

Saturday 16th May. GILCHRISTLAND, CLOSEBURN, by kind permission of Sir Arthur B. Duncan, who will personally lead the excursion. Meet Ewart Library, Dumfries, 2 p.m.

Sunday 5th July. MULL OF GALLOWAY. Leader: A. D. Watson. Meet Ewart Library, Dumfries, 9.30 a.m.

Sunday 13th September. ABERLADY BAY. Leader: R. T. Smith. Meet Ewart Library, Dumfries, 9 a.m.

DUNDEE

All excursions by private cars, leaving City Square, Dundee, 9 a.m. except for 15th/18th May.

Friday 15th to Monday 18th May. WHITEBRIDGE HOTEL, INVERNESSSHIRE. Weekend excursion. Details can be obtained from the Branch Secretary, Miss J. Stirling, 2 Johnston Avenue, Dundee.

Sunday 31st May. KILCONQUHAR LOCH.

Sunday 21st June. AMULREE DISTRICT for Blackcock.

Sunday 12th July. YTHAN ESTUARY.

Sunday 23rd August. MONTROSE BASIN AND SCURDYNESS.

Sunday 27th September. FIFE NESS.

EDINBURGH

Saturday 25th April. ABERLADY BAY NATURE RESERVE. Leader: K. S. Macgregor. Meet Timber Bridge 2.30 p.m. (tea).

Sunday 26th April. FLANDERS MOSS AND ENDRICK MARSHES. Leader: John Murray. Excursion by private bus leaving Edinburgh from square behind National Gallery at 9.30 a.m., returning 7.30 p.m. approx. (lunch). Stop for high tea on return journey. Cost of bus 13s approx. and high tea 10s approx. Application by 4th April to John Murray, Royal Scottish Museum, Chambers Street, Edinburgh EH1 1JF.

Saturday 6th June. ISLE OF MAY (numbers limited to 24). Leader: Alastair Macdonald. Excursion by private cars. Meet at Middle Pier, Anstruther, 10.45 a.m. prompt (lunch and tea). Cost of boat approx. 15s. Application by 30th May to J. A. Stewart (address above) stating number of seats available and required.

Sunday 7th June. THE HIRSEL COLDSTREAM (by kind permission of Sir Alec Douglas-Home). Excursion by private cars, leaving Edinburgh from square behind National Gallery 10.30 a.m. for Hirsel at 12 noon (lunch and tea). Applications by 23rd May to J. A. Stewart, 109 Greenbank Crescent, Edinburgh, EH10 5TA (tel. 031-447 4210), stating number of seats available and required.

Saturday 13th June. ST ABBS HEAD. Joint excursion with Scottish Wildlife Trust. Leader: L. W. G. Alexander. Excursion by private cars. Meet at St Abbs Head at 1 p.m. (lunch and tea). Applications by 30th May to L. W. G. Alexander, 3 Barnton Gardens, Edinburgh, EH4 6AF, stating number of seats available or required.

Saturday 11th July. BASS ROCK (by kind permission of Sir Hew Hamilton-Dalrymple). Leader: J. H. B. Munro. Numbers limited to 12. Boat leaves North Berwick Harbour 2.30 p.m. prompt, returning about 7 p.m. (tea). Cost of boat approx. 12s. Applications by 27th June to Mrs J. H. B. Munro, 9 Capelaw Road, Edinburgh, EH13 0HG, (tel. 031-441 2381).

Saturday 19th September. ABERLADY BAY NATURE RESERVE. Leader: K. S. Macgregor. Meet Timber Bridge 2.30 p.m. (tea).

GLASGOW

Saturday 6th June. COATBRIDGE DISTRICT. Survey of area for BTO Atlas (Square NS 76). Applications by 23rd May (with s.a.e.) to Dennis Norden, 1240 Argyle Street, Glasgow C.3. Please state if car seats available.

Saturday 13th June. AILSA CRAIG. Boat limited to 12 passengers. Leave Girvan Harbour 10.30 a.m. (lunch and tea). Applications (with s.ae.) by 30th May to John Mitchell, 22 Muirpark Way, Drymen, by Glasgow. Boat fare £1.10.0 to be sent with application.

Saturday 20th June. LOCHWINNOCH. Survey of area for BTO Atlas (Square NS35). Applications (with s.a.e.) by 6th June to Wallace H. Wild, Dundaraich Cottage, Bridge of Weir, Renfrewshire. Please state if spare car seats available.

Sunday 21st June. BALLANTRAE. Applications (with s.a.e.) by 6th June to Ronald Jeffrey, 16 Greenlaw Avenue, Paisley, Renfrewshire. Please state if car seats available.

Saturday 27th June. HORSE ISLAND (by kind permission of the RSPB). Boat leaves Ardrossan 2.30 p.m. (tea). Application (with s.a.e) by 10th June to Lindsay Ogilvy, 15 Broomley Drive, Giffnock, Glasgow. Boat fare 5s to be sent with application.

Sunday 28th June. BASS ROCK (by kind permission of Sir Hew Hamilton-Dalrymple). Boats leave North Berwick at 12.30 and 1.30 p.m. (lunch and tea). Applications (with s.a.e.) to Muriel Draper, 6 Southview Drive, Blanefield, by Glasgow. Boat fare 14s to be sent with application.

INVERNESS

Excursions by private car except where shown. Applications to Outings Secretary, Mrs W. Morrison, 83 Dochfour Drive, Inverness (tel. 32666).

Sunday 10th May. CROMARTY AND THE LUTON. Leader: C. G. Headlam. Leave Station Square, Inverness, 10 a.m. (lunch and tea). Boat to carry 12 will be hired for trip to sea cliffs. Remainder ashore.

Friday 22nd to Sunday 24th May. SPEYSIDE WEEKEND. See special notice above.

Saturday 6th June .SPEYSIDE. Joint European Conservation Year Meeting with Inverness Field Club and Inverness Botany Group. Arrange-

ments with Nature Conservancy, Aviemore. Coaches will leave Inverness approx. 9 a.m. (lunch and tea). Details later from Outings Secretary.

Sunday 14th June. NATIONAL TRUST FOR SCOTLAND PROPERTY, TORRIDON. Leader: Lea MacNally, Trust Warden. Meet at Station Square, Inverness, 9.30 a.m. (lunch and tea).

ST ANDREWS

Applications, not later than one week before each excursion, to Miss M. M. Spires, 4 Kinburn Place, St Andrews (tel. 033-481 3523).

Saturday 9th May. KILCONQUHAR LOCH (by kind permission of Elie Estates). Meet North Lodge, 2.30 p.m.

Sunday 7th June. ISLE OF MAY. Numbers limited. Excursion Members will be notified of the time of departure from Anstruther harbour (lunch and tea).

Saturday 13th June. RED HEAD. Cars leave St Andrews bus station 2 p.m.

Sunday 21st June. AN ANGUS GLEN. Cars leave St Andrews bus station 9.30 a.m. (lunch and tea).

Saturday 4th July. TENTSMUIR. Cars leave St Andrews bus station 2 p.m.

STIRLING

Applications, giving as much notice as possible, to Henry Robb, 27 Victoria Place, Stirling (tel. 0786 3618).

Saturday 25th April. TROSSACHS. BTO Atlas. Meet Albert Hall, Stirling, 9 a.m. or Thornhill Cross 9.20 a.m.

Saturday 9th May. LOCH LINTRATHEN, LOCH RESCOBIE AND ARBROATH CLIFFS. Meet Albert Hall, Stirling, 9.30 a.m.

Sunday 17th May. THE BRAES, SLAMANNAN. BTO Atlas. Meet Albert Hall, Stirling, 9 a.m. or Falkirk Ice Rink (Falkirk-Grangemouth road) 9.30 a.m.

Saturday 13th June. CALLANDER. BTO Atlas. Meet Albert Hall, Stirling, 9 a.m. or The Square, Callander, 9.30 a.m.

Saturday 27th June. LOCH VENNACHER. BTO Atlas. Meet Albert Hall, Stirling, 9 a.m. or Thornhill Cross 9.20 a.m.

Saturday 25th July. CALLANDER. BTO Atlas. Meet Albert Hall, Stirling, 9 a.m. or The Square, Callander, 9.30 a.m.

Wednesday 19th August. SKINFLATS (waders). Meet Dutch Inn, Skinflats, 7 p.m.

GLASGOW BRANCH BUFFET SUPPER

An informal social evening and buffet supper is to be held by the Glasgow Branch on Monday 23rd March 1970, at 7.30 p.m., in the Woolfson Hall, Garscube Estate, Maryhill Road, Glasgow (by kind permission of the Warden). Tickets, price 12/6d, obtainable from the Branch Secretary, Mrs Muriel Draper, 6 Southview Drive, Blanefield, by Glasgow, by 17th March.

EDINBURGH BRANCH ANNUAL DINNER

The Annual Dinner of the Edinburgh Branch will be held in the Fellows Restaurant, Zoological Park, Corstorphine, Edinburgh, on Wednesday, 15th April 1970, at 7 for 7.30 p.m. Tickets 32/6d available from John Murray, Royal Scottish Museum, Chambers Street, Edinburgh, EH1 1JF, by 4th April 1970. Numbers limited.

FALSTERBO BIRD STATION, SWEDEN

Members visiting Sweden may be interested to know about the Falsterbo Bird Station. Falsterbo is situated at the most southwesterly point of the Scandinavian peninsula, and is the scene of a unique raptor migration each autumn. Accommodation is available at the Bird Station at SKr.8 per night, with reductions for Members of the Swedish Ornithological Society. There are cooking facilities at the station and restaurants nearby. All enquiries and bookings should be sent to Gunnar Roos, Falkvagen 21, S-230 10 Skanor, Sweden.

NOTICE TO CONTRIBUTORS

1. General notes (not of sufficient importance to be published on their own as Short Notes) should be sent to the appropriate local recorders for inclusion in their summary for the annual Scottish Bird Report, not to the editor. A list of local recorders is published from time to time, but in cases of doubt the editor will be glad to forward notes to the right person. All other material should be sent to the editor, Andrew T. Macmillan, 12 Abinger Gardens, Edinburgh 12. Attention to the following points greatly simplifies the work of producing the journal and is much appreciated.

2. If not sent earlier, all general notes for January to October each year should be sent to the local recorders early in November, and any for November and December should be sent at the beginning of January. In addition, local recorders will be glad to have brief reports on matters of special current interest at the end of March, June, September and December for the journal. All other material should of course be sent as soon as it is ready.

3. All contributions should be on one side of the paper only. Papers, especially, should be typed if possible, with double spacing. Proofs will normally be sent to authors of papers, but not of shorter items. Such proofs should be returned without delay. If alterations are made at this stage it may be necessary to ask the author to bear the cost.

4. Authors of full-length papers who want copies for their own use MUST ASK FOR THESE when returning the proofs. If requested we will supply 25 free copies of the issue in which the paper is published. Reprints can be obtained but a charge will be made for these.

5. Particular care should be taken to avoid mistakes in lists of references and to lay them out in the following way, italics being indicated where appropriate by underlining.

DICK, G. & POTTER, J. 1960. Goshawk in East Stirling. *Scot. Birds* 1:329.

EGGELING, W. J. 1960. *The Isle of May.* Edinburgh and London.

6. English names should follow *The Handbook of British Birds* with the alterations detailed in *British Birds* in January 1953 (46:2-3) and January 1956 (49:5). Initial capitals are used for names of species (*e.g.* Blue Tit, Long-tailed Tit) but not for group names (*e.g.* diving ducks, tits). Scientific names should be used sparingly (see editorial *Scottish Birds* 2:1-3) and follow the 1952 B.O.U. *Check-List of the Birds of Great Britain and Ireland* with the changes recommended in 1956 by the Taxonomic Sub-Committee (*Ibis* 98:158-68), and the 1957 decisions of the International Commission on Zoological Nomenclature (*Ibis* 99:369). When used with the English names they should follow them, underlined to indicate italics, and with no surrounding brackets.

7. Dates should normally be in the form "1st January 1962", with no commas round the year. Old fashioned conventions should be avoided—*e.g.* use Arabic numerals rather than Roman, and avoid unnecessary full stops after abbreviations such as "Dr" and "St".

8. Tables must be designed to fit into the page, preferably not sideways, and be self-explanatory.

9. Headings and sub-headings should not be underlined as this may lead the printer to use the wrong type.

10. Illustrations of any kind are welcomed. Drawings and figures should be up to twice the size they will finally appear, and on separate sheets from the text. They should be in Indian ink on good quality paper, with neat lettering by a skilled draughtsman. Photographs should either have a Scottish interest or illustrate contributions. They should be sharp and clear, with good contrast, and preferably large glossy prints.

WHICH BINOCULAR?

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