

LAKELAND  
ORNITHOLOGY

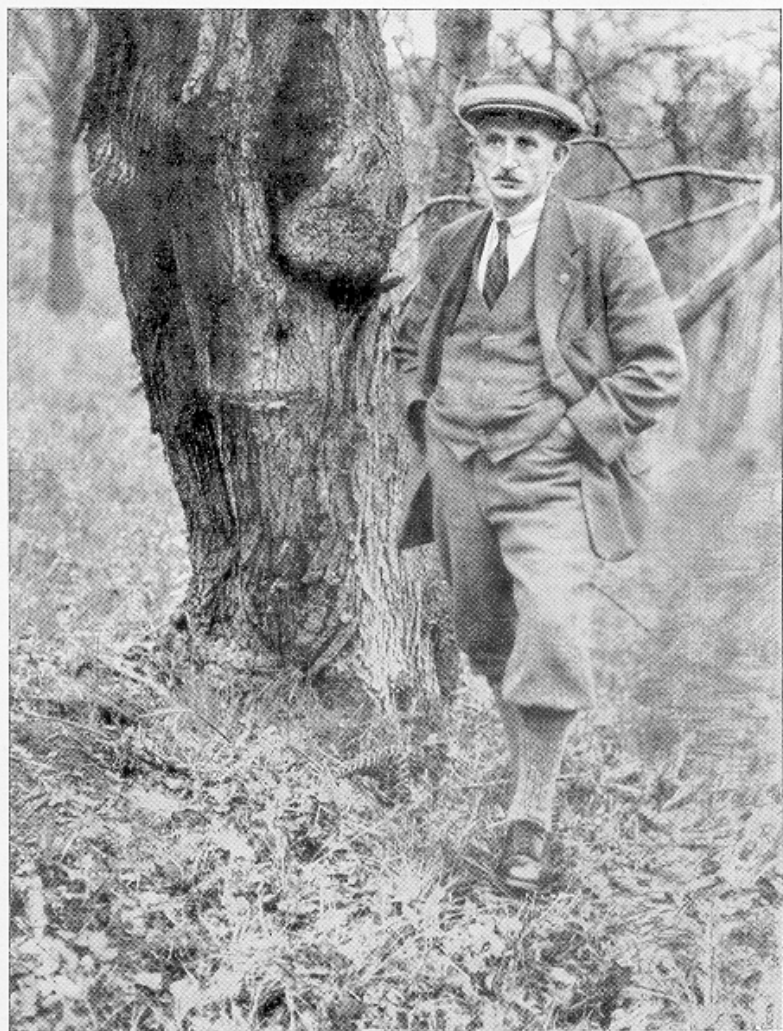
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**TOM LITTLE JOHNSTON**

# LAKELAND ORNITHOLOGY



# CARLISLE NATURAL HISTORY SOCIETY

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## LAKELAND ORNITHOLOGY.

### PREFACE

SOME further account of birds in Lakeland, drawn from all the far corners of this Faunal Area, comes together on the eve of the sixtieth anniversary of our Society, an occasion for regard. We have, still serving, the one founder member alone to see the passing of those six decades in Frank H. Day who, all that long time, has been both vital to the Society's course and pre-eminent on the insect life of the area. Those early members now gone from us, and whose work in their respective fields has come down to their successors, are to be remembered. There follows, then, an acknowledgment to the past life and work of one of the original coterie of bird enthusiasts, Tom L. Johnston, whose spirit remains a stimulating influence, particularly to those members who follow after him.

Lakeland, or Cumberland and Westmorland with Lancashire North of the Sands, has other parts greatly contrasting with the English Lake District which it includes. North of the Pennine sweep of fell and dale, there is a bleak, open moorland, one of the largest and loneliest tracts, least trodden by human foot, remaining in England. There is the industrial west, a land of coal and iron mines, of blast furnaces and slag heaps, so different from the beautiful wooded valleys of the rivers Kent, Leven, Eden and Gelt, or from the many acres of ploughland and pasture. A lengthy coastline is varied by wide sands and saltmarshes, dunes and peat mosses, and tall sandstone and lesser limestone cliffs. All these and other parts are reflected in this book on birds as, in some way or other, they are known in Lakeland.

THE EDITOR.

CARLISLE, November 1952.

## ILLUSTRATIONS

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TOM LITTLE JOHNSTON,	Frontispiece
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## TOM LITTLE JOHNSTON

1875- 1948.

Tom, the second son of James and Deborah Johnston, and born in the Cumberland village of Dalston, really and always belonged to the country. This was so even though as a young man he came to have his settled home in the City of Carlisle. The whole life of the countryside held him, if none more so than the wild birds in whose ways his interest was both deep and lasting. He had the encouragement of his brother, and together they have written a name, already known in the county's romantic past, into the annals of local natural history. Tom, then, was brought along by his elder brother Benjamin, a founder member, to one of the earliest meetings of the Carlisle Natural History Society. From that time onward, he as well enjoyed a lifelong membership with a part of it as our Society's honoured president.

Tom Johnston represents an intensely enthusiastic generation of field workers who largely built up our heritage of natural history when opportunity and means of travel were not easy, and free time was short and hard-earned. They were great walkers, well knowing their countryside. and they were ardent collectors with that sure and decisive kind of knowledge engrained by their collecting. Tom collected birds' eggs and, in his early days, tramped many long and hard miles for them, on occasion sleeping out in the open where night happened to find him. Typically, he shared interests, as for instance joining in an insect hunting expedition into the fell country, a round journey on foot of sixty odd miles.

Now and again, he went seeking birds in other parts of England, and of Scotland, Ireland and Wales, but there was no place for him like his own native Cumberland. The Solway, its sands and saltmarshes, its rough bordering with its peat mosses and patches of wild wood made his ideal hunting ground. He was the man of the birds there, and he was as one of the people. Between him and those wildfowlers extraordinary. William Nichol and James Storey, there was a brotherly bond. Jim's cottage at Anthorn was a haven for kindred spirits where Jane Storey cheerfully ministered to a continual succession of unexpected arrivals. Naturalists and wildfowlers from every part of the realm have foregathered over its peat fire. With Tom there was the difference that he was never unexpected. In a large countryside there were cottages and farms with an ever open door to him, and there the name of Tom Johnston was a password by which any friend of his received a welcome.

The Solway and its birds he scanned in all seasons and in all weathers. A combined zest for wildfowling brought him to the marshes on winter days and nights or to the stony scaurs in times of wild wind and tide. Some results appear in his accounts of changes in the wild goose throngs and in gull and tern colonies over half a century of time. A vast knowledge he had of the ways of birds under many and varied circumstances has gone with him, but there remain those writings whose value increases and the first and last of which are on birds of the Solway.

From the side of the firth he turned very often up towards that Debatable Land of old; to mossland again, set around with natural woods, and to the famed duck ponds of Netherby. William Bell, to whose skill and management these ponds owed so much of their fame, and his sons, wise in country lore, were Tom's very good friends. He had a fine comradeship in their company, and it was on their home ground, as much as in other places, that he pioneered the study of the Willow-Tit in the county. Then the woods of the Gelt drew him often and again, strongly on account of their Pied Flycatchers and Wood-Warblers whose ways he would recount from long and patient watching. Some birds enthralled him perhaps more than others. When a friend asked him his favourite, his thoughts went shoreward to light on the Dunlin. Seven nests of this bird he had found in one day he would tell, but then in nest finding he had an awareness of bird and habitat to bring success. Even the challenge of the Grasshopper-Warbler, so often accepted and always with a special pleasure, frequently enough led to his making a find.

There was a great spirit of helpfulness in Tom Johnston. Beginners and seekers he warm-heartedly advised or introduced to birds and bird haunts and they in turn were stimulated and encouraged by his frankness and enthusiasm. Towards the production of "The Birds of Lakeland", in which his long and close acquaintance with local birds is reflected, he spared himself no effort. Nor did he in any other way he could serve our Society whose president he was in 1922-23 and 1933-35, besides frequently deputising in the chair as vice-president.

There were all the long years of help he gave to the Carlisle Museum, enriched by his gift, after many another, of his entire collection of birds' eggs in 1936. He was one of the first honorary curators appointed after the establishment of the museum at Tullie House in 1893 and, latterly, he served as a co-opted member of the Public Library and Museum Committee.

He was an active supporter of the Carlisle Otter Hounds both in the field and on the Hunt Committee. During most of his time he was inclined to the social life of the village rather than that of the town. In late years he became an enthusiastic supporter of the Carlisle Veterans' Association, holding the office of registrar for a period, and occasionally giving talks to the members on birds. Enthusiasm never left! him, nor his affection for

a garden. Towards the end, he found pleasure in running a farmer friend's kitchen plot with a care and attention divided, as would be, by the Corn-Buntings and other birds on that same farm. This main thought for other people and natural wisdom and understanding were his, together with an exceedingly direct manner and very forthright mode of expression. He gathered an uncommonly large number of friends to himself, but not entirely. for by his easy way of making one known to another, he spread friendship.

Tom Johnston, whose name, simple and unadorned, meant for him such a wealth of esteem and regard, was a grand Cumbrian and a grand naturalist.

E. B.

#### WRITINGS BY HIM.

1909. The Wading Birds of the Solway. *Trans. Carlisle Nat. Hist. Soc.*, 1: 49-62.
1933. The Barnacle-Goose on the English Solway. *Trans. C.N.H.S.* 5: 67-82.
1936. Nesting Habits of the Willow-Tit in Cumberland. *British. Birds*, 29: 378-80.
1943. (With E. Blezard, M. Garnett and H. Graham). *The Birds of Lakeland*, or *Trans. C.N.H.S.*, 6.
1946. The Grey Lag-Goose in Lakeland. *Lakeland Natural History*, or *Trans. C.N.H.S.*, 7: 75-87.

In this present work. The Greater Black-backed Gull on the Cumberland Solway.

## THE GREATER BLACK-BACKED GULL ON THE CUMBERLAND SOLWAY

By TOM L. JOHNSTON.

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Dr. John Heysham in his "Catalogue of Cumberland Animals" (Hutchinson's *History of Cumberland*, 1793-4) simply lists the Greater Black-backed Gull *Larus marinus* under the old and once commonly used name of Wagel. Accounts of it as a breeding bird do not appear until far on into the nineteenth century. During the latter part of that century, and in the course of the present, the status of this gull viewed as a nesting species and, in recent years especially, as a winter-visitor, has shown considerable changes.

Macpherson and Duckworth in *The Birds of Cumberland*, 1886, give about fifteen pairs as nesting, in 1885, on Bowness and Wedholme flows in the neighbourhood of the Solway, and that adult and immature birds were generally distributed on our coastline in winter.

Macpherson in his *Fauna of Lakeland*, 1892, records the Greater Black-back, never numerous in the area, as much rarer since 1885, as having apparently ceased to nest on Wedholme, and that the once flourishing colony on a neighbouring moss had been reduced to two or three pairs. This neighbouring moss is Bowness.

Wedholme Flow was a breeding haunt for many years after the time of publication of the *Fauna*. This I have on the authority of my old and esteemed friend and companion, Jim Storey of Anthorn, who was born in 1865. He knew the flow intimately from his boyhood days onward and was sure of locating two or three breeding pairs of the big gulls annually over a long period. A nest containing one egg was found there by Ritson Graham in about 1920.

There is no mention by Macpherson of Drumburgh Moss, which also for long years was known to Jim Storey as a breeding haunt, and where I myself saw one to two pairs, and then one only, over a number of years. A pair were present on Glasson Moss in 1924 and in 1934. Eggs found there by W. French and E. Blezard in 1924 were all pale blue and very sparsely marked.

The fluctuations in the breeding population of Greater Black-backs are remarkable and their causes apparently varied. In the opinion of Jim Storey, most of the young ones were killed and eaten by foxes before they were able to fly. The fledging period being about seven weeks, there was ample time for much harm to be done. Although I have found and ringed a number of young, I have never found one advanced in feathering. Foxes

are certainly very plentiful on the mosses where deep heather and gorse afford good cover. I have seen them often enough and have heard of a well-grown litter found in an open den among heather and not far from where gulls were nesting. An instance in which an adult Greater Black-back had very evidently been worried on the nest while brooding eggs was experienced by E. Blezard in 1934.

Another factor to keep the gulls in check are the destructive fires which occur on the mosses from time to time, and often at the height of the breeding season. The adult birds can escape but the nests, eggs and young are all destroyed. I remember arriving with a friend on Bowness Moss, one day during the breeding season of 1927, to find the whole extent on fire. Revisiting a Sheld-Duck's nest, found the previous week in deep heather at the edge of the moss, we saw the sitting bird to have been burnt to death on her eggs. This fire burnt the moss absolutely bare of cover and was the means of banishing all those Lesser Black-backed Gulls which apparently went to swell the colony on Rockcliffe Marsh in 1928.

#### FOOD.

Food consists largely of carrion, fish flesh or fowl, but live prey is taken at every opportunity. When Greater Black-backs are attracted by the young of domestic birds they are a real nuisance and a menace to the stock. Some few years ago, the Anthorn farmers and Jim Storey were rapidly losing ducklings through no apparent cause until Jim noticed a Greater Black-back swoop down, pick up a young duck and swallow it whole. After the gull had flown away, he hid himself near the waterside and, on its next return, shot it, after which no more ducklings disappeared.

Greater Black-backs are a pest to Solway wildfowls in flying about in front of a punt approaching fowl, calling repeatedly, and giving warning to all birds near and far. Dead or wounded wildfowl, not gathered by the shooters, are soon clean-picked by these gulls.

Fish stranded at ebb-tide, especially salmon and sea-trout, are as quickly spied by Lesser Black-backs as Greater Black-backs, but the latter are not long in driving their smaller relatives away and making royal feast by themselves. It is always advisable to investigate a fighting and squabbling party of gulls at ebb-tide as it may lead to the chance of a fish. In this way I have at various times got a sea-trout for myself, but so far not a salmon, although I have seen several obtained by other investigators. The fish may be partly picked but, fortunately, the gulls generally tackle the head part first.

When a period of excessive heat coincides with the neap tides occurring at the first and last quarters of the moon, both salmon and sea-trout are often found on the sand after having become

exhausted through lack of oxygen. The water of these small tides flowing slowly over the sun-heated sand may develop a temperature of from 70 to 75 degrees Fahrenheit, which is unbearable to the fish, and after plunging madly about, they run ashore until high and dry. When this occurs, the larger species of gulls are soon attracted to the place where a feast awaits them. A few years ago, many such exhausted fish were obtained from a pool in the River Eden at Grinsdale, no less than three salmon, as well as several sea-trout being got in one night. Next day, heavy rain fell to cool the water and remove further opportunity.

At the break-up of severe frost, particularly during the months of February and March, shattered ice carried down the firth by ebb-tides causes the death of many salmon. Small pieces of ice often lodge in the gills with the result that the fish are soon asphyxiated and are left high and dry on the sandbanks. Greater and Lesser Black-backs and Herring-Gulls are all quick to reach these dead fish, and again their squabbling may be a guide to a nice fresh-run salmon. Some years ago, there was an occasion of this kind on which no fewer than eighteen salmon were got near Bowness alone.

#### NESTING HABITS.

The Greater Black-backs breeding on the mosses are generally to be found on the outskirts of a Lesser Black-back colony and, at their best, were in groups of from two to eight pairs. On Bowness Moss there are, or were, four distinct nesting territories occupied by such groups, while isolated pairs are often widely scattered. These isolated pairs may probably be birds nesting on this moss for the first time and just waiting their opportunity to mix in with the older established and more communal pairs.

They favour similar ground to that occupied by the Lesser Black-backs, but their nests are quite distinctive, being much more bulky structures, well-made of dried grass intermixed with sphagnum moss, and often having interwoven two or three wing feathers from the owners. More feathers, from the brooding birds, become scattered around the edge as incubation progresses. The nests, by comparison, are prominently placed, generally on a small hillock or grassy mound, and not concealed by heather or bog-myrtle, whereas those of the Lesser Black-backs are often in fairly deep heather. For several seasons one pair of birds built their nest on top of an old, broken-down grouse butt where it was very conspicuous.

During the time of incubation, the birds are easily seen as they sit on the nest, but they leave immediately any person advances on to the moss, and begin flying around and about once they are well up in the air. Their actions and calls betray the vicinity of the nest, the birds getting the more excited the nearer it is approached, and repeatedly calling a deep, guttural "uk-uk-uk", much stronger notes than those of either Lesser Black-back or Herring-Gull, and not to be mistaken.

If the first eggs are taken, the nest is deserted and another built in the same territory, but not so large and bulky as the original. Should the second be harried, the next nest is very scanty, often composed of only a little dry grass.

The nests, as are those of the Lesser Black-backs, are frequently robbed by the gulls themselves. Both species are noted egg thieves and whenever a bird goes off the nest another is very apt to raid it. For this reason birds are reluctant to leave the nest after the first egg is laid. Both sexes share in incubation. Traces of the thieving habit, in the form of sucked eggs, are commonly to be found in a gullery.

Not far from the nest, the owners have a regular resting place, a hillock of some kind, where they clean and preen themselves. Any vegetation on the top is well paddled down, and the surroundings littered with cast feathers and cast-up pellets of indigestible matter.

The young ones leave the nest soon after hatching and scatter around it, hiding themselves in the heather or other vegetation where they make well-defined runways. The actual nest setting becomes decidedly messy with left-over food, comprising decaying fish and other animal remains, which smell strongly and attract clouds of flies, making the whole site unpleasant.

The parent birds are now very aggressive and, when handling young for ringing purposes, I have often been alarmed by the rapid swoop of the old ones as they come down with a roar of wings almost like the noise of an express railway train. These attacks always come from behind and I found that a walking stick with a piece of cloth tied at the end of it was the best means of defense. To be struck by such large birds would be no joke.

When able to fly, the young go with their parents to the tide-way and there closely follow them about, keeping up an incessant cry for food.

From 1890 until 1900 I generally observed five breeding pairs of Greater Black-backs. On Bowness Moss, in June 1903, I found seven nests with eggs, the layings being one three, four twos and two singles. There were also several empty nests and I estimated there to be fifteen pairs of birds. This strength remained almost stationary up to 1909. In 1910 I noted a slight increase, twelve pairs being seen on one of the well-known grounds, and two or three pairs in each of two groups at some distance. In May 1913, as recorded in *The Birds of Lakeland*, Jim Storey found an exceptional clutch of four eggs, and very fine eggs they were. On 29 June 1919 I found five nests of eggs on one part of the moss.

The number of pairs continued high on into the nineteen twenties, showing still more increase in 1925 and 1926, which were the peak years with the breeding population at about twenty pairs. In an hour and a half on 20 June 1926, Jim Storey and I found eight nests of eggs, seven of them containing three and the other two. We saw empty nests, apparently ready for eggs, and about eight more pairs of birds belonging to another colony.

On 5 May 1927, less than three weeks after the disastrous lie, Jim Storey found nine nests with eggs. The following year there were only three pairs of Greater Black-backs and very few Lesser Black-backs on the moss. There appeared to be no more than two or three pairs, at the most, of the bigger birds throughout the nineteen-thirties, and seemingly only one pair in 1940.

Bowness Moss was again extensively swept by fire in 1942, but while the ground was still smouldering, on 23 May, one pair of Greater Black-backs, and about forty pairs of Lesser Black-backs, the most for some seasons, were noted by Ernest Blezard. There was an improvement in 1946 with four pairs of Greater Black-backs, and Derek Ratchffe saw three, perhaps four, pairs in 1947.

After the large-scale colonisation of Rockcliffe Marsh by Lesser Black-backs in 1928, it became usual to find a pair or more of Greater Black-backs on this saltmarsh breeding ground. A pair observed here on 9 July 1933 behaved as though they had young. On 10 June 1934, when Mr. and Mrs. W. J. M. Gubbins and I visited this marsh, a Greater Black-back's nest containing two eggs was found by Mrs. Gubbins on the outskirts of a section of the Lesser Black-back colony. That day we saw six pairs of Greater Black-backs about the marsh, apparently the most on record for any one season.

#### WINTER HABITS.

At the finish of the breeding season, the Greater Black-backs desert their mossland haunts and the same birds would appear to frequent the Solway shore until the following spring. Separated into pairs or family parties, each maintains a definite territory along the firth or mouths of entering rivers. I have traced them in winter spaced out from the Eden above Rockcliffe, round by Bowness and Skinburness to Allonby. Strong memories of many days and nights of wildfowling on the Solway include the sight or sound of these fine birds moved by rising tide and uttering their deep, barking "aouk".

Over and above what can be regarded as the local birds, flocks of Greater Black-backs have lately taken to wintering on the Cumberland Solway. On 10 November 1946, R. Martindale and I saw a flock of twenty at Cardurnock Point, which was a novel sight to both of us. At the same place, on 12 January 1947, we counted twenty-two Greater Black-backs sitting along with some Cormorants on a sandbank far out in the channel. The gulls could be identified only with the aid of field-glasses and there were probably more than we actually counted. Revisiting Cardurnock on 26 January 1947, we soon noticed a large mixed crowd of gulls and other birds resting on a dry sandbank which had not been covered by the tide. Mr. Martindale walked across the sands until he was able to make out these birds as twenty-five Greater Black-backs, a small gaggle of grey geese and our record number of more than four hundred Cormorants.

These flocks of Greater Black-backs appear, as far as my own observations go, to be a new feature of winter bird life on the Cumberland Solway. It is interesting to note that J. A. G. Barnes records thirty Greater Black-backs in the Kent estuary in February 1943 (*The Birds of Lakeland*, p. 145), and fifty in two groups there on 8 October 1944 (*Lakeland Natural History*, p. 148).

As another departure, occasional adult Greater Black-backs have been coming in with the Herring-Gulls to Carlisle rubbish tips during recent winters.

The present position on the Cumberland Solway is that the Greater Black-back has recovered a little as a nesting species and strongly increased as a winter-visitor.

November 1947.

## NORTH-EASTERN BIRD STUDIES

By Matthew PHILIPSON.

### THE CURLEW—*Numenius arquata*.

The Curlew is one of the most characteristic birds of the neighbouring hill country of East Cumberland and West Northumberland during the spring and summer months.

Except for the limited pieces of cultivation bordering the South Tyne and in the Irthing valley west of Gilsland, the region is a vast sweep of rough pasture, open moorland and moss-bound bog with occasional tracts of heather, and stony hillsides overgrown with bracken. Here and there, small strips have been drained and planted with conifers, principally Scots pine, spruce and larch, whose main purpose is to provide shelter for the hardy Blackface sheep and Black Galloway cattle which graze these windswept uplands. During the past twenty years, however, much of the northern part has been taken over by the Forestry Commission and scores of square miles have been planted with conifers which, in the course of time, will materially affect the bird population. Forty years ago, the Curlew was both numerous and widespread as a breeding bird over these entire uplands but, over the past thirty years, it has steadily declined. It is still in fair numbers even though its decline during these last ten years has been more noticeable.

Most usually, the Curlews return to their nesting haunts about the first week in March; at least that has been my experience over a period of thirty years, though the weather is the principal factor as to time. Occasionally, when a heavy fall of snow has occurred after their arrival, as notably in 1915, 1919 and 1928, they will depart again for the low country or coast until less inclement weather warrants their coming back to the hills. The nearest distance to the west coast from this particular part of Britain is no more than thirty miles and, to the east coast, some forty which may explain why Curlews are, or were, so plentiful here as breeding birds. Though so common, they rarely return in large flocks, but rather in small parties of seven or eight or, at the most, twenty birds, which last is unusual. For the first few days they stick to the lower slopes of the hills, open meadows and pastures and, in early mornings, I often flush them from the wide gravel beds which line the upper reaches of the North and the South Tyne. In these riverside situations they will keep company with small bands of Oyster-catchers, and sometimes Golden Plover. As a rule the Curlews are mute so long as they are in their small parties.

Generally by the end of March. they have dispersed all over the hill pastures and their wild whistling mating calls enliven the grey moorlands from dawn until dusk. Each male will lay claim to a territory of not less than twenty acres, and often desperate battles ensue between rival males over their claims. Often I have watched them chasing each other over and around the shoulders of the hills, or buffeting each other with their powerful wings as they fought amongst the brown moorland rush. At such times, their mating whistle would be changed to the fast repeated alarm note that they generally use when fox, dog or human intruders happen upon their domain, with the difference that now it carried a tone of anger and defiance. Eventually, each pair settle down to their own chosen patch and the bickering comes to an end; indeed, except for the short period of dispute, Curlews are very sociable birds and live in peace with their kind, both on the inland fells in summer and on the coastal mudflats during the six or seven months of the year they congregate there in large flocks.

The female Curlew which, by the way, is slightly larger than the male, lays her eggs in about the beginning of May and incubates for some twenty-eight days. The nest is generally just a scrape in the ground lined with a little moorland grass or dead rush. Often it is concealed amongst rough herbage but, quite frequently, I have found nests on open ground with little cover to hide the brooding bird. The large, pear-shaped eggs, nearly always four in number, are as a rule fairly uniform in colour and size, having an olive greenish ground spotted and blotched with dark brown. They have always been collected for the table by the hill farmers and shepherds and, in these days of austerity. it can well be imagined that they are a greater prize than ever. Be that as it may, few eggs fall into the hands of any but the most experienced hunters, for the Curlew is versed in all the tricks of luring an enemy away from her eggs or young ones. Again, the plumage pattern of the Curlew blends well with the browns and greys of the moorland vegetation, and similar remarks apply to the nest and eggs.

During the time that the female Curlew is incubating, the male keeps constant watch over the nesting site, often from a distant hillside which commands a view of approaching enemies from every direction. At the first sign of danger, his warning of alarm rings forth, and the female is off her eggs in an instant! and, taking every advantage of natural cover, she runs with head down as far away from the nest as possible. If the eggs are highly incubated, she will run three or four hundred yards before taking flight then, and not till then, she will call loudly as if further to confuse the intruder. Occasionally when the male has been off guard for a moment or two, and the nest in a fold of the hills, I have walked right close to the brooding female before she was aware of my presence. In these instances, as soon as she saw me, she would steal from her nest and run rapidly

away, and so well did her plumage blend with the grey and brown setting, that none but the observant watcher would ever have seen her. If I pretended to give chase, she would never feign lameness, like some other Waders, but would take to wing, fly for fifty yards or so, then commence running again.

The sagacity of the Curlew enters into the following experiences. It would appear that the brooding female may now and then sleep during the daytime as she sits upon her clutch of eggs, and at such times, when apparently her mate was off guard, I have walked up to her as she slumbered. When only a few yards separated us, my footsteps would undoubtedly waken her, as the Curlew's sense of hearing is very, very acute. Realising, apparently, that if she attempted to arise at such close quarters, she would be seen at once, she would sit perfectly motionless upon her nest, trusting thereby to escape detection. Often, in similar instances, this ruse has succeeded, for although I have felt certain that a Curlew was brooding within a radius of twenty yards, her sitting tight has saved the situation and I have failed to detect her and her nest. At other times the gleaming, dark eyes of a brooding bird have given her away as she sat motionless a short distance from me. Not before then, and realising that she had been detected, she would flap from her eggs with a loud cry. fly maybe thirty yards. alight and set off running, anxiously crying as she went. This has been my experience again and again.

Another interesting fact regarding Curlews comes from the frequent times I have lain hidden behind a dry stone wall and hollered at them and made various queer noises at the top of my voice. Through a hole, each time, I could see the brooding bird on her nest, apparently taking no notice of my din, but that instant I raised the top of my head above the wall, she was up and running.

An hour after being hatched, the young Curlews are running strongly by the side of their parents, for both parents are equally solicitous for their welfare. During their early stages, their parents probe for earthworms and pick up slugs for them and examination has shown that they are fed quantities of the moths which abound on the swampland and in the hill meadows. Should danger threaten, the young at! once squat motionless amongst the rough herbage, where they are most difficult to detect, while the parents sweep round in wide circles making a clamour of anxious calls. For all their great caution, many young birds fall victim to prowling foxes, for the keen nose of the fox leads him with ease to them by reason of their strong scent. The young do not fly until they are practically full-grown at about six weeks. All this time they are most carefully tended by their parents; indeed, it could be true to say that the small groups of up to six birds! which are to be seen winging their way coastwards during August and September, are mostly family parties.

I have never seen Curlews flock on the hills before taking their departure! in early autumn. The nearest approach is when several families unite, say to the number of twenty birds, and come down to the damp meadows of the hill farms at night. During this period, a few are shot by farmers for food, the young birds of the season being particularly fat and tender, without any trace of the rankness noticeable in birds which have fed on the coast for some time.

By August and September, when the family parties go off coastwards, the young birds are fully strong on the wing. I would say that practically all the Curlews of these Cumberland and Northumberland borders depart in a south-westerly direction. Seldom are any seen going eastward towards the North Sea. True as well it is, that some numbers of upland Curlews do not breed and are to be seen in parties of five or six right through the summer months. From close study of their habits and calls, I am led to believe that the birds in these parties are yearlings comprising both males and females. I also believe that these non-breeders are the first to leave for the coast.

There remains the certainty that, along with some other species, the Curlew has declined on these uplands, the breeding strength of our "Whaup" being now no more than half of what it was thirty years ago. Foxes and Carrion-Crows are the natural enemies to the reckoned with and the former, which are by far the more formidable, have undoubtedly increased during the past ten years. Then again, the changing aspect of the habitat may be tilted against the Curlew.

#### THE BLACK GROUSE—*Lyrurus tetrix*.

So far as we are able to trace back, the Black Grouse was always common on the open moorlands of North-east Cumberland, and on the eastern portion of Tindale Fells bordering South Tynedale. Fifty years ago, it was regularly found on the tables of all hill farmers and was so numerous that, in winter time, it came down on to the cultivated lands in packs of as many as a hundred birds. I myself have often seen packs of fifty on the hawthorn hedges during the winter months and, on a single morning, have counted one hundred and fifty birds, all within a square mile of ground. Twenty years ago, it was a common occurrence for one gun to account for five brace on a winter's day; now there is hardly a bird to be met with in a week's tramp over the uplands.

Black Grouse, or Blackgame as they are commonly known, are without doubt among the finest of game-birds, and adult blackcocks frequently weigh four pounds with the females, or greyhens, a pound lighter. My own experience and observations on them date back nearly fifty years and, for most of that time, I lived in and around the foothills of West Northumberland and East Cumberland. During one period, I was able to watch Black Grouse, on any winter's day, from my own cottage windows.

Black Grouse are not really denizens of the higher ranges, neither do they spend a great deal of their lives in the lower parts of the valleys, though upon a good many occasions they may be found in either of these situations. As a rule, they prefer the "white land" that skirts the hills at about the thousand foot level. This is land grazed by hill sheep and on which the predominating vegetation is moorland bent grass, with patches of common rush. On the other hand, blackgame are far from sedentary in relation to any type of ground and I have often found them on the moor-land proper among wide moss hags where flying bent gives way to heather, heath, crowberry and blaeberry.

One of the most characteristic sounds of the uplands in past years was the drumming bubble of the Black Grouse as they gathered to display on some bare green hillock, on a fine spring morning or evening. These chosen gathering places, or "leks", were used year after year, and the birds gathered there at daybreak in the morning and again at about six o'clock in the evening, from the latter part of March until the second week in May. In April 1925, and each succeeding April until 1937, I used to visit many leks on the Cumberland side of the River Irthing from Gilsland to the Scottish border. There were several of them on the farm of Mosscoo, just north of Gilsland, and others from there right across the wastes to the higher lands of Bewcastle. These leks were always on elevations where the sheep had cropped the herbage short, and they were as green as a lawn, though in the immediate vicinity, huge clumps of moorland rush generally predominated.

The open nature of the ground made the chosen spots difficult to approach without disturbing the displaying birds but, from a distance, I was often able with the help of field glasses to watch them unobserved. Regularly, as soon as the sun rose above the horizon, the Black Grouse would begin to fly in from every direction in fours or fives until as many as forty had assembled, though quite often the company would number no more than ten or a dozen. Hens generally predominated in number and the cocks, in the main, were mature birds in full, adult plumage. In regard to this, I have a suspicion that yearling males, in their first season, seldom find a mate, being driven off by time more vigorous and handsome old cocks. Black Grouse are, of course, decidedly polygamous.

Regarding their actual display, I doubt whether any British bird can equal it for concerted grotesque movement and vocal effort combined. It is something that has to be seen to be believed, and something that once seen is not likely to be forgotten. As soon as half-a-dozen birds had gathered at the lek, the cocks would commence to strut backwards and forwards, or around each other, not unlike a set of waltzers on a ballroom floor. The plumage of the neck would be raised into a sort of ruff, the tail spread fanwise over the back, and the wings drooped and trailed stiffly over the ground. The pompous strutting of a

farmyard Turkey jock can give some little idea of the wilder savagery of the blackcock's display. They always appeared to me to vie with each other in stateliness as well and, as they passed each other, I almost thought that they cast looks of insult along with their notes of defiance. After four or five minutes of their strutting, they would leap wildly into the air, slew around, and run in the opposite direction.

Quite often two cocks would meet in mid-air and appear to strike furiously at each other with feet and wings. Unlike the Pheasant cocks, however, which often fight until one or the other succumbs, they appeared to do each other little injury and I can say, that after half a hundred mock battles, hardly a feather was left on the site. Meanwhile, the rest of the gathering, both hens and cocks, would just stand around preening their plumage and looking on with mild interest. At frequent intervals, one or more of the combatants would retire to the company of watchers, their places being taken by some of the lookers-on. Often the tournament would continue for two hours, and never for an instant would the strange bubbling note of the displaying birds diminish. It is a savage, wild chant, in some way not unlike the chant of the pipes at a great distance. Moreover, it is a sound that on a fine, calm morning in May carries very far and it can be heard two miles away, rising and falling as it travels across the mist-laden hollows. Most often the birds would depart in threes or fours, sometimes in half dozens, to their feeding grounds which generally are widely dispersed.

Strangely enough, I never saw the males pay any particular attention to the females at the leks, and it is just possible that the females themselves choose their prospective mates. Neither have I ever actually seen mating take place among Black Grouse at the leks, or at any other place in the hills. A common idea among country folk is that the Black Grouse does not mate in the same way as other birds but that the males deposit their sperm on the ground to be picked up by the females. The same fallacy is widespread regarding Peafowl. Contrary to what other observers state, I have never seen Black Grouse display after mid-May, nor known them to visit their displaying grounds any later than that date. Generally by mid-May the hens have laid their clutches of from seven to ten eggs and begun to sit, while the males have scattered over the hills to take no further interest in the females or their progeny.

I have found the nests, mostly just scrapes in the ground, in many and varied situations, some surrounded by rough moor-land rush, others amongst deep heather. They have been in hill meadows where they are often not far from the stone wall boundaries, on stony hillsides with a southerly aspect, and in thin open woodland under young birch and mountain ash trees.

Young Black Grouse are remarkably hardy, and they are strong upon the wing when they are a month old. The mother will generally fly from her young ones at the approach of a human

being, some extra sense seeming to inform her that a human is extremely unlikely to find them lying concealed amongst the rough herbage or heather. On the other hand, she will bravely risk her own life in defending them against fox or stoat, for the keen nose of these two marauders easily enables them to find her offspring, however concealed.

In their young state, Black Grouse are largely insectivorous as an examination of their crops can tell and, indeed, I have often watched through field glasses the young poults leaping up to take various kinds of flies from the tall grasses. In addition, they consume a good deal of vegetable food, including the tender tips of heath and heather, soft grasses and seeds. One peculiarity regarding grouse, which few observers appear to mention, is the extraordinary amount of grit they swallow daily. I am of the opinion that the disease which is often responsible for wiping out hundreds of Red Grouse on our moors may be due in some part to the lack of this essential aid to digestion. Generally about mid-day, Black Grouse visit some stony hillside to fill their gizzards with fragments of feldspar, quartz and time-crumbled limestone. The wise gamekeepers fill boxes with crushed flint, or scatter it in favoured spots, so that the grouse may not lack a vital necessity.

About the beginning of October, Black Grouse gather into packs and, at the approach of winter, move down into the valleys during the daytime, but return to roost on the higher ground at night. Occasionally, they will roost! in trees, Scots pines being favoured. As a rule they prefer to roost out in the open on rough ground, in twos and threes, and a pack of fifty will be spread out over several acres.

Sometimes, when deep snow covered the ground, I have found them burrowed deep down under the surface. In March 1915, during a memorable snowstorm, I was travelling down a deep glen north of Gilsland. The snow was so deep that I kept sinking in to the waist and my whole world was a white wilderness, unbroken except where a bare, black hawthorn reared above the snow. Suddenly, without any warning, I was surprised by four or five Black Grouse bursting through the snow at my feet, and flying off, to be followed by several more of their kind. The holes from which they sprang were at least a yard deep, and at the time I could not conclude as to whether the birds had burrowed down for warmth, or possibly food, or had been buried by the falling snow on the previous night. Since that time, I have often had similar experiences, and am now pretty certain that Black Grouse do not burrow in the snow but, being buried by a heavy fall of snow, they remain for a while sheltered from the storm and until hunger forces them to break out to the surface.

Barley stubbles have an irresistible attraction for Blackgame in winter and early spring, in both the grain which they glean

and the clover leaves with which they stuff their crops. They devour berries of various kinds, including those of rowan or mountain ash, blaeberry and crowberry, and they take hawthorn fruits and wild rose hips as well. So long as haws hang red on the bushes, they come down to the hedgerows daily, and it is amusing to see such heavy birds trying to reach the fruits out the more slender twigs. So far as I am able to judge, they drink infrequently, and then late in the afternoon. If the crop of haws becomes exhausted, and a heavy fall of snow occurs, they will resort to the birch tree tops to feed upon the buds and, on some occasions will satisfy their hunger on the tops of swedes or on Brussels sprouts in cottage gardens. It is at such times that they fall easy victims to the sportsman's gun.

So much, then, for Black Grouse as they were up till a dozen years ago on the lower bills of the Cumberland and Northumberland borders. Now, alas, they have become rare. Thirty years ago they were as common here as Red Grouse. During the 1914-18 war years, their ranks were perceptibly thinned, as might be expected when the protection law was partially ignored, but by 1930 they were nearly as numerous as ever. I counted forty-three one November afternoon in 1931 on the Hill Farm, Gilsland, and in the same month saw a pack of fifty in a big meadow at Hallhankgate on the northern edge of Tindale Fells. From then on, I saw their numbers dwindle. Slowly at first, it is true, but after the outbreak of hostilities in 1939, they rapidly declined in the adjoining parts of both counties where once they had been so common. In 1946, I saw six Black Grouse, two cocks and four hens, at Lamperts on the upper reaches of the Irthing. In 1947, I saw three over the Northumberland side of the border in late August, and one female in January 1948 on a thorn hedge north of Haltwhistle.

When I say that I have tramped scores of miles during the past two years in the former haunts of the Black Grouse, to see so few birds, it will be realised how bad the situation has become. Friendly gamekeepers whom I have contacted all tell the same story, there are no Black Grouse to be found, and strangely enough, few people seem sufficiently interested in any way to prevent the loss of this grand game bird. I do not think that "disease" is the cause of the rapid decline of such a hardy bird. Most farmers have the shooting over their own land nowadays and that, together with the value of the birds in these times of austerity, may be a root cause. Foresters are apt to look with suspicion on Black Grouse, claiming that they do an amount of damage to young conifers by picking out the tender shoots in spring. My answer is that this charge is greatly exaggerated, for seldom have I seen the birds attack conifers of any description.

Dangers to which Black Grouse are exposed include deep drainage ditches which can be death traps to their chicks, as also to those of Red Grouse, Curlew and Golden Plover. Low-flying

aircraft which appear over these wild open tracts of country might possibly upset nesting birds. Foxes, again, now on short rations as far as rabbits are concerned, undoubtedly kill a considerable number of young Black Grouse before they are on the wing. Adult birds generally contrive to steer clear of the wily fox.

I am fully aware that much more might be said regarding the quickened disappearance of a bird recently so common on these borders, and I do fear, that unless more stringent protection is not long in being afforded to our Black Grouse, its local extinction seems almost certain.

December 1948.

## THE WARBLERS

By ROBERT H. BROWN.

My notes cover nine species of warblers that breed in some part or other of Lakeland each year. These nine are the Chiffchaff *Phylloscopus collybita*, the Willow-Warbler *P. trochilus*, the Wood-Warbler *P. sibilatrix*, the Grasshopper-Warbler *Locustella naevia*, the Sedge-Warbler *Acrocephalus schaeenoboenus*, the Garden-Warbler *Sylvia borin*, the Blackcap *S. atricapilla*, the Whitethroat *S. communis* and the Lesser Whitethroat *S. curruca*.

For the past thirty years I have studied the bird life of the area and I would state, solely from my own experience, that amongst these warblers the Willow-Warbler is the most abundant and, numerically, should be placed first. As a good second, and in some seasons almost rivalling the Willow-Warbler for numbers, I would place the Whitethroat; third the Garden-Warbler with the Wood-Warbler, in many wooded parts of the area, running it a close fourth; fifth the Blackcap, followed by the Sedge-Warbler; seventh the Chiffchaff and then the Grasshopper-Warbler and Lesser Whitethroat competing for eighth and ninth places. It must be understood that this is an average placing for the whole thirty years and that in almost any year one could find fault with the numerical placings and want, shall we say, the Sedge-Warbler placed before the Blackcap in one year or the Wood-Warbler before the Garden-Warbler in another year. Any naturalist who has given any very intensive study to a selected number of species of wild birds will admit, I think, that very few species are able to maintain a constant number of breeding pairs each year in a given area. There is usually a considerable fluctuation from year to year in most species, more especially in those which are strictly migratory, as is the case with these nine warblers.

The last few days of March or the first few days of April I consider the average arrival-time of the Chiffchaff; 24 March is my earliest date and 9 April my latest. This species is easiest identified in the field by its song which is a measured repetition of the two notes "chiff-chaff", but one June I came across a bird that sang the normal "chiff-chaff" notes for several seconds and then ended with part of the song of the Willow-Warbler. I listened to it for several minutes and it continued in that manner; first the "chiff-chaff" notes and then part of the Willow-Warbler's song. The song apart, the Chiffchaff is very like the Willow-Warbler in plumage and, if the song has not been heard, it is very difficult to say with certainty whether the bird observed is one or the other. Normally what might be termed the average Chiffchaff has darker legs than the average Willow-Warbler, but unfortunately some Chiffchaffs have legs paler than average and

likewise some Willow-Warblers have legs darker than average. The only certainty about the leg colour is that Chiffchaffs and Willow-Warblers cannot be always identified in the field by leg colour alone.

The Chiffchaff in this area confines itself almost entirely to woodlands, chiefly deciduous, and especially woods with a good undergrowth of small bushes which provide nesting sites. I do happen to have a note of two birds in song, in early April, in a mature Scots pine plantation and I have also a note for early April concerning a Chiff chaff singing from a hawthorn hedge bordering a country lane, but I have never found the species nesting in such a situation. In the first week of June 1936, I counted seven Chiffchaffs in song along a one-mile stretch of oak-tree shaded road, with plenty of undergrowth, running along the base of Muncaster Fell. In a one-mile stretch of the Shawk Beck the number of Chiffchaffs in any year has varied from one to four birds, with an average of two birds for a normal year. With the Chiffchaff, as with all the species of warblers under consideration in this paper, there is often a proportion of unmated birds that sing persistently throughout the spring and early summer and never get a mate, although in possession of a suitable breeding ground with nesting sites. The breeding haunt of a warbler is usually marked by well-used song posts, from which the cock will sing in turn. Should a neighbouring cock attempt to invade this territory, he is at once challenged and, if necessary, stopped from entering by threat-display or, in extreme cases, by fighting with claws interlocked and wings flapping. A hen entering this territory is never challenged but, on the other hand, the cock will use every guile to induce her to stay and mate with him. Data on ten broods give 4/6, 4/3 and 2/2 young; an average brood of four young. All nests were in deciduous woodlands, built either in brambles or hawthorn, or in gorse, and from one to three feet above the ground.

The normal song period is prolonged by the unmated cock birds until the third week of July but, when the birds start moving south in August and September, song is again heard. This southward movement, as evidenced by birds passing through my garden, begins in the third week of August and lasts until the end of September, with one record for 1 October when a cock enlivened the autumnal quiet with a series of "chiff-chaff" notes from a beech tree. In 1945 I heard for three days what I am certain was the same cock for, on 11 September, he spent most of the day singing in my neighbour's orchard then, on the 12th, he was in my orchard, and on the 13th he had moved to another neighbouring orchard, a distance of about three hundred yards in three days. Perhaps the Indian summer weather prevailing at the time accounted for his leisurely movements.

The Willow-Warbler, or the bird with the delicate air, for his beautiful song has no harsh notes, arrives in April. I have only

one March record; a bird in song at Over Water on 31 March 1946. Throughout the thirty years, I find his average arrival-date to be 14 April, varying between 5 April and 18 April. Although the cock usually arrives before the hen, I have several records of the cock and hen arriving paired. A cock Willow-Warbler usually frequents my orchard at Cumdivock each year; generally the hen arrives later and the pair breed in the orchard or on the roadside grass verge outside. In two separate years the cock and hen arrived together whilst, in three years, no hen arrived and the cock, after singing continually for about three weeks, deserted the breeding place. When a hen has arrived, the display of the cock has been seen on a number of occasions prior to incubation. Before the arrival of a hen, the cock, during the intervals between singing, will slowly raise both wings up and down several times. The hen arrived, the cock continues his wing-raising, often with tail slightly depressed, and he also glides through the air with vertical wings. The hen replies with a similar wing-raising exhibition and the cock may stretch out his head and neck, at the same time moving the head in a sideways manner. The wing-raising of the hen seems to be a sign that she is willing to pair with the cock. A cock was singing in an apple tree when the hen flew through the air with rather slow-motion flight and alighted on a branch in a neighbouring apple tree where she raised her wings half vertically several times after the manner of a Hedge-Sparrow. The cock at once flew to her and copulated. On several occasions coition has followed upon this wing-raising by the hen, the cock often uttering a harsh, rasping note prior to mating. Two outstanding displays by a cock have been seen. On 25 May 1942 a cock displayed three times to a hen, both, birds being perched on a tree branch a few inches apart. The hen was in a normal attitude; the cock perched upright with head stretched out, wings bent stiffly downwards from the carpal joints and tail depressed and slightly fanspread, whilst a harsh grating note was uttered during the display. On 10 June 1926 a cock displayed to a hen when both birds were on the same branch, a few inches apart. The hen was in a normal attitude and the cock perched upright with head and neck outstretched and slightly bent down and the tail depressed. The wings, which were bent downwards from the carpal joints, were slowly moved in a sideways direction whilst the bird uttered a loud hissing note.

Although the nest is normally built and lined with feathers by the hen, I have two records which suggest that the nest was built by the cock before the hen arrived. The 14 May is an average date for the nest to be lined with feathers and ready for eggs, with 20 May an average date for a full clutch. The nest, usually on the ground except when it is built in a grassy bankside beneath a hedge, is commonly in orchards and roadside verges and country lanes, on commons and open spaces, and in deciduous woods. The bird breeds up to 1000 feet on wooded fellsides. Data on a hundred and four broods give 3/2, 2/3, 8/4, 16/5,

35/6, 37/7 and 3/8 young; an average of 59 young. During fledging, the young are fed chiefly on green caterpillars and small flies, one brood at Ullswater being fed on mayflies. Though usually silent when handled, they occasionally give a hissing note on being disturbed.

I have several records of injury-feigning by the adult Willow-Warbler when flushed from young whilst a cock, when disturbed in late May from a nest ready for the feather lining, trailed his wings as if he were injured. The most pronounced injury-feigning was by a hen flushed from a brood of six newly-hatched young in a bankside. She fluttered to the ground with both wings outstretched and in this manner crept away for several yards. In a one mile stretch of country road at Cumdivock, the number of breeding pairs has fluctuated between three and seven throughout the thirty years. A half-acre plantation of immature Scots pines, having several open spaces dotted with gorse, hawthorn and bramble, annually has one or two pairs of Willow-Warblers, with a maximum of four cocks in the spring. A six hundred yards stretch of gorse and hawthorn-clad common will have up to nine cocks singing in April, although perhaps only four to six of these birds will get mates and rear young.

In general, only one brood is reared but, occasionally, a pair may rear two broods as I have notes of young still in the nest on 11 July, 23 July and 31 July in various years. This is the only warbler I have found victimised by the Cuckoo but, unfortunately, the young Cuckoo disappeared when about half-grown. Passage-movement begins in the third week of July, with birds starting to drift, either singly or in twos and threes, through gardens and orchards and along hedges with occasional visits to cornfields and turnip fields and, on the lower fell slopes, to bracken patches. If windows are left open, they often enter houses and I have caught and ringed several in my house at Cumdivock during August or early September. A rush of birds is often noticed in the period 6-12 August and also that of 17-24 August. A good deal of song comes from these passing visitors and they can be heard in most years up to the last week of September.

The song of the Wood-Warbler I have not heard before 30 April, with 4 May as the average date. The cocks usually arrive first, frequenting chiefly deciduous woods of oak and beech and silver birch, preferably with little undergrowth. The song is a rising repetition of the one note, increasing in speed and ending in an explosive trill. The bird shivers with its wings as this loud trill is given and may then give voice to a series of mournful "deua", "deua" notes and fly from tree to tree as it finally ends its song.

Display consists of a slow, butterfly-like flight by the cock from tree to tree when a hen is near and, on closer approach to her, he will, whilst singing, raise the head feathers. Nest-building

is usually the work of the hen but, one 27 May, I watched a cock Wood-Warbler, after singing, begin nest-building in a bankside of the wood and, on 1 June, the first egg was laid. A hen Wood-Warbler that I watched one June day nest-building in a bankside under a sapling oak was collecting dead grasses, tugging vigorously at them, and as soon as it had a beakful, flying straight to the nest. After leaving the nest, it usually flew to an overhanging branch of the oak. In this connection, when feeding young, the adults invariably make their way down to the nest by an overhanging branch if possible. All nests found have been in deciduous woods, often in a slight bankside in the wood, and partly shaded by bracken, or a hazel or oak stump or even by a clump of wild hyacinths. Data on twenty-two broods give 2/3, 2/4, 6/5, 10/6 and 2/7 young; an average brood of 5.4 young.

The 24 May is my earliest date for a clutch of seven eggs with young fully-fledged by 17 June. Many pairs are just hatching out their broods in mid-June, with late breeders feeding young until the beginning of July, and song can be heard until the beginning of July. Five cocks were located one May in a deciduous wood of about forty-five acres, and three cocks in a twenty acre wood. The breeding range runs up to 1250 feet on wooded fellsides. I have no records of any passage-movements in the autumn.

The Grasshopper-Warbler arrives from 23 April onwards, with 30 April as an average date. He is easily identified by his peculiar reeling song, like the sound of line running off an angler's reel. Numbers fluctuate considerably from year to year. One year several cocks may be heard reeling in a given locality; the next year, in the same locality, no birds are heard, or just a solitary one. Always there seems to be a considerable excess of cock birds and, after reeling for several days and nights on a gorse-clad common or in a young plantation, and no hen arrives, a cock will vanish to another locality. Whilst the reeling is most frequently heard in the early morning or late evening, the bird will also reel through the day. Thus, on 5th May 1936, a cock reeled from a young Scots pine plantation from dawn until eleven o'clock and, in the afternoon, from two to four o'clock, and then started up again in the evening at about half-past seven. On 13 June 1937, one reeled in bright sunlight from two o'clock until about four from a bed of willows bordering a meadow hayfield. I have timed the reel on many occasions, and have had birds reel for as long as eighty-nine seconds without a pause. When the cock is reeling for a mate, he will often sit in full view on a gorse or hawthorn bush. The best view I ever had of a cock Grasshopper-Warbler as it was reeling was on 23 April 1940 when one suddenly appeared on top of a hawthorn hedge at Cumdovock, shortly after eight in the morning, and distant no more than three feet from me, reeled away for half a minute or so.

Although I have numerous notes of Grasshopper-Warblers reeling from gorse-clad commons, young plantations and the edges of mosses and swampy and rushy fields, I have only four breeding records as, in my experience, the majority of birds reeling are unmated cocks that never seem to get mates. At least I can never find them, although invariably when I locate a reeling Grasshopper-Warbler I make repeated search for the pair of birds and then the nest. Two of the four nests found were in young plantations and amongst rushes and bramble; one was at the base of a gorse bush on a gorse-clad common and the fourth among a heap of branches left in a cut-over wood. 2/5 and 1/6 young were reared while, in the other nest the young were taken by a predator, possibly a stoat.

The last week of April brings the Sedge-Warbler, the avian mimic who, not content with his own song, will also render the songs of four to six more species the while you listen on some sultry spring evening by the tarn edge. He frequents the sedges and willows around the lakes and tarns and the brick ponds and also the sedgy ditches on the outskirts of the mosses and low-lying rushy pasture fields; but there are large stretches of countryside where no Sedge-Warblers are to be found.

I have not heard the bird before 26 April and give 5 May as an average date for the spring. His vigorous and rather creaking song continues into August, which suggests that a second brood may sometimes be reared. I have found full clutches of eggs by 17 May and have several breeding records for July, including a pair feeding three young on 29 July. The cock, in display, glides through the air with wings held half vertically whilst singing vigorously and, at times, performing a rather "slow-motion" flight. Nests are commonly in beds of meadowsweet, or nettles, or nettles and cleavers, or low brambles. Data on twenty-four broods give 4/2, 4/3, 10/4, and 6/5 young, or an average brood of 375 young. I have records of passage-movement in August, and note that most breeding sites are deserted by the third week of August.

I give 15 May as the average date when the rich, hurried bubbling song of the Garden-Warbler, with a liquid undercurrent running through it, can be heard in the shrubberies and thickets of small bushes. I have heard it by 5 May, and have found a pair of Garden-Warblers frequenting a blackthorn thicket by 11 May, but these were early birds and, in some years, unmated cocks are still arriving at the beginning of June. These birds, anxious for a mate, display themselves freely in the tree tops, singing with wings half open and shaken at times. I remember vividly one June day in the wood by Thurstonfield Lough when three cock Garden-Warblers, each perched on the topmost spray of an alder, sang vigorously one against the other. When a cock Garden-Warbler arrives in a certain locality and takes possession

of a blackthorn thicket, or a clump of brambles, besides singing his hurried, bubbling song from various song posts, he will start building a series of nests in the thicket or brambles. These are admittedly often very flimsy affairs, just shallow bundles of fine grasses, especially at the beginning of the season, but later efforts are more substantial. The hen bird, if and when she arrives, may make use of one or not, but no doubt they indicate that the cock lots ideas of raising a brood. I have notes of such cock's nests by 20 May, and have found as many as five of them in the one blackthorn thicket where only one cock Garden-Warbler was seen.

There is often a considerable excess of cock birds, and as many as six of them may sing vigorously about the blackthorn thickets and bramble clumps in the open spaces of a deciduous wood during the latter half of May, with finally only one cock securing a mate and breeding. In a one mile stretch of the wooded Shawk valley the number of breeding pairs has fluctuated from two to five, although, in the last week of May, up to nine cocks have been heard singing.

I have seen very little display other than the cock raising one wing half vertically to the hen whilst singing, but an incident I noted one 8 June may have some connection with display. A pair of Garden-Warblers had a brood of three young in a bramble clump. Both parents approached the nest with food, the cock having a beakful of green caterpillars and the hen a crane-fly. The cock presently fed the young, after a good deal of "churring" from both birds, and then the hen, with the crane-fly still in her beak, approached the cock. He at once put out both wings horizontally and fluttered them, whilst singing a quiet little warble; the hen followed by putting out her wings horizontally and fluttering them.

Breeding sites are commonly in thickets and shrubberies about mansions and in large gardens and on the outskirts of woods and copses. Blackthorn and bramble, beds of nettles and cleavers and clumps of wild raspberry are most frequently used. My earliest date for a full clutch of eggs is 21 May, but most broods do not hatch out until the first or second week of June, whilst I have a record of a nest with two eggs on 19 July. In the case of one brood of four young being brooded by the hen, in a bed of nettles, the nest was tilted to one side at such an alarming angle as to give the impression that all might collapse at any moment. Another brood, of five young, in low brambles, scuttered out of the nest and called noisily in answer to the adults' warning "churring" notes. Data on thirty-one broods give 2/2, 7/3, 12/4 and 10/5 young, or an average brood of four young.

I have notes of passage-movement in August and September, usually referring to individual birds about the bushes and thickets. My latest date is 9 September.

The Blackcap has, I think, the most beautiful song of all these warblers, and though at times the Garden-Warbler can

approach him very closely for beauty of song, the Blackcap scores in richness of tone. The Blackcap's song is to the Garden-Warbler's as the Blackbird's is to that of the Song-Thrush. My earliest date for arrival is 23 April, with 30 April as an average date but, on 17 May 1948, a nest with five half-fledged young was found in brambles at the adjacent Leighton Moss and, assuming the young were no more than six days old, this would give 30 April for the full clutch of five eggs, with an incubation period of eleven days.

I think the cock Blackcap, as is the case with most warblers, will start nest-building as soon as he arrives and, if he is fortunate to get a mate within a few days of his arrival, the pair soon have a nest completed and eggs laid. The nest of the Blackcap is, I think, even more flimsy than that of the Garden-Warbler, with daylight usually showing through the base. Nests are often in bushes such as rhododendron and gooseberry, or in young sapling trees. I have twice found the cock incubating eggs, once on five eggs in a nest in a sycamore sapling, and again on five eggs in a young spruce in a plantation.

Blackcaps and Garden-Warblers frequent pretty much the same type of breeding ground and I have notes of occupied nests of the two species only fifteen yards apart. I find that the Garden-Warbler is more demonstrative at a nest with young than is the Blackcap. Most nesting Garden-Warblers, when the nest is closely approached, will "ehurr" loudly and constantly. But Blackcaps are more subdued and only rarely "churr", although often the cock Blackcap will burst into quiet song; in fact, all through the breeding season, he prefers to sing, and at times he will imitate the songs of other warblers. I have heard him in full song up to 25 July, which rather suggests that in some seasons, and especially if the first brood has been reared early, a second brood may be attempted. My latest date for young being fed is 2 July. Data on seventeen broods give 2/3, 5/4 and 10/5 young, or an average brood of 4.5 young.

In seven seasons I have records of the Whitethroat arriving in April, the earliest date being 20 April, and then a pair arrived together one year on 24 April, but the other seasons all have a date in the first week of May for arrival. The Whitethroat is, I think, more full of restless energy than any other warbler, especially when newly arrived and is constantly flinging himself up into the air above a hawthorn hedge or bush, bursting into ecstatic song, and then as hurriedly retreating into the comparative safety of the hawthorn. A quiet form of display was seen on 9 May when the cock, with a piece of vegetable down in his beak, spread his tail fanwise, the hen replying by raising her wings in Hedge-Sparrow style. More boisterous display occurs when the cock chases the hen up and down the length of a hedge whilst he is in full song.

If the cock and hen arrive together, as sometimes happens. then the nest-building is done entirely by the hen. When the cock precedes the hen, and has moreover to await several days. or even a week or two, before getting a hen, or maybe not to get a hen at all, then he spends part of his time building two or three "cock's" nests in his chosen territory. These nests are usually lined around the rim with vegetable down which is occasionally also worked into the nest bottom. I have watched a cock White-throat, after singing, to carry a beakful of dry grasses into a meadowsweet clump. In the case of a nest in low brambles, a cock was seen to visit it but no hen was ever seen near and, in fact, this cock never got a mate. Four days later, the nest rim was found to have been decorated with vegetable down and the cock was then heard singing close at hand. One day in June I flushed another cock from an empty nest in herbage beside a hedge, the nest rim being freely decorated with vegetable down.

If and when the hen arrives, she may use one of these "cock's" nests as several of my records prove. Thus, one 11 June, a nest with five eggs in meadowsweet had the rim decorated with vegetable down and, on 7 June, a nest with one egg amongst grass growing up through a sapling spruce had the rim decorated with cotton-grass down. Once, on 26 May, a nest of five eggs in a clump of heather had pieces of willow down round the rim, and another nest with one egg in a low hawthorn bush was likewise decorated. Two nests of five eggs each, found 2 June, and placed about seventy-five yards apart in gooseberry bushes in a large garden, had both of them vegetable down on their rims. But, the majority of nests that hold eggs are without these rim decorations. The lining proper is usually black hair.

The Whitethroat breeds commonly about hedges and country lanes, commons and open spaces, on the outskirts of woods and plantations and, in fact, in very similar places to those chosen by the Willow-Warbler. I have found occupied nests of these two species within twenty-five yards of one another. Nests are usually in meadowsweet, low brambles, nettles or wild raspberry and quite a number are built to the grasses growing up through small bushes or sapling trees in plantations. In a normal season I would give 26 May as the average date for a full clutch of eggs but, in the hot summer of 1943, I flushed a hen from newly-hatched young in a bed of nettles and cleavers on 22 May. This brood left the nest on 2 June. Data on fifty-five broods give 3/2, 11/3, 18/4 and 23/5 young, or an average brood of 4.1 young. Injury-feigning by the adult has been noticed when the bird has been disturbed from both eggs and young. Occasional broods of young are still in the nest until the last week of July and later ones up to 14 August which date certainly suggests a second brood.

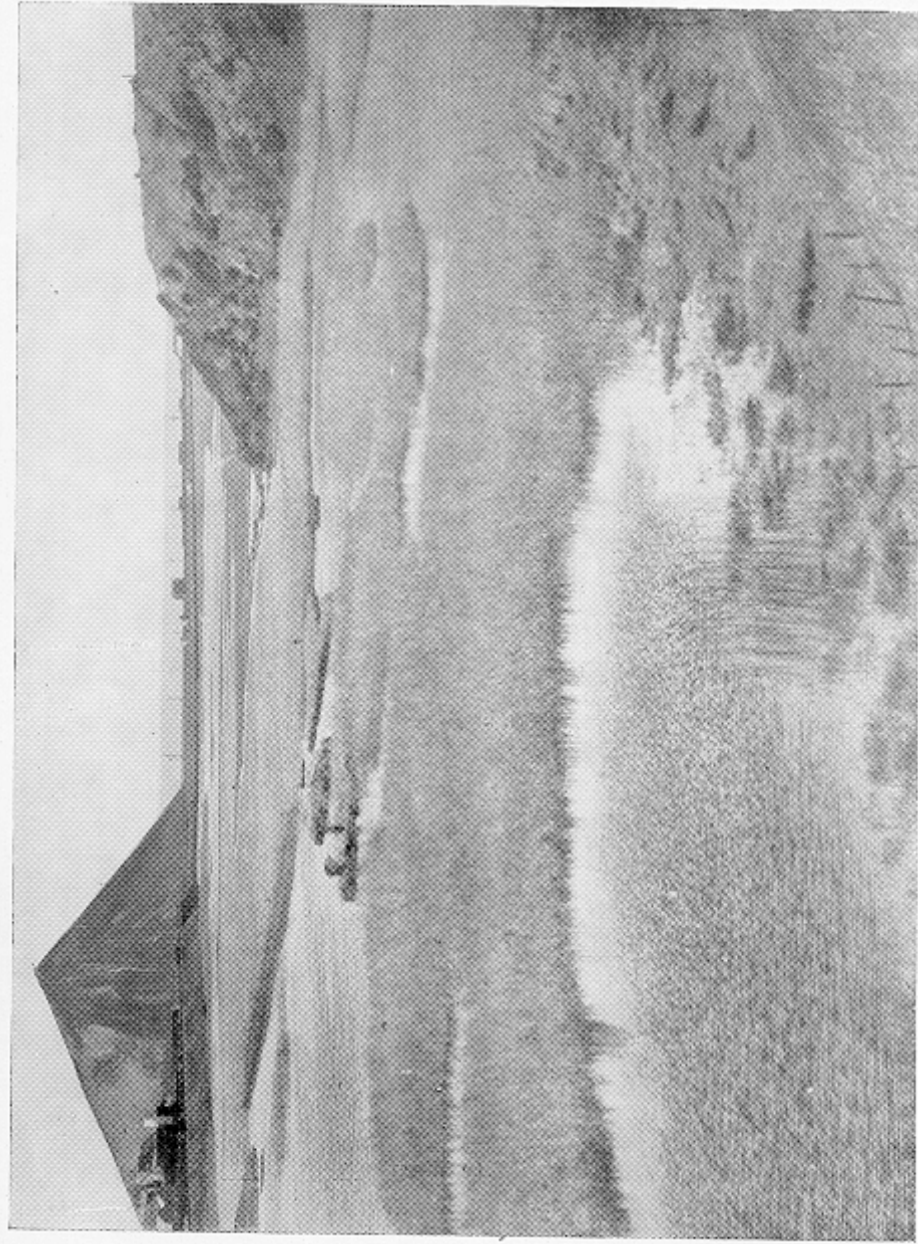
Passage-movement, often in association with the Willow Warbler, begins during the third week of July and continues until the last week of September. At first there are just single birds,

or odd twos or threes but there is often a considerable rush of migrants in the period 6-12 August and again 20-26 August. On autumn migration, the Whitethroat is found oftener in cornfields and turnip fields than is the Willow-Warbler.

The loud brief song of the Lesser Whitethroat is a pleasant song but it is the low warbling which runs on without a break for many seconds that is the beautiful part of it. In addition, there is a bell-like note, very strong and clear, repeated in the course of the song, and it is this bell-like note that reveals the identity of the singer. In display, the cock will fly through the air with vertical beats of his wings, at the same time singing his song.

The Lesser Whitethroat arrives in about the third week of May, the 21 May being an average date, and it leaves in August. It has been found nesting in Dalston parish, usually in tall and unkempt hawthorns, and at heights of from five to six feet. A hen was flushed from five eggs on 24 June 1936, and another from four eggs on 20 June 1938. A brood of two young was noted on 24 July 1941 and one of two fledglings on 9 August 1943.

February 1951.



SIDDICK POND, WORKINGTON

AUSTIN BARTON

## SIDDICK POND AND ITS BIRDS

By RALPH STOKOE.

With a History contributed by W. McKnight Bell, the Topography and Geology by W. Fletcher, Analyses of the Water by Olive Stokoe, B.Sc., and G. Hughes, a List of Flowering Plants

by J. Denys Hinde and a List of Mosses by Robert Walker.

### INTRODUCTION.

The many and more spectacular places of ornithological interest in Lakeland so often draw the attention of the West Cumberland birdwatcher that Siddick Pond has frequently and, one feels, unjustifiably been overlooked. The pond may not compare in its wealth of bird life with some of the east coast or midland reservoirs and sewage farms, but it is unique in West Cumberland and, being so, is of great value.

It is remarkable that something approaching a sanctuary should have become established here without conscious action by any interested body, and in the kind of surroundings. Yet such it is, at any rate in winter. An occasional poacher may try for a few ducks on a winter's evening but, for the most part, the birds are not molested if they are prepared to suffer passing trains, buses, cars, Sunday afternoon strollers and other passersby. Newly-arrived birds are distinguishable by their fear of these intruders; the older residents of the season are unconcerned, if the approach is not too close. Only nesting birds are harried, and these unmercifully be they in or out of the water, by boys and youths from the neighbouring villages.

The existence of the pond has not remained unchallenged. Situated as it is, near the edge of the ever-expanding industrial Borough of Workington, the site has appeared suitable for "development", first as a colliery tip and, more recently, as a refuse dump. These dangers have not been ignored and, largely due to the efforts of W. McKnight Bell of Workington, not only have they not materialised but the pond has now also been scheduled as a place of special scientific interest by the Nature Conservancy. A housing estate has recently been built at North-side which overlooks the pond from the south. From this comes a great deal of disturbance to what was previously the most secluded part. The recurring danger that the pond should cease to exist! prompted several local naturalists to take concerted action, from which the recognition by the Nature Conservancy and a report! completed in 1950 resulted. This paper is an expanded and up to date version of the earlier report, which dealt only with the birds. In its present form it falls into two parts. the first dealing with the environment, the second with the birds.

The pond is seen to have been a swampy depression in the course of an old channel of the once deltaic River Derwent lifted above sea level as part of the raised beach and now flooded as a result of excavations, the building of railway embankments, and other works but not, it is thought, of subsidence. The water in the pond is polluted and is rather harder than is usual in the district. The large quantity of excreta left by roosting Starlings may contribute to the pollution. The constituents giving rise to the pollution and hardness will enrich the water, producing the vigorous plant growth and quantities of aquatic invertebrates which support large numbers of birds. In autumn and spring especially, the average density of water-associating birds may exceed thirty to the acre, or one to every square of thirteen yards.

The strong and extensive growth of reeds, pondweeds and other water plants gives the pond much of its character and, by providing cover and food in abundance for birds, its interest for the birdwatcher. The densely overgrown Oyster Bank, too, makes an important contribution to the avifauna. The list of mosses is of interest, especially as the lime content! of the water is relatively high and because it includes one lime-loving species not known until recently to be present in Cumberland.

An indication of some of the types of animal food taken by the birds may be obtained from the section on the invertebrates, especially when read in conjunction with the paper, "Food of Birds", elsewhere in this volume. Frogs and certain species of fishes are numerous. The mammals, except for the Otter on its occasional visits, the Water Vole, and possibly the Fox, have no great importance in the ecology of the pond. George B. Pinguey of Seaton and Isaac Nicholson, senior, of Flimby have provided a great deal of the information on the vertebrates and, but, for them, no sort of an account of these animals would have been possible.

The history from early times shows that the growth of the pond from the small one shown on the Ordnance Survey maps which were made from the surveys in 1859-1864 and which have never been revised in this respect, dates from about 1870.

In the second part of the paper, the notes on each species have been summarised from observations made during the years 1921 to 1951. Records of special interest from earlier years have also been included. The vast majority of the observations used are recorded in the diaries of the following contributors:

Dr. Mungo McKerrow	1921 - 1951
Herbert Valentine	1922 - 1936
Ralph Stokoe	1938 - 1951
Robert Walker	1947 - 1951

Observations of special interest made by these contributors have been acknowledged in the text, as has information supplied by other contributors. To supplement the facts previously

available a series of, so far as possible, weekly observations was made during 1947 and 1948 in which Austin Barton and W. McKnight Bell took part with McKerrow, Stokoe and Walker. The last named maintained a regular and very frequent series of visits during the autumns of 1948 and 1949, and daily observations were made by Stokoe during March, April and May 1951. This recent work has to some extent filled gaps which existed in the knowledge of the birds of the pond. Until 1947, no systematic observations had been made. Visits usually had been at weekends or in the evening when the risk of disturbance was greatest, and interest had tended to be aroused only when the flocks of ducks and waders were most in evidence. Records for the months of June, July and August were scarce. Information is still needed on passerine birds, especially some of the less common of the migrants as the old birdcatchers' records suggest, but knowledge of the numbers and occurrence of the commoner species is now fairly good. Only fully substantiated records have been included. Where published records have been used supporting evidence has not been given; in other cases details have been provided where thought necessary.

The information given under each species is a summary of the status of that species at the pond, with details of numbers, movements, dates of arrival and departure, nesting and observations of special interest. It also appeared that, if the maximum number of each species of duck observed in each month was compared, a good idea of the variation throughout time year could be obtained. If it be remembered that the figures given for each month do not necessarily relate to the same year, and that all figures are maxima and not averages, a fair comparison is obtained. Where numbers are exceptionally large this, with any known reason, is stated. Averaged figures were not used because, on the occasions of many observations, the possibility of previous disturbance could not be dismissed and it was felt that they would give a less accurate comparison than the present method. The same method was not applied to waders or other birds, although comparison figures are given for a few other species, because extraneous factors such as tides, water level and extreme weather conditions affect their numbers to an extent too great for any real information to be derived.

Changes of weather and tide have a considerable effect on the numbers and species of birds found at the pond. Such investigation as has been done recently suggests interesting relationships the conclusions are stated in the text as precisely as the facts justify at present. Apart from individual species to which special attention has been paid, the general factors involved are fairly obvious. The water level, especially at migration time, is very important. When considerable stretches of mud are exposed, there come for a time those waders which otherwise do not linger, or even appear. When the pond freezes it becomes nearly deserted and rarely recovers its normal population until the

spring. There is a habitual movement of waders and, when they are disturbed, of ducks between the pond and the sea and the shore which, in the case of the waders, is related to the movements of the tide. The morning and evening flights of ducks are not found now to the same degree as they used to be when wild-fowling was a more common practice. Even the waders which are regular visitors do not follow the tide as rigidly as one might expect, when conditions are suitable at the pond. Gales at sea bring in the sea ducks such as the Scaup-Duck.

No attempt has been made to draw any far-reaching conclusions. The object has been mainly to collect and present what is known about Siddick Pond, so that if the day should come when it no longer exists as we now know it—indeed, much of its seclusion has already gone—a record will remain which may be of value. Also, those in whose hands the fate of the pond lies may be influenced by this demonstration of the fact that the place is not without interest.

Invaluable help has been given by the contributors, who have supplied accounts on special subjects, or made available their private records, and assisted in many ways which it is not possible to set out in detail.

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#### PART I. THE ENVIRONMENT.

##### HISTORY.

Siddick appears to be so called because there was, in the eighteenth century or so, “a very famous horse course” known as the Sigget or Sea Gate on the sandy barren land to the north of the River Derwent in the Parish of Camerton.

The place seems to have been known to the Romans between the years 130 and 300 as there are remains on the Oyster Bank of a signal station in a line of such stations from St. Bees in the south to Bowness-on-Solway in the north and at the western extremity of Hadrian’s Wall. In a field adjoining and on the east of the railway line lay, it is authoritatively considered, a Roman fortlet to accommodate the men working this and the adjacent! signal stations at Risehow and St. Michaels Mount, Workington.

The site of the fortlet carries the two solid fragments of masonry, long known as Burrow Walls, which are forty-five and fifteen feet long, and eight and ten feet high with an average width of four feet. They consist of core clearly showing masonry of two ages and are considered to be Norman work of the second period with later mediaeval work added to the top of it.

It is believed that these walls are part of the remains of the original house of the Curwen family which sprang from Orme (a great-grandson of Elgiva daughter of Ethelred King of England) who settled here with his family in the eleventh century, and remained until the latter end of the twelfth century, when Patric de Culwen (now Curwen) moved to the present site of Working-ton Hall on the south of the River Derwent.

Nothing of interest appears to have occurred in the neighbourhood between the thirteenth century and the eighteenth century and, apart from the reference to the horse course, local records do not show any developments.

Between 1860 and 1880, there was some considerable activity because, in 1861, two of Sir James Lowther's old coal pits at St. Helens were re-opened and enlarged and they were worked until 1887. In 1870, however, the present pit was sunk and in 1878 St. Helens Colliery came into being, where it has continued working up to the present time.

In 1875, Lord Lonsdale, Lord Leconfield and Mr. H. F. Curwen promoted a Bill for a railway of their own from Cleator Moor through Workington to Maryport and, although opposition was made by the London and North Western Railway Company and the Furness Railway Company, the Act was passed. The new company, under the name of the Cleator and Workington Junction Railway, was incorporated in 1876 and between then and 1883 lines, which form the boundaries of the pond on the west and south, were built and traffic has continued to use them to this day.

There would not seem to be any reason to assume that the pond was caused through subsidence, owing to the working of the coal mines, or in the making of the embankments for the railway, but it does seem that the site has always been liable to flooding. This would no doubt be aggravated by the railway embankments, and that is probably how the pond, as it now is, came into existence.

There is a small brick building at the east end of the pond, and it is understood that this was a pumping house for the North Western Hematite Company which operated farther along the coast to the south-west of the pond. Between 1930 and 1940, warm water, from the compressor used at St. Helens Colliery to ensure a flow of clean air through the Pit, was pumped into the pond, and passers-by would frequently see the resultant steam rising from the surface of the water.

## TOPOGRAPHY AND GEOLOGY.

The pond is situated within half a mile of the right bank of the River Derwent, between Northside and Siddick, and less than a mile to the north of Workington. At its northern end it is less than four hundred yards from the Solway Firth. Except during extremely wet periods, it is approximately a thousand yards in length from north to south, and two hundred and fifty yards across at its widest part. About a third of the way from its northern end it is almost divided by a narrow peninsula which juts out from the north-easterly shore. Its area, including open water and reed beds, is thirty-two acres and its surface is twelve feet O.D.

It is bounded on the west, and partly on the south by high railway embankments. Water is culverted away beneath the westerly embankment, so forming a smaller or secondary pond. The main Workington to Carlisle road runs along part of its northern boundary, and the eastern boundary is pasture land and an old sea cliff known as the Oyster Bank. The colliery tip towers high above the northern end and nearby there is a patch of shale refuse.

No historical record is available to show to what extent there were 'lagoons' or flooded expanses north of Workington in preRoman times. The site of the Roman fortlet now occupied by Burrow Walls, on the rising ground to the east of the pond does, however, help to support a theory that the part west of it was in ancient times a swamp which led the Roman engineers to build on stable ground and as near to the sea as possible.

The St. Helens Colliery Company (now National Coal Board) and the old North Western Hematite Company, the ruins of whose ironworks stand to the south-west of the pond, used to extract water for use in their boilers. Up to a few years ago, the colliery company ejected heated water into the pond. It is believed that these concerns, realising the value of the pond as a reservoir, had channels excavated in it to obtain a greater head of water. Water from the River Derwent was also pumped into a reservoir on Hawk Hill, Calva, from where it flowed by gravity to increase the supply in the pond.

The Cleator and Workington Junction Railway Company built the embankments on the west side and across the south end of the pond and these have had the effect of helping to hold back the flow of water into the outlet stream. This is particularly noticeable when there are abnormally heavy rains, which cause the level of the pond to rise by as much as three feet. During the last twenty-five years the water level has submerged fences which divided adjoining grassland. There is, however, no great depth of water, nine to ten feet being the greatest and this in the excavated channel running north-west in the main part of the pond and parallel to the western railway embankment.

The pond lies in an ancient channel or estuary of the River Derwent. The depression in which the pond water is held is only twelve feet above sea level. There is little doubt that in preglacial times it opened to the sea where the St. Helens Colliery now stands. It had a connection with the deltaic River Derwent in an interglacial period, the channel connecting with the river at Nortlisside, a hamlet south of the site. It may then have functioned as one of the mouths of the Derwent, as there is evidence of estuarine alluvium below the top dressing of silt on the pond floor brought down by Ling Beck, the main feeding stream. This alluvium probably overlies a thin layer of gravel and clays, below which are the carboniferous rocks of the Whitehaven series of sandstone containing the productive coal seams worked at the St. Helens Colliery. At the base of the old cliff known as the Oyster Bank, the lowest clay is equivalent to the lowest clays of the Derwent valley, while the loam and sandy clay with lenticles of gravel probably represent the Derwent valley gravels.

During the Ice Age there were successive periods of high and low sea levels with a consequent inundation of the Siddick estuary due to the depression of the land by its burden of ice. The final melting of the ice and elevation of the land have left the present raised beach of gravel. This raised beach, which fringes the coast north of Workington, blocked the ancient estuary and caused the terraces of loam on either side of the river bed. At Siddick there is a gentle slope from the present beach up to nearly thirty feet O.D. During storm tides there may be some seepage of sea water through the raised beach gravels at the northern end of the pond.

The main feeding stream is Ling Beck which rises in Smallpox Hospital Plantation on the swampy ground between High Seaton and Broughton Moor at the 300 foot contour, two miles inland from the pond. The drainage area of the beck is two and a half square miles of the high land between the 100 and 300 foot contours of the Seaton plateau. Near its source the beck passes through peaty, heather-covered land. There is a considerable deposition of silt and sand on the pond floor, doubtless brought down by Ling Beck because it passes through alluvium deposits in a depression in its course at High Seaton. In Hazel Gill it runs through glacial bands of fine sand, gravel and clay silt. It has washed away the surface deposits in the gill and flows for a time over hard fine sandstone, purple sandstone and red mudstone. Leaving the gill, it flows south-west in an almost straight line over boulder clay and through a terrace of loam, finally entering the depression holding the pond water.

There are two smaller feeding streams, one culverted below the railway embankment south of the Oyster Bank, and the other culverted below the embankment where the Calva Branch Line joins the main Cleator and Workington Railway. Both of these rise in the surface drift material on the high land to the east and

pass over brown boulder clay, red sandy clay, arid grey boulder clay with gravel. There is a slight deposition of sand and silt into the pond at the south end by these two streams.

There is one outlet stream, also known as Ling Beck. It is open from the pond until it reaches the hamlet of Northside where it is culverted under the Workington to Carlisle road and under the houses until it enters the River Derwent. Ling Beck is tidal in spring tides up to the road culvert where there is a grating across the watercourse which prevents any large fish from finding their way into the pond. The photograph by Austin Barton shows the pond as viewed towards the north-west. St. Helens Colliery tip appears at the top left. Below it are time bridge over time Workington to Carlisle road, and the beginning of the railway embankment which runs all along the south-western side of the pond. The shale tipplings are to the right of the bridge. At the top right there is part of the Oyster Bank with the level ground at its foot running out into a spit, narrowed by perspective, which marks the outlet of Ling Beck. Beyond this and parallel with the road lies the long thin line of the peninsula. The reed beds which fill most of the south-east end of the pond are prominent, and clumps of Hard Rush and Soft Rush show to time bottom right. There are small island-like patches of Amphibious Persicaria between the peninsula and the road.

#### ANALYSES OF THE WATER.

The sampling of the pond for analysis was not such as to give absolute figures or to determine seasonal variations, but was sufficient to allow the levels of the constituents to be determined with reasonable accuracy for the time of year when the samples were taken, namely November, in 1951.

#### CHEMICAL.

Metallic and Radicles, etc.	Acidic		Parts	per million.
Sodium	...	...	...	6.0
Potassium	...	...	...	6.5
Magnesium	...	...	...	4.0
Calcium	...	...	...	47.0
Iron ,,,	,,,	...	,,,	1.0
Chloride	...	...	...	30.0
Sulphate	...	...	...	23.0
Carbonate	...	...	...	22.0
Silicate	...	...	...	9.0
Free Ammonia	(NH.)	...	...	1.4
Fixed Nitrate	...	...	...	6.1
pH ...	...	...	...	6.9

The slight hardness of the pond water, while not general in the district, is not sufficiently high to be unusual. The sodium

content is low enough to suggest that seepage back from the sea is not normally occurring to any appreciable extent. Thus time high chloride content may be due to pollution, as unpolluted surface waters have a content of about twieity parts per million.

#### BACTERIOLOGICAL.

The results of this analysis are interesting in that they indicate a considerable degree of pollution of the water.

Number of viable bacteria per c.c. = 200 colonies after incubation at 37 degrees Centigrade.

Number of viable bacteria per c.c. = 856 colonies after incubation at 25 degrees Centigrade.

Probable number of *Escherichia (Bacillus) coli* in 100 c.c. of water  
= 18.

Results of 10 and over indicate bad pollution, and pure water should not contain more than 2 per 100 c.c.

It was not determined whether the pollution was due to vegetable or sewage decomposition or other causes.

#### FLOWERING PLANTS.

The predominant plants of the pond margin, growing either in or out of the water, form a patchwork in some parts fairly well defined and in others run together. Their distribution is influenced by the slope of the ground and the amount of protection there is from the prevailing south-westerly wind. Time high railway embankment shelters the whole long south-western side of the pond. Two lengths of grassy ground slope imperceptibly down from the base of this embankment to the water's edge. The more southerly is grown with Reed-grass for several yards back from the water next which both of them have a fringe of Common Spike-rush.

About midway on the opposite side, north-westerly from the end of the Oyster Bank to the peninsula, the shore vegetation is more varied. Mingled patches of Hard Rush and Spike-rush are followed by a bed of Jointed Rush set with a strip of Hammer Sedge and fronted with Spike-rush. A mixture of Hard Rush and Soft Rush then continues to an expanse of Spike-rush inter-grown with Jointed Rush at the base of the peninsula where Hard Rush and Soft Rush spring together again. Spike-rush in patches grows at the north-west end and Hard Rush and Soft Rush at the opposite end. The peninsula and the open north-east shore become clothed with Ragwort in summer.

Other plants of the margin are Yellow Iris. Watercress, Brooklime, Forget-me-not and Horsetail. The railway embankment to the south-west has coarse vegetation growing in the clinker of which it is made, most noticeable being Knapweed. Yarrow, Bramble, Kidney Vetch, Scurvy-grass, Hawkweeds,

Yellow Bedstraw, Plantain, Yellow Toadflax, Marguerite and Restharrow. The Oyster Bank has a thicket of Hawthorn, Willow and Elder, with Brambles, Wild Rose, Nettles and Gorse, the bushes growing down to the water's edge. The rest of this side of the pond is flat and heavily grazed.

Actually in the water there are, foremost, the beds of Common Reed which fill the south-east end of the pond. An isolated strip of reeds grows at the south-western side where the railway embankment falls directly into the water between the two stretches of grassy ground. Tangled masses of Amphibious Persicaria spread over much of the open water, and in association there are Water Crowfoot, Water Starwort, Water Plantain and three species of Pondweed.

With the exception of the Rushes and the Sedge, which have kindly been determined by R. E. Parker. B.Sc., the following plants were noted on two visits in 1951.

Growing in the pond or at the margin.

Water Buttercup—*Ranunculus peltatus*  
 Common Watercress—*Nasturtium officinale*  
 Water Forget-me-not—*Myosotis palustris*  
 Brooklime—*Veronica beccabunga*  
 Amphibious Persicaria—*Polygonum amphibium*  
 Water Starwort—*Callitriche* sp.  
 Broad Pondweed—*Potamogeton polygonifolius*  
 Curly Pondweed—*Potamogeton crispus*  
 Slender Pondweed—*Potamogeton pusillus*  
 Common Water Plantain—*Alisma plantago-aquatica*  
 Yellow Iris—*Iris pseudacorus*  
 Hard Rush—*Juncus inflexus*  
 Jointed Rush—*Juncus articulatus*  
 Soft Rush—*Juncus effusus*  
 Common Spike-rush—*Eleocharis palustris*  
 Hammer Sedge—*Carex hirta*  
 Reed-grass—*Phalaris arundinacea*  
 Common Reed—*Phragmites communis*  
 Water Horsetail—*Equisetum fluviatile*

Growing on the railway embankment or on the Oyster Bank,

Meadow Buttercup—*Ranunculus acris*  
 Bulbous Buttercup—*Ranunculus bulbosus*  
 Meadow Bittercress—*Cardamine pratensis*  
 Sea Campion—*Silene maritima*  
 Ragged Robin—*Lychnis flos-cuculi*  
 Red Campion—*Melandrium dioicum*  
 Gorse—*Ulex europaeus*  
 Kidney Vetch—*Anthyllis vulneraria*  
 Tufted Vetch—*Vicia cracca*

Common Vetch—*Vicia sativa*  
 Meadow Pea—*Lathyrus pratensis*  
 Meadowsweet—*Filipendula ulmaria*  
 Brambles—*Rubus* spp.  
 Lady's-mantle—*Alchemilla xanthochlora*  
 Wild Roses—*Rosa* spp.  
 Hawthorn—*Crataegus monogyna*  
 Willow-Herbs—*Epilobium* spp.  
 Wild Angelica—*Angelica sylvestris*  
 Cow-parsnip—*Heracleum sphondylium*  
 Common Elder—*Sambucus nigra*  
 Crosswort—*Galium cruciata*  
 Goose grass—*Calium aparine*  
 Common Valerian—*Valeriana officinalis*  
 Common Daisy—*Bellis perennis*  
 Marguerite—*Chrysanthemum leucunthemum*  
 Yarrow—*Achillea millefolium*  
 Marsh Ragwort—*Senecio aquaticus*  
 Ragwort—*Senecio jacobaea*  
 Spear Thistle—*Cirsium vulgare*  
 Knapweed—*Centaurea nigra* (agg.)  
 Dandelions—*Taraxacum* spp.  
 Hawkweeds—*Hieracium* spp.  
 Toad flax—*Linaria vulgaris*  
 Germander Speedwell—*Veronica chamaedrys*  
 Red Bartsia—*Odontites rubra*  
 Water Mint—*Mentha aquatica*  
 Hedge Woundwort—*Stachys sylvatica*  
 Marsh Woundwort—*Stachys palustris*  
 Ribwort—*Plantago lanceolata*  
 Docks—*Rumex* spp.  
 Common Nettle—*Urtica dioica*  
 Willows—*Salix* spp.  
 Wild Hyacinth—*Scilla non-scripta*  
 Common Horsetail—*Equisetum arvense*

## MOSSES.

As will be seen from the list given below, the mosses to be found in and around Siddick Pond are for the most part common lowland species. The occurrence of *Aloina ambigua* is, however, of interest since I found it on the Oyster Bank in 1947 only a few months after discovering it in another locality near Workington, and as this latter occurrence was the first record of this moss for Cumberland, v.c. 70, Siddick Pond had almost the distinction of providing a new vice-county record. Nowhere, except perhaps on the, Oyster Bank where *Eurhynchium praelongum* occurs in dense mats, do mosses form the dominant vegetation, and the pond itself is strangely devoid of aquatic or paludal species.

*Atrichum undulatum*  
*Polytrichum juniperum*  
*Fissidens viridulus*  
*Fissidens bryoides*  
*Ceratodon purpureus*  
*Dicranella varia*  
*Dicranella heteromalla*  
*Dicranum scoparium*  
*Tortula muralis*

*Aloina ambigua*  
*Weissia controversa*  
*Funaria hygrometrica*  
*Leptodictyum riparium*  
*Amblystegium serpens*  
*Brachythecium rutabulum*  
*Eurhynchium praelongum*  
*Eurhynchium riparioides*  
*Hypnum cupressiforme*

#### INVERTEBRATES.

These notes on a few of the many forms of invertebrate animal life found in and around the pond, are based on two collecting visits; one in April and the other in November 1951. No attempt was made to include a representative sample of any species living out of the water in the collections, and few are described. Catches of the aquatic species were made at a number of places round the pond, all in water not exceeding three feet in depth and at distances up to ten yards from the bank. Due to the fact that the water level was considerably above normal in November, several of the drags were made over what was grassland in the summer; nevertheless many specimens were obtained.

Miss E. M. Smith, B.Sc., of Workington, identified the April catch, and Mr. F. H. Day, F.R.E.S., of Carlisle, the November catch.

Several Roundworms (Nematoda) were obtained from silted parts of the bottom on both occasions. Most members of this group are parasites.

In April, Flatworms (Platyhelminthes) were found throughout time pond, except in heavily silted parts. They were all *Planaria* spp. These worms are carnivorous and are scavengers. They are probably not taken by birds intentionally but they could be swallowed along with vegetable matter.

It has been said that leeches are very common in the pond and that fishermen wading in it have found their feet covered with them. The superficial resemblance which flatworms bear to leeches, their adhesive powers, and their presence in considerable numbers may account for this statement. Neither leeches nor any other annelid worms were obtained among the two catches.

Many molluscs were found in all parts of the pond. They were mostly Pond Snails *Limnaea* spp., and Trumpet Snails *Planorbis* spp., while in the muddier parts the Lake Limpet *Ancylus lacustris* was common. These small molluscs, all of which here were under half a centimetre in length, are taken by various species of ducks and other water birds, and may also be swallowed by birds whose main food is water plants.

Several of the Dragonflies (Odonata) are commonly found in summer. Some nymphs of the small black and blue damselfly, *Caenagrion puella*, which is often very numerous about the reed beds, were obtained in November.

Water-boatmen (Corixidae) formed the most active and obvious section of all catches from less silted parts. Seven species of these bugs have been identified. *Corixa praeusta*, *C. bonsdorffi* and *C. concinna* were the most common. *C. striata*, *C. distincta*, (*C. punctata* = *geoffroyi* and *C. panzeri* were the others found. Pond-skaters (Hydrometrida~) have been seen in large numbers on the still water of the reed beds in sunnier. Water bugs, and water beetles, are taken by diving and dabbling ducks, grebes and waders. A specimen of the bug *Nabis major* was obtained in November. It is not an aquatic species, its normal habitat being sandhills near the sea.

Several water beetles were found, two of which have been identified as *Laccophilus obscurus* and the small *Hydroporus palustris*. Both are common species.

Hatches of gnats and midges occur from April or, if the weather is mild, late March onwards and they may be found until October and November. Larvae of some species have been recovered from the water, and members of the families Borboridae, Culicidae and Anthomyidae have been identified in the adult state. The presence of large numbers of these flies (Diptera) is important in relation to the bird life.

Specimens of a water mite *Hydrarachna* sp. have been obtained. This small arachnid appears to be fairly common, especially in muddier parts of the pond.

Great numbers of the crustaceans *Cyclops* and *Cypris* were found everywhere. Two specimens of *Cypris* were very large, measuring over two millimetres in length.

#### VERTEBRATES OTHER THAN BIRDS.

As a result of the many visits made by birdwatchers and formerly by birdcatchers, gunners and other people attracted by the wild life of the pond, a certain amount of random information regarding the mammals, amphibians and fishes has been collected.

The Common Mole *Talpa europaea* abounds in the field bordering the pond on the northern side. Its runs, evidenced by the molehills, approach very close to the edge of the water at normal levels and must frequently be flooded. The Hedgehog *Erinaceus europaeus* has been found. The Oyster Bank and the railway embankment are probably its favourite haunts.

Bats, unidentified as to species, have been seen over the pond at dusk.

The Fox *Vulpes vulpes* is a frequent visitor. No earth is known but individuals do lay up during the daytime in densely overgrown parts of the Oyster Bank and have been disturbed

from there. They must exact a certain toll from the birds and other animal life. A less frequent visitor, the Otter *Lutra lutra* has appeared at the pond from time to time. There is no evidence that any have ever remained for long. Otters are great wanderers and it will be as such that they reach the pond. The Stoat *Mustela erminea* and the Weasel *M. nivalis* are regular visitors and almost certainly residents.

All the old county histories refer to the land lying between Seaton and the sea, which was once sandhills, as a well-known "coney-warren". The Rabbit *Oryctolagus cuniculus* is certainly still common but not in such numbers as to warrant special comment, cultivation and trapping having played their part. More worthy of mention is the fact that the Brown Hare *Lepus europaeus* is relatively common. Hares are frequently put up on the Oyster Bank and in nearby fields and, being so conspicuous, are difficult to overlook, unlike more furtive creatures which may be more numerous.

Few of those smaller rodents, the voles and mice, have been noticed. The Water Vole *Arvicola amphibius* was once very numerous and may still be found in the reed beds. An unexplained double fatality involved a Black-headed Gull and a Long-tailed Field Mouse *Apodemus sylvaticus*. They were lying dead alongside each other near the edge of the pond. Most of the tail of the mouse was missing and the whole situation suggested an owl or a cat as a third party.

The Common Frog *Rana temporaria* is exceedingly numerous. In early spring frogs may be seen spawning in all the shallower and sheltered water. The spawn, tadpoles and adults are eaten by herons, ducks and other waterfowl.

The only information available on fishes is supplied by fishermen who formerly found a day at the pond well spent. Accordingly, there are few records of species not normally sought by anglers. The outflow stream, which has been piped under North-side and which discharges into the River Derwent, has had a grating fixed over its outlet so as to prevent migratory fish from running up into the pond. The date when this grating was put in place is not known but it would probably be in the 1920's. Since then the pond has lost much of its attractiveness to fishermen.

The Trout *Salmo trutta* in its two forms, the Sea Trout and the Brown Trout, used to be very numerous. Apparently, when the pond was low, it used to be the practice for several men to take shrimping nets and "trawl" across the pond in line. Large catches were made in this way. Trout are still there and have been seen rising to take flies, but they are not so abundant now.

The Eel *Anguilla anguilla* and the Three-spined Stickleback *Gasterosteus aculeatus* are recorded as common. The effect of the grating on these species is not known, but for some reason the Stickleback, once stated to be present in "myriads", has

considerably decreased in numbers. The Kingfisher has rarely been seen since this decrease took place.

A less-expected and formerly common species, the Flounder *Platichthys flesus*, may have been prevented from reaching the pond by the grating. Since the outlet stream is tidal, at least for part of its length, the presence of Flounders is not so surprising as would appear because these fish ascend tidal rivers for considerable distances.

The Lampern or River Lamprey *Lampetra fluviatilis* has been found at the pond.

## PART 2. THE BIRDS.

The contributors referred to by initials in the text. Austin Barton of Workington, W. McKnight Bell of Workington, A. Hall, senior, of Seaton, Dr. M. McKerrow of Workington, Isaac Nicholson, senior, of Flimby, G. B. Pinguet of Seaton, Ralph Stokoe of Maryport, H. Valentine of Seaton, Robert Walker of Workington, John Wilson of Workington.

THE CARRION-CROW---*Corvus corone*. A regular visitor, foraging for food, being a resident in the surrounding countryside. Usually only single birds or pairs are present but a party of six has been seen. In 1948 a pair made a nest in the latticework of an electricity pylon which stands above the pond at the south-east end. The nest was at a height of about forty feet. from the ground.

THE ROOK—*Corvus frugilegus*. A common visitor at. all seasons. Fewer birds are seen in the late summer than at any other time but large flocks occur in the autumn. There are several rookeries in the neighbourhood, the nearest being half a mile away. A Rook was seen to attack a Short-eared Owl. The owl escaped by soaring and was able, without much difficulty, to keep above the Rook which broke away at about. 300 feet.

THE JACKDAW—*Corvus monedula*. A regular visitor. During the breeding season only nearby nesting birds visit the pond. Flocks of twenty or more birds have been noticed in September. They are often found feeding in association with Rooks and Starlings.

THE MAGPIE—*Pica pica*. A not infrequent visitor, especially in recent years. Usually seen singly or in pairs, Magpies keep to the bushy slopes of the Oyster Bank, the adjacent fields and the railway embankment.

THE STARLING—*Sturnus vulgaris*. A very common visitor, being exceedingly abundant in roosting flocks. The extensive reed beds at the eastern end of the pond are a roosting site of

long standing, having been used as such for over fifty years. In June the reeds have reached their maximum growth and, from that time onward, Starlings arrive in huge numbers at sunset, some flocks coming a considerable distance. The pond is a focal point for all birds within a radius of twelve or more miles. On arrival they congregate on nearby electricity and telephone wires and on roofs and, from sunset until nearly all the light has faded, their numbers grow. At dusk the birds, on sudden impulse, rise and, after much spectacular aerial manoeuvring, swoop down to the reeds with a tremendous whirr of wings. Their combined weight bends the reeds almost down to water level, so much so that some of them have been seen bathing from their perches. As the year advances, the reeds get broken down, which gradually limits the space available, and some birds then move their roosting place to the willow bushes on the slopes of the Oyster Bank. After a few months, space becomes so very limited that it is probably the reason for the annual desertion of the roost in mid-winter. The date of desertion varies from year to year but it is usually in December.

Large roosting flocks have been seen as early as 20 June. Peak numbers are reached in August. On 11 August 1947, a careful estimate indicated a total roosting population of about 15,000 birds. These numbers are maintained until November. In 1948, autumn flocks reached a maximum of approximately 20,000 individuals. The high proportion of juveniles in the summer roosting flocks, perhaps two-thirds of the total, suggests that the early assembly is of home-bred and home-breeding birds. In autumn they are apparently joined and replaced by continental immigrants. The only albinistic bird seen in all these thousands was found in November 1951. Its wings and tail appeared white, but the head and body were a fawn colour. The beak and legs were normal.

At all seasons some Starlings may be found feeding in the fields and on the muddy verge of the pond.

**THE GREENFINCH**—*Chloris chloris*. A visitor to the fields. Oyster Bank and railway embankment. At least one pair may nest on the Oyster Bank. A flock of twenty birds was seen in March 1951 near Burrow Walls. Such flocks are not unusual in the neighbouring fields.

**THE GOLDFINCH**—*Carduelis carduelis*. An increasingly frequent visitor. Flocks of up to fifty birds have recently been seen between July and October. Goldfinches may possibly nest on the Oyster Bank, four newly fledged young having been seen there on 29 June 1948.

**THE SISKIN**—*Carduelis spinus*. An occasional winter-visitor. Migrant flocks were seen on the Oyster Bank by J.W. and T.N. with some regularity up to twenty years ago.

THE GREENLAND REDPOLL—*Carduelis flammea rostrata*. As mentioned in *The Birds of Lakeland*, this redpoll has been recorded locally prior to 1905 and, in fact, has been taken by IN. at the pond. The “finch” bill was particularly noted by J.W. and other observers familiar with the commoner subspecies.

THE LESSER REDPOLL—*Carduelis flammea cabaret*. The only dated record is that of a flock feeding along the railway embankment on 23 December 1913. Flocks continue to visit the Oyster Bank and the embankment (luring migration and local winter movements,

THE TWITE—*Carduelis flavirostris*. A suspected winter-visitor. There is a record of two birds in a mixed flock on 5 January 1947.

THE LINNET—*Carduelis cannabina*. A common summer-resident, winter-visitor and passage-migrant. There are many suitable nesting sites in the bushes on the railway embankment and on the Oyster Bank. On migration, and particularly in autumn, a steady stream of small parties of birds may be seen. Larger flocks, numbering several hundred birds, have been encountered in September. Winter flocks of up to fifty or sixty birds are regularly found feeding about the edge of the pond.

THE CHAFFINCH—*Fringilla caelebs*. A visitor at all seasons, found on the Oyster Bank and railway embankment. One or two pairs nest, but winter-visitors are neither regular nor numerous for so common a bird. Flocks visit neighbouring fields.

THE BRAMBLING—*Fringilla montifringilla*. An occasional winter-visitor, principally to the Oyster Bank and reported by TN.

THE CORN-BUNTING—*Emberiza calandra*. An irregular summer-visitor. Singing males have been noted repeatedly but nesting has not been proved. Practically all the records are of single birds and for the months April to August. Elsewhere along the coast Corn-Buntings nest regularly, the nearest known site being one mile to the north.

THE YELLOW BUNTING—*Emberiza citrinella*. A summer-resident and a regular winter-visitor. This species is most numerous in autumn when flocks of from twenty to thirty birds have been seen. At least three pairs may nest annually.

THE LITTLE BUNTING—*Emberiza pusilla*. On 11 November 1948, a Little Bunting was seen, by R. S., with a flock of Linnets on the railway embankment. It was watched at distances of eight to twelve yards for some time before it flew down to the water's edge where it was lost to sight. While it was with the

Linnets its size and shape were seen to be almost the same: perhaps it was a shade smaller. The general effect was of a richly-coloured medium-brown bird. The dark chestnut crown was black-bordered while the feathers of the back, mantle and wing coverts were brown with dark centres and buff edgings. The buff edges formed two pale stripes down the back and a faint bar on the closed wing. The dark brown tail had white outer feathers. There was a pale buff stripe over the eye, and a black line from beak to eye bordered the upper edge of the rich fawn ear coverts. The malar stripe was black. The pale fawn of the chin and throat deepened on the breast and flanks, while the belly and under tail coverts were again paler fawn. Throat, flanks and especially the breast were streaked dark brown. The conical beak was an indeterminate grey or brown and the legs were brown. The only note heard was a single "cheek".

This is the first record not only for Siddick Pond but also for the whole Lakeland area.

THE REED-BUNTING—*Emberiza schaeeniclus*. A common resident. Flocks of up to thirty birds have been seen in September.

THE HOUSE-SPARROW—*Passer domesticus*. A regular visitor at all seasons and commonest in winter.

THE SKY-LARK—*Alda arvensis*. A summer-resident, a passage-migrant and a visitor when winter weather movements are taking place. In autumn, particularly, successions of small flocks can be seen and heard passing over. Flocks of a hundred and twenty to a hundred and fifty birds occur in November and December and smaller flocks are on the move in all winter months. Six birds have been heard singing together around the pond in March and April.

THE MEADOW-PIBIT—*Anthus pratensis*. A common resident, passage-migrant and winter-visitor. The spring passage starts towards the end of March and continues until the middle of April on a large scale, smaller parties following later. A flock of a hundred and fifty birds was seen on 1 April 1951. Sizeable flocks occur in autumn but winter flocks are smaller, the largest noted being one of thirty birds in January.

THE YELLOW WAGTAIL—*Motacilla flava flavissima*. A regular passage-migrant. The earliest spring record is dated 22 April, and the earliest autumn migrant was seen on 18 July. The largest party was one of thirty-five birds on 3 May 1951. The spring passage appears to be the more important and it lasts from late April until mid-May. Autumn migrants occur until mid-September but their parties are smaller, the largest noted being one of six birds on 26 August 1948.

THE GREY WAGTAIL—*Motacilla cinerea*. A regular autumn passage-migrant and an occasional winter-visitor in small numbers.

THE PIED WAGTAIL—*Motacilla alba yarrellii*. A common visitor throughout the year. It has not been known to nest at the pond but, in 1951, a pair nested in the nearby colliery buildings and were seen continually flying to and fro and carrying food to their young. Parties of up to six birds have occurred during migration; otherwise the visitors are in ones and twos. Mixed flocks of wagtails in spring may include all the recorded species except the Grey Wagtail.

THE WHITE WAGTAIL—*Motacilla alba alba*. A regular spring-migrant. The earliest record of arrival is that of three birds on 12 April 1931. A flock of twenty birds on 23 April 1929 is of interest as marking the normal date for the start of the main passage. In 1951 thirty-eight birds were present on 27 April and smaller numbers until early May, while a solitary bird lingered on until the 17th of that month.

THE GREAT TIT—*Parus major*. A winter-visitor to the Oyster Bank where one was heard singing on 6 March 1949.

THE BLUE TIT—*Parus ceruleus*. A frequent visitor, when not nesting. Small flocks feed in the reed beds, probably on minute insect life. One group of birds feeding in a clump of reeds consisted of several Blue Tits, Reed-Buntings and a Wren.

THE COAL-TIT—*Parus ater*. An occasional winter-visitor.

THE SPOTTED FLYCATCHER—*Muscicapa striata*. The only record is that of a bird seen on 29 May 1923 by H.V.

THE CHIFFCHAFF—*Phylloscopus collybita*. Apart from one bird, which was heard singing in June 1948, this species has not been found at the pond.

THE WILLOW-WARBLER—*Phylloscopus trochilus*. A summer-resident. At least four pairs nest each year on the Oyster Bank and along the southern edge of the pond.

THE WOOD-WARBLER—*Phylloscopus sibilatrix*. Two birds seen on 11 August 1948 by M.McK. were considered by him to be of this species.

THE GRASSHOPPER-WARBLER—*Locustella naevia*. Formerly an occasional, if not regular, summer-resident. The last definite record is of a bird heard singing on 25 May 1931 by M. McK.

THE SEDGE-WARBLER—*Acrocephalus schaenobaenus*. A summer-resident. In 1948 at least four pairs nested at the pond. In 1951 four males, apart from several elsewhere, were singing within two hundred yards of each other on the Oyster Bank. At least ten males were heard singing on that day.

THE WHITETHROAT—*Sylvia communis*. A summer-resident, less common than the Willow-Warbler. The two or three pairs which nest regularly favour the bramble clumps on the railway embankment and the Oyster Bank.

THE FIELDFARE—*Turdus pilaris*. A winter-visitor observed most regularly during March and November in flocks of up to sixty birds passing over at a height of two to four hundred feet. Small flocks occasionally settle to feed in hawthorn bushes on the Oyster Bank.

THE MISTLE-THRUSH—*Turdus viscivorus*. On 26 November 1939 a solitary bird was found feeding on hawthorn fruits on the Oyster Bank.

THE SONG-THRUSH—*Turdus ericetorum*. A summer-resident and winter-visitor. Only two pairs at most have been known to nest in any one year and never more than three birds have been seen together at any time.

THE REDWING—*Turdus musicus*. A winter-visitor in small numbers to the Oyster Bank. The largest number recorded is twenty in a flock on 14 January 1923. Small parties from the migrant flocks passing over at night may sometimes be found sheltering in the bushes on the Oyster Bank.

THE BLACKBIRD—*Turdus merula*. A resident, at least, three pairs nesting. Blackbirds are also found during the winter, singly and in parties numbering up to four.

THE WHEATEAR—*Oenanthe Oenanthe Oenanthe*.

THE GREENLAND WHEATEAR—*Oenanthe Oenanthe leucorrhoa*.

Wheatears occur regularly on spring and autumn migration. Passage-birds have been seen in spring from 26 March to 4 May and in autumn from 3 August to 30 September. The main passages are in April and September and the birds are always in small parties. Those occurring in late April and early May are probably all Greenland Wheatears. A party of seven seen by ThS. on 1 May 1951 were certainly of this northern race. T.W. considers the Greenland bird to be a regular spring-migrant. It has not been recognised in autumn.

THE WHINCHAT—*Saxicola rubetra*. A spring-migrant and formerly a summer-resident. It is not known to have nested since 1923. In 1951 a cock bird was present from 28 April to 3 May.

THE STONECHAT—*Saxicola torquata*. An irregular summer-resident. It is more often found as a winter-visitor, particularly until December. There are no records for January and only one, of a single bird, for February. There were no nesting records after 1925 until 1950 when M. McK. found a family that had probably been reared at the pond. The hard winters of 1939-1941 exterminated the local population which is just now being re-established. On one occasion a Stonechat was seen to take food from the surface of the water.

THE BLACK REDSTART—*Phoenicurus ochrurus*. On 21 December 1913 a male was seen on the railway embankment by J.W. It is not known whether the bird taken by W. Nicholson at Workington on 23 March 1906 is really a Siddick record, but it is quite probable (*The Birds of Lakeland*, p. 59).

THE ROBIN—*Erithacus rubecula*. A winter-resident, always seen singly.

THE HEDGE-SPARROW—*Prunella modularis*. A resident with at least three nesting pairs.

THE WREN—*Troglodytes troglodytes*. A resident with perhaps two pairs nesting. In winter single birds are to be seen feeding in the reed beds and bramble clumps.

THE DIPPER—*Cinclus cinclus*. No Dippers have been seen since 1939. In that year one was present from January until March when it was joined by a second. The bird has never been a very regular visitor, but G.B.P. states that it has nested under a small stone bridge crossing Ling Beck. This bridge has now collapsed.

THE SWALLOW—*Hirundo rustica*. A common passage-migrant and, in smaller numbers, a summer-visitor. During migration considerable flocks collect over the water, especially at dusk. It is thought that they may then roost in the reed beds. The largest flock recorded was one of a hundred and fifty birds on 28 September 1948. The main spring movement may be observed between 10 April and 10 May. The earliest date when Swallows have been recorded is 24 March 1927 when two were present. The latest is 30 October 1946 when there was a single bird.

THE HOUSE-MARTIN—*Delichon urbica*. A passage-migrant and a summer-visitor in small numbers. For the most part only single birds have been seen, the greatest number at any one time being on 7 May 1951 when there were ten. The earliest and latest visits were on 26 April 1951 and 30 August 1948.

THE SAND-MARTIN---*Riparia riparia*. A common passage-migrant and, in smaller numbers, a summer-visitor. The occurrences during June and July are all of twos and threes of visiting birds from a nesting site half a mile distant. The earliest record is of two birds on 1 April 1949. In 1951 the first did not arrive until 5 April. The spring movement continues until mid-May, but maximum numbers are found between 20 April and 10 May when upwards of a hundred birds may be hawking over the pond or resting on the muddy verge and on the adjacent telegraph wires. Not more than fifty have been seen together in autumn, and the latest date is 30 September.

THE SWIFT—*Apus apus*. A regular passage-migrant anti a common visitor from May to August. The pond is a favourite gathering place in the evening, and there may be more than fifty birds hawking insects over it on a suitable summer's night. During the daytime numbers are more variable. The earliest arrival recorded was on 30 April 1951, while there are usually a few by 4 May. The latest birds were seen on 10 August 1948.

THE KINGFISHER—*Alcedo atthis*. Formerly a regular visitor to the pond, at which it may have nested. No birds have been seen since 1935 and G. B. P., who was familiar with the Kingfisher here, attributes its absence to the present relative scarcity of the stickleback. It is reported as having frequented Ling Beck and the reed beds.

THE CUCKOO—*Cuculus canorus*. A summer-visitor. A pair of Meadow-Pipits were seen to be feeding a young Cuckoo from 20 to 26 July 1948.

THE SHORT-EARED OWL—*Asio flammeus*. A winter-visitor which may be more frequent than reports indicate. One was hunting over the pond and along the railway embankment on 22 January 1950 and another, which was being harassed by a Rook and a Lapwing, on 11 November 1951. While the first one was being watched there were also three Barn-Owls quartering the reeds and bushes. Many dead Starlings were found that (lay).

THE BARN-OWL—*Tyto alba*. A visitor at all seasons. There are several known roosting places in hawthorn bushes on the Oyster Bank. Visitors may also roost, as they certainly rest, on old fence posts among the reeds. Roosting Starlings figure largely in their diet and, when flocks of these are present, three or four Barn-Owls have been seen at the pond at the same time.

THE PEREGRINE FALCON—*Falco peregrinus*. Single birds have been seen fairly frequently during the autumn and winter months of recent years: Some recent dates are 27 September and 5 November 1949, and 23 March and 13 September 1950. There are also December and February records. The September 1950 bird was an adult.

THE MERLIN—*Fulco columbarius*. Though reported by I. N. and A. H. as once a fairly regular winter-visitor, it has not been seen during the last thirty years.

THE KESTREL—*Falco tinnunculus*. A regular visitor at all seasons, though not known to nest. Birds are usually seen singly and may be of either sex but, on 14 July 1948, a party of four, probably a family, was present.

THE COMMON BUZZARD—*Buteo buteo*. The only records are of single birds on 19 December 1923 and 4 March 1951. Despite the existence of breeding birds within ten miles of the pond, the Buzzard remains an unusual visitor.

THE SPARROW-HAWK—*Accipiter nisus*. An occasional visitor, less often observed than the Kestrel. All the occurrences have been in spring and late autumn.

THE WHITE-TAILED EAGLE—*Haliaeetus albicilla*. As recorded in *The Birds of Lukeland*, W. B. Housinan saw, On 9 June 1929, what has been assumed to be an eagle of this species flying in a direction which would take it, more or less, over Siddick Pond. About the same time an eagle at Seascale was identified as an immature White-tailed Eagle.

THE COMMON HERON—*Ardea cinerea*. A common visitor throughout most of the year. There are records for all months except January but, from October until February, only single birds, or at most two, occur. The peak period is from July to September while, from April onward, there are often at least three birds to be seen. The largest gathering noted was of eight birds on 25 July 1949, and parties of six and seven are not unusual until September. Most of the visitors may be from a large wood a few miles away where two or three pairs nest. A dry spell in summer and ice in winter effectively deter Herons from visiting the pond.

THE WHOOPER SWAN—*Cygnus Cygnus*. The first occasion on which this swan was seen at Siddick Pond was on 25 April 1940 when one live bird and one dead were seen by M. McK. The live bird was seen again two days later.

In 1948 a single Whooper with a heavily stained head and neck arrived on 27 October and was joined by two more the next day. Two days later only one bird remained and, as its head had lost much of its staining, it was assumed to be the first arrival. This one stayed at least until 16 December and could be picked out from later visitors by the fact that its head and neck had become quite white. Between 30 October and 16 December the following counts were made: —

6 November—3.	8 November—7.	11 November—7.
18 November—3.	25 November—1.	16 December—1.

One swan was still there on 1 February 1949, despite ice in December and January. All these birds were fully adult and they became quite tame. Two arrived on 27 October 1949 and were seen again on various dates until 22 January 1950.

THE MUTE SWAN—*Cygnus olor*. A resident and winter-visitor. One pair always, very often two, and sometimes up to four nest at the pond and they and their young are to be seen throughout the autumn and winter. The family association, which does not break up until the onset of the next breeding season, can last until February. Even the territorial jealousy may be maintained strongly until well into October so that a pair of adults with four juveniles will confine the thirty or forty visitors to half of the pond. This jealousy weakens as the year wears on until all birds move about freely. In 1951, when three pairs nested, all the non-breeders were driven away and they spent the entire summer on the River Derwent nearby, forming a herd of twelve adult and immature birds. Non-breeding birds begin to arrive in June, the numbers increasing until August. Local movements cause a variation in numbers but, during the latter part of the year, there may be thirty or more Mute Swans. The largest numbers recorded are forty, including six juveniles, on 1 December 1946 and thirty-nine on 13 October 1946. There were thirty-seven on 23 August 1948 and thirty-two on 2 July 1947. These large numbers represent a recent increase. The maximum number seen in 1940 was nineteen. During the 1920's the numbers rarely exceeded ten.

The frosts, which often freeze the pond in January, cause a general dispersal and, though the swans attempt to keep a pool clear, the pond may be deserted in a hard winter. Numbers are seldom above ten in the months that follow, until the cycle begins again in June. Here, at anyrate, the bird is far from mute, and not only during the breeding season or when alarmed. Birds in flock have a conversational note frequently used and, when accompanied by fledged young, the adults are constantly calling and replying to the feeble note of their charges.

GREY GESE—*Anser* spp. There is a regularly used flight line over the pond and there are many records of geese in flight. G.B.P. has known them settle for a brief period, but there are no more recent records of this than one of a flock which rested for a few hours on 1 January 1929. All the flight records are for the months December to May, the latest being 7 May 1924. In every case the geese were going north. The flocks are usually of thirty to fifty birds, the largest number being ninety in February 1951. It is difficult to identify high-flying geese, but the commonest species on the Solway is the Pink-footed Goose *Anser fabalis brachyrhynchus* and it was to this species that the ninety belonged.

THE SHELD-DUCK—*Tadorna tadorna*. The only records are of a single bird, on 3 May 1935, by H.V., an(l of three, which made an early morning call on 27 April 1951, by R.S.

THE MALLARD—*Anas platyrhyncha*. A resident, winter-resident and passage-migrant. The Mallard is one of the most easily disturbed ducks and this, coupled with the close proximity of the sea to which the flocks resort when alarmed, makes it difficult to be sure that the birds seen at any one time represent the whole population. In addition, the long eclipse period makes identification of sexes difficult for several months. The largest numbers recorded month by month are: —

J	F	M	A	M	J	J	A	S	O	N	D
6	19	40	12	26	27	35	91	44	84	63	11

The figures for May, June and July include young unfledged birds.

One or two pairs nest on the Oyster Bank and elsewhere at and near the pond.

There is a small population of non-breeding birds as well. The autumn movement first brings in home-bred birds to swell the population and continental migrants later to account for the double peaks of August and October. By December the population has fallen almost to nothing, but it builds up to another peak during the spring movement in March. The winter flocks remain resting and feeding all day, if not disturbed. Once they are alarmed, they stay at sea until the evening. An evening flight from the sea is mentioned by all the older observers, but there is little shooting now, and this is probably why it is no longer a regular feature of the pond. The records of the proportions of the sexes indicate no noticeable trends but, while the sexes are normally equally represented in Mallard flocks, a preponderance of males has been noted on several occasions between October and December.

THE GADWALL—*Anas strepera*. An occasional visitor, apparently only during the migration periods. In 1923 a solitary bird was seen by M.McK. on five occasions between 2 and 14 October. A drake and three ducks were seen on 2 April 1948 and a pair on 19 and 22 April 1948 by R.W.

THE TEAL—*Anas erecca*. A common winter-visitor an(l passage-migrant. This small duck has been seen in all months except June, but records for May, July and August are not frequent and are for only small numbers of birds. The maximum numbers seen on any visit, month by month, are: —

J	F	M	A	M	J	J	A	S	O	N	D
50	24	30	15	2	0	4	8	37	40	47	41

The comparatively large gatherings in December and January were found during mild winters. Time numbers then are otherwise much lower, about fifteen to twenty birds, or less, being

usual. On 22 January 1950, when the pond was partially frozen, a very large number, estimated at over a hundred birds, were present and many of them were standing on the ice, particularly among the remains of the reed beds. This record, being exceptional, has not been included in the monthly summary above. Migrants form the main population, arriving from late September onwards, and many remain until spring unless driven away by frost. During the winter months there are usually more ducks than drakes to be seen. A November flock consisted of fifteen drakes and twenty-five ducks, which is about the usual proportion until March. During most of March and all April 1951 there were as many drakes as ducks and, on two occasions in March, drakes were in the majority.

THE GARGANEY—*Anas querquedula*. An occasional spring-visitor. Two drakes and a duck were seen by M. McK. on 23 April 1929. On the following day only the duck was there. A drake was seen by R. W. on 1 March 1948 and, three days later, a pair were observed at close quarters. Another drake was found by M. McK. on 31 March 1949. R. W. also records a pair on 24 August 1949, the only autumn occurrence. Considering the paucity of records from anywhere else in Lakeland, these occurrences suggest that, given conditions of observation as favourable as they often are at Siddick, the Garganey might be found to be a rather less irregular visitor than it is at present thought.

THE WIGEON—*Anas penelope*. A common winter-resident and passage-migrant. During October and November, Wigeon are the most numerous of any ducks at the pond, and there is usually a resident winter flock of about fifty birds. The maximum monthly numbers are: —

J	F	M	A	M	J	J	A	S	O	N	D
58	59	70	14	2	0	0	5	20	214	100	67

The earliest date of arrival is 3 August when, in 1948, one bird, probably a juvenile male, was seen. This was joined by three more on 13 August. There are usually a few birds present in September, but the main flocks arrive in October. They move on, leaving a smaller number to winter. Unless the pond is completely frozen, the birds never leave until towards the end of March, their numbers usually having been increased again during the first week of that month. The latest date to which any birds have remained is 5 May 1951 when a pair, which had lingered since 4 April, finally departed.

There is a definite trend noticeable in the changing proportions of the sexes. During October, November and December there is usually a surplus of ducks which at times exceed drakes by more than two to one. During February and early March the position is often reversed, perhaps because the drakes begin moving earlier. As happened in 1951, ducks may again out-

number the drakes later in March when the migrants return, but invariably there are more drakes in April and the birds that stay late are nearly always drakes.

THE PINTAIL—*Anas acuta*. An occasional winter-visitor. The increase noted elsewhere in Lakeland (*The Birds of Lakeland*) has not been particularly evident at Siddick. J. W. recalls Pintails at the pond "many years ago". Recent observations are of a party of eleven, including one drake, on 18 January 1939, a solitary drake on 10 November 1940 and a pair on 27 September and 6 October 1949. A drake seen on 20 January 1950 probably stayed until 27 February of that year.

THE SHOVELER—*Spatula clypeata*. A resident, winter-resident and passage-migrant. It is difficult to assess the status of this species accurately. One thing is clear: from one year to another its presence at any time cannot be forecast. The maximum monthly numbers are:

J	F	M	A	M	J	J	A	S	O	N	D
8	0	30	12	4	4	17	20	14	20	30	30

During the period 18 November 1947 to 18 April 1948, no Shovelers were present. On the latter (late a pair returned and their suspected nesting was confirmed when, on 23 July 1948, the duck was seen with three ducklings. This is the first real evidence of breeding here, while it is probable that a second pair nested. The July figure above includes three ducklings.

In other winters flocks have remained and it seems likely that a hard winter has a more permanent effect on this species than on others. Once the birds go, they do not return until the spring migration starts. From October until January females may outnumber males by as many as three to one in the first month and two to one in the last. By March the sexes are at least equal and a preponderance of drakes noted in April and May may to some extent be due to the ducks being at their nests. It is interesting to note that, when feeding, the Shovelers frequently up-end.

THE COMMON POCHARD -- *Aythya ferina*. A winter-visitor and, in small numbers, a passage-migrant. The maximum numbers seen month by month are: —

J	F	M	A	M	J	J	A	S	O	N	D
70	18	13	6	0	0	1	3	2	7	18	20

The flock of seventy, seen on 12 January 1947, was undoubtedly exceptional, the maximum January numbers, weather permitting, usually being nearer twenty. The most unusual feature of the status of the Pochard is the fact that drakes are greatly in the majority at all seasons, outnumbering the ducks by nearly two to one. Only in March do females approach equality in numbers. The only records of more ducks than drakes are for 14

April 1948 and 6 March 1949. This March record followed upon an exceptionally mild winter. The latest date on which Pochards have been seen is 14 April. The earliest autumn date is 17 July, when a solitary drake arrived, in 1948.

THE TUFTED DUCK—*Aythya fuligula*. A winter-resident and passage-migrant. The main flocks arrive during October but there is often a further increase between that month and January. After this the numbers fall off. During the winter of 1947-48 the birds did not arrive in any strength until early February. Recently, there has been found to be a small influx starting in about the second week of March and, instead of most birds having left by the end of the month, they remain throughout April and some even well into May. The maximum monthly numbers are: —

J	F	M	A	M	J	J	A	S	O	N	D
162	46	52	17	6	3	5	2	5	65	92	89

Details of arrival and departure show how the numbers alter and the tendency in the birds to stay later in spring. Selected dates from almost daily visits are given : —

1948	1948	1951
15 October—15	2 April—17	17 April—16
19 October—25	3 April—12	20 April—12
27 October—42	14 April—7	26 April—8
30 October—65	19 April—3	7 May—6

At all times females outnumber males, the most remarkable record being a flock of ninety-two birds containing only fifteen drakes. As this was in November, the drakes were clearly distinguishable. There are few records which do not support the general conclusion, an exceptional instance being a flock of a hundred and sixty-two birds, in January 1947, which had two more drakes than ducks. The drakes are proportionately least numerous from November until February.

THE SCAUP-DUCK—*Aythya mania*. An occasional winter-visitor. Single birds, male or female, have been seen from time to time, particularly in October and November. A pair were watched diving in the centre of the pond on 24 October 1948 by four observers. There are two records for March.

THE GOLDENEYE—*Bucephala clangula*. A winter-visitor in small numbers. Adult drakes are comparatively rare, as are parties of more than three birds. Practically all the records are for single ducks or juvenile drakes. They occur from October to March. The earliest and latest dates are 19 October and 26 April. This latter record is unusual in several respects. The bird was an adult drake; it remained at the pond the long period, for this species, of nearly seven weeks, and it stayed so late into the year. It was accompanied by a female on 31 March and 1 April.

THE LONG-TAILED DUCK—*Clangula hyemalis*. A drake of this species, which had been shot at Siddick Pond some years ago and stuffed, was shown to M.McK. On 3 March 1950 M.McK. saw a small diving duck which he identified as an immature Long-tailed Duck. it was in company with some Tufted Ducks and its smaller head and more delicate bill were noticed as well as its lively behaviour.

THE COMMON SCOTER—*Melanitta nigra*. Being a common winter-visitor to the Solway and also found on the lakes from time to time, this species has, surprisingly, been noted only in one year. This was 1927 when M.McK. saw an immature drake on 15 and 17 March.

THE VELVET-SCOTER---*Melanitta fusca*. Though so very much less common in its normal local haunts than the Common Scoter, the Velvet-Scoter has been recorded twice. H.V. saw a pair on 15 March 1922 and then three birds on 29 December of the same year. His notes and drawings leave no doubt as to the correctness of the identification.

THE RED-BREASTED MERGANSER—*Mergus serrator*. J.W. recalls his seeing the Red-breasted Merganser at the pond about 1921 There are not any more recent or more detailed records though the bird is mentioned as an occasional winter-visitor by G.B.P.

THE CORMORANT—*Phalacrocorax carbo*. A regular visitor, except during the summer months. One of the commonest sights and most characteristic features of the pond is a row of Cormorants on the long central peninsula, some of them standing with spread wings. They are also frequently found fishing and have been seen swallowing eels. It is probable that birds which have been feeding in the River Derwent and in Workington Harbour use the pond regularly as well as those from larger gatherings farther away. St. Bees Head to the south, Balcary Head and Hestan Island across the Solway, the sand banks of the upper Solway, and Bassenthwaite Water are some of the main haunts of Cormorants outside the nesting season, the first two also being nesting sites. Of these, St. Bees Head and the upper Solway probably supply the majority of the Siddick birds, especially from those moving up and down the coast, as they are constantly doing. Their numbers fluctuate considerably from day to day. They are easily disturbed and so are not seen so often during the day as they are in the early morning. If undisturbed, however, they will stay all day. The presence of Cormorants at the pond appears to be directly related to the direction and speed of the wind. Tides, visibility, or barometric pressure except as it affects the wind, have little or no bearing on the numbers present. The

only other factor involved, the spring migration, causes an influx of birds during March and April. This increases the maximum numbers likely to occur, but not the relative numbers, for that period. The optimum wind direction appears to be about 230 degrees, or roughly south-west. Other things being equal, a strong wind brings in more birds than does a gentle breeze.

Cormorants are regularly present from September until April, and have been seen as early as 9 June. The latest date is 29 April. The maximum monthly numbers are: —

J	F	M	A	M	J	J	A	S	O	N	D
3	7	20	15	0	2	3	3	3	13	7	9

The thirteen birds in October are exceptional, the normal attendance in that month being up to five. White-breasted birds occur regularly. Juveniles are very much in evidence from September until November, about which time they acquire their first winter plumage. From then until April, white-breasted birds form 15 to 30 per cent of the total. There is no proportionate increase of them towards the start of the breeding season as there is with the adolescent gulls. White-breasted Cormorants are found at nesting colonies and even, apparently, nesting. Exceptionally white-headed birds, with some resemblance to the Southern Cormorant *P. c. sinensis*, have been seen occasionally in March and April.

THE GANNET—*Sula bassana*. An adult was found dead at the edge of the water, by M. McK., on 23 April 1949. Although its plumage was rather soiled, it was not an oiled bird. The cause of death is not known.

THE GREAT CRESTED GREBE—*Podiceps cristatus*. An occasional winter-visitor. Single birds have been seen in November and January by J. W. and M. McK. The latest occurrence was on 10 November 1946.

THE BLACK-NECKED GREBE---*Podiceps nigricollis*. On 3 August 1948, R.W. found an immature bird at the pond. He watched it regularly for a fortnight during which time it was also seen by A. B., W. McK. B., M. McK., and R. S. It was last seen on 18 August. It was studied in good light at thirty to fifty yards range on several occasions when the following points were noted: dark blackish-brown crown extending below the red eyes; broad continuous blackish-brown band extending down nape and back of neck; sides of head greyish-white, suffused with pale chestnut on the ear coverts; sides and front of lower neck dusky; upper-parts dark grey; flanks whitish, barred greyer: breast and belly white; bill slender and tip-tilted.

THE LITTLE GREBE—*Podiceps ruficollis*. A resident. One pair nests every year and, in some years, two pairs have nested. On 9 April 1927, six birds, which may have been three pairs, were

present. Unfortunately, no further observations were made in that year. Adults have attendant young until late November. From that time, when the families split up, two or three birds remain until nesting starts once more.

THE WOOD-PIGEON—*Columba palunthns*. Though not visitors to the pond, Wood-Pigeons have been seen passing over it on occasions.

THE STOCK-DOVE—*Columba aenas*. One was seen rising from the pond verge on 3 July 1948 by R. W.

THE BLACK-TAILED GODWIT—*Limosa limosa*. An occasional autumn-visitor. One was seen on 20 August 1925 by M. McK. and, on 12 July 1948, R. W. found two in red summer plumage which were easily recognised, especially when they rose and showed the white wing bars and black terminal tail bar.

THE COMMON CURLEW—*Numenius arquata*. A common winter-visitor and passage-migrant. Local movements are affected by the state of the tide. Curlews leave the coast quite freely at high tide and, if the ground is soft, they are content to feed as well as rest inland. The pond is as much a feeding ground as it is a sanctuary for them. They begin to appear at the pond from the middle of July onward and the size of the flocks increases to a maximum in October. Unlike those of ducks, winter flocks are not much smaller than autumn ones. Flocks of eighty or ninety birds are not rare. The biggest are seen in early March, there being a hundred and fifty birds in one flock on 6 March 1923. They are gone by the last week of March and only a few stragglers, if any, are then seen.

THE WOODCOCK—*Scolopax rusticola*. A chance visitor on autumn migration. Many years ago G. B. P. flushed a couple from thick undergrowth on the railway embankment.

THE COMMON SNIPE—*Capella gallinago*. A resident, a common autumn passage-migrant and a winter-resident. The wetter fringes of the pond are feeding places for considerable numbers of Snipe during September. Though the earlier records quote no figures for that month they give the birds as present in abundance. The numbers fall off during October and, from then on, only a few birds may be found until the following autumn. In good years the winter-residents may be more numerous than usual. Fifteen birds were counted on 15 January 1930 and twelve on 11 November 1923, but the majority of winter records are for no more than three birds. The surroundings of the pond are not sufficiently marshy or rough in summer to provide an attractive nesting environment. At least one pair has nested but it is not certain that any do so regularly.

THE JACK SNIFE—*Limnocyptes minimus*. A fairly regular winter-visitor. C. B.P., I. N., and K H., who used to shoot over the pond some years ago, confirm its always sparing occurrence.

THE DUNLIN—*Calidris alpina* A regular passage-migrant and winter-visitor. As Dunlins are mainly shore-feeding birds their presence at the pond depends largely upon the height of the tide though, once driven in, they may remain for some time provided there is sufficient mud exposed. When visiting the pond, Dunlins frequent the flattest, dampest and muddiest stretches of the verge, along with Snipe and other small waders.

Though the bird is not a summer-resident, the only month in which it has not been recorded is June. The last of the spring migrants leave in May, the latest date for them being the 17th of that month, while a flock of ten birds, all in full summer plumage and presumably moving south again, were seen on 2 July 1947. Normally the flocks are small, comprising tip to ten or twelve birds but, on 24 February 1924, a flock of fifty was seen. This is quite an exceptional number for the pond.

THE CURLEW-SANDPIPER----*Calidris testacea*. It is strange that the only Curlew-Sandpiper should have been found in a month when the species is comparatively rare in Britain. On 3 November 1946, this single bird was seen feeding with three Dunlins and three Ringed Plovers, by R. S. and W. McK. B. It was picked out at once by its different method of feeding. While the Dunlins fed slowly, in a round-shouldered attitude, dabbling constantly, the Curlew-Sandpiper dashed rapidly about, only feeding intermittently, though then it did so in a manner rather like that of a Dunlin. Even when feeding it did not appear so squat as a Dunlin. The slightly decurved bill and then the white rump shown by the bird in flight made identification certain.

THE SANDERLING—*Crocethia alba*. Two Sanderlings were seen by M.McK. on 10 August 1948.

THE RUFF—*Philomachns pugnax*. An occasional visitor in early spring and in autumn. It is possible that this bird occurs more regularly than the observations made so far suggest. In 1924 M.McK. found a solitary bird on 24 February. It was still there three days later. There were two on 2 March, but only one again on the 6th This bird stayed until 20 March and might have remained longer but for the heavy rain at the end of March which caused the pond to rise and cover the feeding grounds. In both 1929 and 1930 single birds were seen on the two days 16 and 17 September. the latter bird staying until the 21st. No more were seen until 1948 when R.W. found four reeves and a ruff on 16 August. Two birds were present on 23 August and one on 16 September. All these birds were juveniles.

THE COMMON SANDPIPER—*Actitis hypoleucos*. A visitor. in small numbers, when on spring migration. Single birds, and parties of three or four, have been seen in the latter part of April, usually between the 20th and 29th of that month. There is a record for 24 March 1927.

THE WOOD-SANDPIPER—*Tringa glareola*. The only spring record for the Lakeland faunal area is of a bird seen at Siddick Pond on 29 April 1930 by M.McK.

THE GREEN SANDPIPER—*Tringa ochropus*. Though a regular autumn passage-migrant visiting the coast and inland waters elsewhere in Lakeland, the Green Sandpiper has been noted only twice at Siddick. M.McK. saw one on 26 September 1929, and R.W. found another which stayed from 12 to 15 August 1947. Despite almost daily visits, not a bird was seen in 1948 by the latter observer.

THE REDSHANK—*Tringa totanus*. A regular winter-visitor and autumn passage-migrant. Redshanks may be influenced to some extent by the tides and the amount of uncovered mud, but at least two or three can always be found between July and April. They can occur in early May, though none are known to have stayed to nest. A few are back by mid-July and, on occasions, as many as twenty-six have then been seen. September, as with many species, is the month of high numbers for Redshanks. There were about sixty-five on 25th September 1929 and fifty on 1 September 1940. With the ending of this month comes a gradual reduction to the winter strength of six to twelve which, after the turn of the year, usually becomes only two or three.

THE GREENSHANK—*Tringa nebularia*. An occasional visitor. in small numbers, on autumn-passage. Several birds were also seen on 7 February 1930, which is the only record for the early part of the year. In 1948 two birds were present on 30 July and stayed two days longer. Single birds were seen on 3 and 5 August in that year, and one on 18 August 1949.

THE RINGED PLOVER—*Charadrius hiaticula*. An irregular though fairly frequent visitor, found during all months except June July and August. No large migrant flocks have been seen and only single birds or parties of up to three or four are present as a rule. The months of March and April are the ones in which Ringed Plovers have been seen most constantly, which may indicate visitors on spring passage.

THE GOLDEN PLOVER—*Pluvialis apricaria*. A winter-visitor to the fields bordering the pond, and sometimes in considerable numbers. As has been noted elsewhere along the coast of

Cumberland, the Golden Plovers regularly flight inland to rest and feed, keeping to fixed routes. They do not always use the same inland haunt, but may be found at one of several favourite places. Their times of moving to and from the shore are! regulated by the tides, at any-rate during the day. They appear to have an unfailing knowledge of the time that the first stretch of sand will be exposed and they then depart in a flock to settle there.

At the periods of high tide from September to March flocks may frequently be found, often accompanied by Lapwings. None have been seen after 6 April or before 25 September. The largest flock recorded is one of about two hundred and fifty birds on 13 October 1946. the usual flocks having between twenty and sixty.

THE LAPWING—*Vanellus vanellus*. A common visitor, often in big numbers except during May and June when only occasional birds are seen The flocks begin to collect as soon as nesting is finished and, by July, large gatherings of adults and juveniles have formed. No doubt these birds move away and are replaced by others, but at all times between late July and early March, large flocks visit the pond. Their movements are not completely regulated by the tide and, though many birds move between the shore and the pond, others spend most of their time inland. The largest flocks are found in October and November and these may be treble the size of the later winter flocks which regularly contain two hundred birds.

THE OYSTER-CATCHER—*Haematopus ostralegus*. A visitor at all seasons and a passage-migrant. It is present in even' month of the year but is most common in March, April, August. and September. There is a certain amount of movement of Oyster-catchers up and down the coast at all times outside the breeding season, even when the large winter flocks have become established, and there is also a tendency, which has become noticeable only recently, for birds to feed and even nest away from the shore. Still more marked is the new trend towards moving inland at high tide. Flocks at Siddick, though usually only resting, have been seen feeding as well. It may be that disturbance on the shore, at high tide, accounts for the presence of big flocks, such as one of fifty-four birds on 13 March 1951. Certainly it is at, or after, high tide that most birds are found but, on 4 April 1951, nineteen birds were present at low tide.

THE BLACK TERN—*Chlidonias niger*. A single bird of this species was seen circling over the pond by R.W. on 8 May 194K What may have been the same bird was seen by the same observer four days later.

forty to fifty on 23 August 1948. They have been found between 26 July and 26 August, normally in flocks of up to ten birds, some of which are juveniles.

THE COMMON TERN—*Sterna hirundo*. Common Terns have occasionally been seen at the pond in autumn by J.W. and R.W. and, on 24 April 1951, two visited for a short time along with a large flock of Black-headed Gulls.

THE LITTLE TERN—*Sterna albifrons*. A summer-visitor. Birds from a nesting colony on the shore north of Siddick make occasional excursions over the pond, though they never alight. They have been seen in May, June and July, the largest flock being one of sixteen birds on 27 July 1948. Their visits are often occasioned by the noisy communal flights peculiar to tern colonies.

THE BLACK-HEADED GULL—*Larus ridibundus*. A common visitor and a passage-migrant. Not many birds visit the pond, as a rule, in midsummer. The nearest nesting colony is about ten miles to the north of Siddick and there are many others, some very large, farther away in Lakeland. Juveniles usually begin to appear in mid-July and they are followed by adults. An exceptionally large number of birds, about three hundred appeared along with other gulls on 28 July 1949. The big flocks of September, October, and especially March, are of the order of two hundred birds. During the rest of the year, there may be twenty to forty present on suitable occasions and usually at least one or two are about. Here, as elsewhere in similar situations, sickly birds which have failed to acquire their summer plumage linger on and eventually die. Their bodies may be found from the end of March on into May. On 28 April 1951, seven out of twelve birds were still white-headed as were two on 17 May.

The larger gulls use the pond mainly as a resting place but, though the same factors appear to govern the appearance of all species, the Black-headed Gull is more active than the others and may be seen harassing Lapwings, Golden Plovers and other waders, and even Cormorants and diving ducks. Apart from stragglers, gulls are not constantly present and the reasons for their comings and goings are not always obvious. Large numbers of Herring-Gulls and Greater Black-backed Gulls are found at the refuse tip near North Side, less than half a mile from the pond. When activities cease at the tip, these birds often move to the pond. This could explain the fact that gulls rarely occur in the morning; the Black-headed Gulls, which do not frequent the tip, being at their own feeding grounds. There is no apparent relationship between the appearance of gulls at the pond and any conditions of weather or tide, with the exception that the largest flocks have usually been seen on days of comparative calm.

THE COMMON GULL—*Larus canus*. A frequent visitor on passage and less frequently a winter-visitor. Common Gulls occur most regularly in March, April, and the period from late June to early October. Only on a few occasions has more than a very small number of them been found. On the afternoon of 24 June 1948, a flock of a hundred and thirty-five, mainly adults flew in from the north-east and alighted by the edge of the pond, where they were counted by R.W. This observation is interesting not only because of the size of the flock but also because of the early date for migration to have started. A flock of about a hundred birds was seen in the evening of 20 March 1951. The previous evening, a great flock, estimated at not less than two thousand birds, had been seen resting on the sands of Allonby Bay, ten miles to the north. The largest congregation of its kind seen at the pond, one of over a thousand gulls and terns, on 28 July 1949, included three hundred to four hundred Common Gulls and similarly exceptional numbers of Black-headed Gulls and Herring-Gulls.

THE HERRING-GULL—*Larus argentatus*. A common winter-visitor and passage-migrant. Although June is the only month in which Herring-Gulls have not been recorded, they are usually in very small numbers until August. In the early autumn there is a high percentage of juveniles but, as the winter advances, adults tend increasingly to predominate. Maximum numbers of up to a hundred birds are reached in October. Flocks of this order visit the pond throughout the winter and until mid-April. There does not appear to be any pronounced numerical peak in the spring. A few birds linger on until early May but, during April and May, immature birds are greatly in the majority.

One feature of the Herring-Gulls' favourite resting place, the long and narrow grassy peninsula dividing the main pond, is the large number of castings to be found there. These castings are composed of small mammal and fish bones, a certain amount of vegetable matter, and skate spines or buttons. The castings gradually disintegrate and the buttons become scattered all over the peninsula. They come from the Thornback Ray *Raja elavata* which is caught by the local fishing boats trawling offshore. The fish are prepared for market between trawls and flocks of gulls are always present to deal with the waste matter thrown overboard. The Workington Bank, which lies several miles out, is a regularly-used trawling ground for Skate or Thorn-back Ray.

THE LESSER BLACK-BACKED GULL—*Larus fuscus*. A visitor on passage, most usually singly. Small parties regularly appear in March, while birds have been seen as early as 2 February and as late as 26 November. During May and June they are completely absent!. There were twenty in the large gull flock seen on 28 July 1949.

From 17 September until 12 October 1947 a solitary bird with a very dark back frequented the pond. It was probably an adult of the Scandinavian subspecies *Earns fusens Juscus* but, unfortunately, no British bird was present at the same time for comparison.

THE GREATER BLACK-BACKED GULL—*Earus marinus*. A common winter-visitor and also seen on passage. Flocks of gulls usually contain one or two individuals of this magnificent bird. In September and October up to twenty-three have been seen. Flocks of fifteen to twenty birds may also be found in late March and early April while, on 5 May 1951, a flock of twenty-one was seen in which only one bird was in adult plumage. Over forty adults were present on 1 December 1951 but, unfortunately, they were disturbed before a more accurate count could be made.

THE CORN-CRAKE—*Crex crex*. Although this bird has become increasingly scarce, a pair nested near the pond in 1947. It was a common summer-resident in the neighbourhood until 1935.

THE WATER-RAIL—*Rallus aquaticus*. At one time the Water-Rail was a resident, a pair or two nesting regularly. Since 1920 it has decreased in numbers and it is doubtful whether it has nested since about 1935. Perhaps at least one bird was present in November 1941 but certain identification was not possible.

THE MOORHEN—*Gallinula chloropus*. A very common resident and winter-resident. From August onwards the resident nesting birds are joined by others, possibly from more exposed nesting sites, until by mid-September thirty or more may be present. Territorial instincts then weaken and feeding flocks gather on the grass and in the shallow water, though not without some display of bad temper. These flocks break up in midwinter, but the visitors do not depart until early April. Moor-hens are not greatly affected by varying water level, but they are driven away by hard frost and ice for as long as these conditions last!. The records show that! the winter-residents have been reduced to as few as three during hard spells and, at times, they have been completely absent.

THE COOT—*Fulica atra*. A very common resident and winter-resident, which has increased considerably during the last thirty years. The largest numbers recorded in each of various years in this period are:—

1923—15	1936—132	1946—150
1929—26	1939—89	1947—300

The maximum monthly figures are:—

J	F	M	A	M	J	J	A	S	O	N	D
300	100	89	20	10	47	40	36	133	200	150	200

THE SANDWICH TERN—*Sterna sandvicensis*. The annual autumn drift northward from Ravenglass and elsewhere brings birds to the pond in July and August. The largest flock was of The winter flocks are a marked feature of the pond. The birds congregate chiefly at the eastern end, diving in the stretches of water clear of reeds. If approached, the whole assembly moves steadily into the cover of the reeds. After a while they emerge once more and the apparently endless procession from a reed bed is a sight which never fails to astonish.

Frost has a noticeable effect on winter flocks. The first frost of winter, if severe, causes a marked dispersal. During a keen frost, many birds have been seen swimming on the open sea about a quarter of a mile from the shore. Once dispersed, the flocks do not again reach the same size. The January maximum of three hundred birds was in 1947 when the winter had then had been mild.

THE COMMON PARTRIDGE—*Perdix perdix*. A resident in the surrounding fields and an occasional visitor to the pond.

#### TABLE OF SPECIES WITH THEIR STATUS AND HABITATS.

The status and habitats have been described in general terms and are now simplified for conciseness. Most of the birds are visitors on migration, however else they occur. Only what may be called their primary status is given. Nesting in itself is not separated.

Special but restricted terrains are omitted. The railway line and the small patch of shale tipped from the colliery attract ground-feeding insectivorous birds. These two are included under "Fields near pond". There is no constant dividing line between "Pond margin" and "Fields near pond" as it varies with the height of the water. The pond margin has been regarded as the part where the proximity of the water affects the character and use of the adjoining land. Almost all the land birds drink from the pond but the margin has not been included in their habitat without other reason.

The grouping into regular and occasional visitors is on the basis of their present status. Not all regular visitors will be found on every visit at the appropriate season, but they are quite likely to be there, whereas the occasional visitors can not be counted on with any degree of certainty. Among the occasional visitors, many have been seen only once and it is pointless to regard these as other than casual visitors, whatever their status may be elsewhere in Lakeland.

STATUS	HABITAT
VAS _Visitor at all seasons	W——Water
SV——Summer-visitor	H ---Reed beds
WV—Winter-visitor	M----Pond margin
SP- —Spring passage-migrant	F ——Fields near pond
A P—Autumn passage-migrant	B ---Oyster Bank and railway
CV-- --Casual visitor	embankment; bushes and
	undergrowth
	A ——Aerial

REGULAR VISITORS	Status	Habitat
Carrión Crow	VAS.	F, B.
Rook	VAS.	F, B, M.
Jackdaw	VAS.	F, B.
Magpie	VAS.	B, F.
Starling	VAS.	F, B, H.
Greenfinch	VAS.	B, F.
Goldfinch	VAS.	B, F.
Linnet	VAS.	F, B.
Chaffinch	VAS.	B, F.
Corn-Bunting	SV.	F.
Yellow-Bunting	VAS.	B, F.
Reed-Bunting	VAS.	R, B.
House-Sparrow	VAS.	B, F.
Sky-Lark	VAS.	F.
Meadow-Pipit	VAS.	F, B.
Yellow Wagtail	SP, AP.	M, F.
Grey Wagtail	AP.	M, F.
Pied Wagtail	VAS.	M, F.
White Wagtail	SP.	M, F.
Great Tit	WV.	B.
Blue Tit	WV.	B, H.
Willow-Warbler	SV.	B, R.
Sedge-Warbler	SV.	H, B.
Whitethroat	SV.	B.
Fieldfare	WV.	B.
Song-Thrush	VAS.	B.
Redwing	WV.	B.
Blackbird	VAS.	B.
Wheatear	SP, AP.	F.
Greenland Wheatear	SP.	F.
Stonechat	VAS.	B.
Robin	WV.	B.
Hedge-Sparrow	VAS.	B.
Wren	VA S.	B, R.
Swallow	SP, AP.	A, R.
House-Martin	SP, AP.	A.
Sand-Martin	SP, AP.	A, M, R.
Swift	SV.	A.
Cuckoo	SV.	B.

REGULAR VISITORS	Status	Habitat
Barn-Owl	VAS.	B, R.
Peregrine Falcon	WV.	A, F.
Kestrel	VAS.	A.
Common Heron	VAS.	W, M, R.
Mute Swan	VAS.	W, H, M.
Grey Geese	SP.	A.
Mallard	VAS.	W, M, R.
Teal	WV.	W, M, R.
Wigeon	W.V.	W, M, F, R.
Shoveler	VAS.	W, H.
Common Pochard	WV.	W.
Tufted Duck	WV.	W.
Goldeneye	WV.	W.
Cormorant	VAS.	WM.
Little Grebe	VAS.	W, R.
Common Curlew	WV.	F, M.
Common Snipe	VAS.	M.
Dunlin	SP, AP.	M.
Common Sandpiper	S P.	M:
Redshank	WV.	M, F.
Ringed Plover	WV.	M.
Golden Plover	WV.	F.
Lapwing	VAS.	F, M.
Oyster-catcher	VAS.	F, M.
Black-headed Gull	VAS.	M, F, W.
Common Gull	SP, AP.	F, M, W.
Herring-Gull	WV.	F, M, W.
Lesser Black-backed Gull	SP, AP.	F, M, W.
Greater Black-backed Gull	WV.	F, M, W.
Moorhen	VAS.	W, M, R, B.
Coot	VAS.	W, R, M.
Common Partridge	VAS.	F.
OCCASIONAL VISITORS.		
Siskin	WV.	B.
Greenland Redpoll	CV.	B.
Lesser Redpoll	WV.	B.
Twite	WV.	F, B.
Little Bunting	CV.	B.
Coal-Tit	WV.	B.
Spotted Flycatcher	CV.	B.
Chiffchaff	CV.	B.
Wood-Warbler	CV.	B.
Grasshopper-Warbler	SV.	B.
Mistle-Thrush	CV.	B.
Whinchat	SP.	B.
Black Redstart	CV.	B.
Dipper	WV.	W.
Kingfisher	WV.	W, R.

OCCASIONAL VISITORS	Status	Habitat
Short-eared Owl	WV.	A.
Merlin	WV.	B, F.
Common Buzzard	CV.	A.
Sparrow-Hawk	SP, AP.	B.
White-tailed Eagle	CV.	A.
Whooper Swan	WV.	W.
Shield-Duck	SP.	M.
Gadwall	SP, AP.	W.
Garganey	SI.	W.
Pintail	WV.	W.
Scaup-Duck	WV.	W.
Long-tailed Duck	CV.	W.
Common Scoter	CV.	W.
Velvet-Scoter	CV.	W.
Red-breasted Merganser	CV.	W.
Gannet	CV.	
Great Crested Grebe	WV.	W.
Black-necked Grebe	CV.	W.
Wood-Pigeon	CV.	—
Stock-Dove	CV.	—
Black-tailed Godwit	AP.	M.
Woodcock	CV.	B.
Jack Snipe	WV.	M.
Curlew-Sandpiper	CV.	M.
Sanderling	CV.	M.
Rimif	SP, AP.	M.
Wood-Sandpiper	CV.	M.
Green Sandpiper	AP.	M.
Greenshank	AP.	M.
Black Tern	CV.	A.
Sandwich Tern	AP.	F, M.
Common Tern	SP, AP.	F, M.
Little Tern	SV.	A.
Corn-Crake	SV.	F.
Water-Rail	VAS.	R.

## SUMMARIES.

The Recorded Birds.	Regular	Occasional	Total
Visitors at all seasons	35	1	36
Summer-visitors	6	3	9
Winter-visitors	17	13	30
Spring and autumn passage-migrants	8	4	12
Spring passage-migrants	4	3	7
Autumn passage-migrants	1	4	5
Casual visitors		22	22
	71	50	121

## The Main Habitats of the Regular Visitors.

Water	...	...	...	...	.. 13
Reed beds ...		...	...	...	... 2
Pond Margin		...	...	...	...10
Fields near pond and pond margin					... 7
Fields near pond only			...	...	...12
Bushes and undergrowth ...				...	...20
Aerial	...		...	...	... 7

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Of the seventy-one species, those in the first four categories, and five of the seven in the category "Aerial", thirty-seven species in all, may be regarded as being attracted by the pond itself. At least two of the remaining thirty-four species are, at any rate, more numerous there because of its existence.

The occasional visitors are less easy to classify, but it is considered that twenty-seven of them have occurred because of the existence of the pond. Out of the total of a hundred and twenty-one species then, sixty-six are found on, over or around the pond, the remainder being birds of the fields and hedgerows, or chance visitors.

March 1952.

FOOD OF BIRDS  
By ERNEST BLEZARD.

Most of the mixed findings that follow come from the stomachs of birds. Those that do not are separated under headings as crop contents, pellet components and field and garden observations. All together, they relate to a selection of some ninety different kinds of British birds. The localities for them are nearly all Lakeland ones, the few exceptions being in adjoining counties. Those given without county ending are in Cumberland.

The details of stomach contents generally include whatever was found between mouth and stomach, whether the last beetle picked up by a Starling, or a neatly rolled Pondweed leaf still in the gullet of a Wigeon. Then a bird can really be full to the beak, as a woodpecker with ants or a goose with rush heads or grass tips, not to mention a Goosander with the tail of its last capture almost protruding. Some invertebrates, particularly smaller beetles, and some fruits and seeds taken as food are often found more or less entire and at least easily counted, though very many beetles have been enumerated from wing cases, limbs or other detached parts. Water snails, *Limnaea pereger*, free in a Cormorant stomach and a Heather Beetle in a Merlin pellet are typical of some doubts. The snails, as it dawned, had first been taken by Flukes which had then been digested. The beetle, a small morsel for a Merlin, could have been inside a devoured pipit, yet members of the falcon and hawk families may commonly reject the gizzards of their feathered prey. A tame Peregrine would not eat one under any circumstance. Buttercup achenes in a Kestrel pellet were, with little doubt, from a small mammal or bird victim and analogous to the heather shoots and grain sometimes found in Peregrine pellets.

The presence of suchlike plant parts can be regarded as accidental, but there might well be a difference in other cases affecting flesh-eating birds. The amount of grass and moss swallowed by Buzzards in particular, and by Ravens as well, can be great enough perhaps not to be accidental, and chance could not easily account for a cram of fresh green grass in the stomach of a Tawny Owl. Such instances provide more than the idea of roughage or simple aids to the formation of pellets. They would seem to follow in the line of knowledge that green food, a source of essential vitamins, has been part of the dietry of many carnivorous animals from a time very long before the vitamin theory was born. They next raise the notion whether they could introduce

here the grass juice factor affecting general nutrition and fertility and giving a richness to the coats of animals.

In an apparently simpler instance, a Long-tailed Skua had old, dry maram, a harsh grass, along with entrails, filling its stomach. The interest is enlarged by a footnote to page 356 of *Unexplored Spain*, 1910, by Abel Chapman and Walter J. Buck:

—‘ Note that the pellets or “castings” thrown up by vultures are chiefly formed of grass cut up into lengths and compacted with saliva, evidently digestive.’ This has reference to esparto, a very coarse grass.

For other birds, there often seems to be more grass, or grass remains, in the stomachs of Golden Plover and Common Snipe than could come only by chance. The blades may be so reduced as to leave only vascular tissue in pellet-like masses. Merits of green food to House-Sparrows appear in females concentrating on a form of it in early spring, and in the way crowds, gathered to feed on oats in a field, will take spells off to reduce lettuce in a nearby garden.

Their own body feathers swallowed by grebes are present as a solid stomach filling in some individuals and as a mere few in others. The Little Grebe is much less given to the habit than some other grebes and there were no feathers at all in the five of the species recorded. Evidently these feathers are not generally needed as a preventative from injury by fish bones, nor as a food strainer, and at least one species does not particularly need them as a vitamin source. Still, they are deliberately swallowed and perhaps the two Tawny Owl feathers in a Tawny Owl pellet were not accidental.

The theory of intimidating patterns or “warning colours” in insects, linked with “distastefulness”, intrudes. A Spotted Flycatcher had no hesitation in seizing a glaring-eyed Peacock Butterfly, and a House-Sparrow paid particular attention to caterpillars of the same species. Although the bird was not living in an entirely free state, it can be added that a tame Little Owl made very short work of such “warningly coloured” insects as a black and red Cinnabar Moth *Hipocrito jacobcece* and a white, black and yellow Currant Moth *Abraxas grossulariata* without any apparent disagreeable results. A number of the black and yellow banded Cinnabar caterpillars, presumably swallowed by a Ravenglass gullery resident, had been disgorged in a mucus coated bundle before digestion had really begun on them. Most beetles are likely to go down well, whether ground, dung, burying or any other kind. As another interest, one of the blood-sucking flies parasitic on birds, *Ornithomyia avicularia*, was readily eaten by a pet House-Sparrow when handed to it.

The variety of food taken by the same kind of bird in different habitats, and by birds generally in a short course of time is indicated. Weather influences come in not only when members of the Thrush Family take to berries and other fruits in wintry

times but also, perhaps, when Starlings and Wood-Pigeons gorge on elderberries during periods of drought.

Such activities of pigeons appear to account for undergrowths of Elder or ground growths of Ivy in woods and plantations used for roosting. Other familiar birds, by means of their droppings, have introduced Tutsan *Hypericum androsaemum*, Mahonia *Berberis aquifolium* Japanese Wineberry *Lycesteria japonica* and other plants into the home garden from neighbouring gardens. Odd bushes of *Styrax* here and there in local woods can be associated with the Blackbird for one species, and a growth of Labrador Tea *Ledum groenlandicum* on a Cumberland peat moss could reasonably be placed to some passage-migrant.

Gravel, grit or sand variously describe some of the stomach contents of birds. They prompt a question whether they have some other purpose in nutrition besides serving as grinders. Apart from pigeons and their apparent need of lime, taken in nodules as well as in the form of molluscan shell, there are geese and ducks to be found with a cram of fine sand, or maybe silt, which seems too much to have arrived as but an extra. Some well-grown young domestic ducks on the River Eden helped towards this belief. They came ashore to a bed of fine, dry sand and one of them in particular fairly shovelled this dry sand into itself by the beakful. Two others of the ducks took smaller helpings.

Scoters swallow gravel yet, interesting one way or another, a drake which had been feeding on nothing but sizeable mussels had none in its stomach. The mussel shells were evidently being ground up one against another. Oyster-catchers, as well, held ground-up mussels and no grit.

Ravens, very much carnivorous as they are, freely take sharp-angled pieces of rock commonly measuring 10 nun, or more across some of their sides. These pieces are evidently not retained for long, their keen edges being undulled when they are returned, embedded in the usual pellets, by way of the mouth. An accumulation of pellets below a roosting ledge, by a nesting site in the Skildaw Group, was remarkable for its relatively large quantity of these pieces of rock. Many of the pellets had disintegrated and the pieces from them, mostly of white quartz, formed a gravel patch conspicuous as it was foreign to its immediate surroundings.

Grit in some birds can include fragments of pottery and cinders and, commonly in House-Sparrows, particles of building brick. Very frequently, in many kinds of birds, grit is entirely, or nearly all, white quartz. as though specially selected.

My wife has contributed the home garden observations on plants providing food, and a great part in the general enumeration of plants. My mother has added to the Cotoneaster species locally favoured by Waxwings. One field observation of special local interest came from the late Tom L. Johnston.

Miss Marjory Garnett has supplied some of the more interesting stomachs and pellets for examination, and Derek A. Ratcliffe, B.Sc., some other pellets of like nature besides tracing the identity of saltmarsh grasses. Mrs. N. F. McMillan has named the immature molluscs in the Cream-coloured Courser.

Frank H. Day, F.R.E.S., has taken unending pains over naming most of the many and varied insects which figure so prominently, and it is very largely due to his early co-operation that the whole work has grown.

#### RAVEN—*Corvus corax*

PELLETS. Skiddaw Group, 14.iii.1935.

- 1 Field Vole *Microtus agrestis*, 5 dor beetles *Geotrupes sylvestris*.
2. Sheep's wool, grass and moss with bone and eggshell fragments.
- 3 Sheep's wool and few shreds grass and moss.
4. Sheep's wool, bone and eggshell fragments, 9 rough pieces quartz up to 12 x 8 mm.
5. Sheep's wool, grass, bone fragments, 16 rough pieces quartz, Borrowdale, 16.vi. 1949.
6. Sheep's wool, bone fragments, dor beetle *Geotrupes*.

#### CARRION-CROW—*Corvus corone*

1. ♀ Rattlingate, 13.i.1938.  
Oat glumes, eggshell fragments, poultry grit, cinder particles.
2. ♂ Rattlingate, 24.ii.1938.  
Human eye lens, fingernails and tendon, oat glumes, grass roots and blade scraps, lime nodules.
3. ♀ Orton Woods, 12.ii.1944.  
Cram of oat glumes, elytron of ground beetle *Notiophilus palustris*, bone fragment, sandstone flake, cinder.
4. ♀ Orton Woods, 28.x.1950.  
Cram of oat glumes and 34 still undigested grains.

All from birds shot entering communal roosts, at evening. and going to show that crows retire empty of food. Time indigestible matter is disgorged during the night in pellets which accumulate in heaps beneath regularly used perches.

#### PELLETS FROM NESTLINGS.

1. Mungrisdale, 3.v.1936.  
3 ground beetles *Anchornenus*, 2 sexton beetles *Silpha atrata*, 1 *Chrysomela staphylea*, 8 weevils *Hypera punctata*, an oat grain and maize fragments. All bound with vegetable remains.
2. Fingland Moss, 29.v.1938.  
Rabbit remains *Oryctolagus cuniculus*, ground beetle *Pterostichus madidus*, oat glumes.

STARLING—*Sturnus vulgaris*

All Carlisle, 1933-34.

1. ♂ 12.viii. 10 weevils *Sitona*, 4 lepidopterous larvae, pieces of pear.
2. ♂ 17.viii. Cram of craneflies (*Tipulidae*)
3. ♂ 19.viii. 2 ground beetles *Pterostichus niadidus* and *Anchomenus angusticollis*, 9 weevils, pieces of pear.
4. ♂ 22.viii. Small Carabid beetle, 2 Scarabaeid beetles *Aphodius*, 1 Chrysomelid *Adimonia*, 3 *Sitona* craneflies, traces of oats, pottery particles, grit.
5. ♂ 30.viii. *Goniodiscus rotundatus*, 2 *Sitona*, 2 fruits of Goosegrass *Galium aparine*, traces oats, eggshell fragments, grit.
6. ♂ 31.viii. 3 *Sitona*, craneflies, elderberries *Sambucus nigra*.
7. ♀ 14.ix. Cram of elderberries, ground beetle *Amara*, weevil.
8. ♂ 1 6.ix. 4 ground beetles *Amara*, 20 rove beetles *Philonthus* including *P. varius*, 12 Scarabaeid *Aphodius*..s, ladybird *Coccinella variabilis*, 2 Chrysomelid *Chrysomela hyperici* and *Cassida viridis*, 4 *Sitona*, cranefly, traces of dung.
9. ♀ 16.ix. 1 *Amara*, 2 *Philonthus*, 10 *Aphodius*, 1 Hydrophilid *Quedins tristis*, 2 *Sitona flavescens*, 2 lepidopterous and 5 dipterous larvae, craneflies, Elder seeds, traces of dung.
10. ♂ 2.x. Cram of elderberries.
11. ♂ 19.x. 2 weevils *Otiorrhynchus* and *Ceuthorrhynchus*, 20 *Sitona*, vegetable fibres.
12. ♀ 21.x. 2 click beetle larvae or wireworms *Agriotes*, 2 weevils *Hespera punctata*, 2 *Sitona*, nutlet of Black Bindweed *Polygonum convolvulus*, oats.
13. ♂ 1.i. Hydrophilid beetle *Anaccena limbata*, 2 *Sitona*, poultry food mainly crushed maize.

GREENFINCH—*Chloris chloris*

1. ♀ Belle Vue. Carlisle, 17.vii.1948.  
3 buttercup achenes *Ranunculus* in a cram of fine grit.

## FIELD AND GARDEN.

1. Whitehaven, 11.v.19<sup>33</sup>. Unripe fruits of Elm *Ulmus* by a party.
2. Blackwell, Carlisle, 26.xii.1933. Achenes from hips of Sweet-briar *Rosa eglanteria* by a pair.
3. Beaumont Marsh, 18.xi.193<sup>4</sup>. Seeds out of frosted bramble-berries *Rubus* by several.
4. Blackwell, 19.viii.193<sup>9</sup>. Seeds from siliques of Sweet John *Hesperis matronalis* by two.

- 5 Blackwell, 14.xi.1939. Seeds from berries of *Cotoneaster horizontalis* by a male.
6. Blackwell, 20.xii.1944. Seeds from berries of *Cotoneaster simonsii* by a pair.
7. Blackwell, July 1946. Achenes of Salsify *Traquopogon porrifolius* by six. Three pairs of Greenfinches nested in the garden at the time the Salsify was grown.
8. Blackwell, 24.vii.1949. Whole of a small leaf of young broccoli in nibbles by one bird.
9. An injured male went for a bowl of cut flowers to pick out. the yellow disc florets of Daisies *Bellis perennis*, May 1944.

LESSER REDPOLL—*Carduelis Tinaria*

## FIELD.

1. Carlisle, February-March 1932. Oat grains, accidentally scattered, attracted a flock of some twenty over four weeks of frosty weather.
2. Blackwell, 26.vii.1935. Grains from heads of Meadow Soft Grass *Poa pratensis* by a female.
- 3 Durdar, 12.vi.1939. Unripe nutlets of Broad Dock *Rumex obtusifolius* by one bird.
4. Blackwell, 10.xii.1949. Seeds from withered Stinging Nettles *Urtica dioica* by four.

LINNET—*Carduelis cannabina*

- 1,2. ♂ ♀. Burgh-by-Sands, 30.iv.1932.  
Oats, nutlets of *Polygonum persicaria*, fine grit. Birds from a field of newly sown oats.
3. ♀. Mossband, 6.viii.1932.  
2 nutlets of Knotgrass *Polygonum aviculare*, seeds of Mouse-ear Chickweed *Cerastium vulgatum*, fine grit.

BULLFINCH—*Pyrrhula pyrrhula*

## FIELD.

- 1 Durdar, 19.ix.1938. Seeds of Meadowsweet *Spiraea ulmaria* by a female.

CHAFFINCH—*Frinquilla cceieh.q*

- I ♂. Canonbie, Dumfriesshire, 26.viii.1933. Elderberries *Sambucus nigra*, nutlets of *P. persicaria*, fine grit.
- 2 ♂ Anthorn. 22.ix.1934.  
Nutlet of *P. persicaria*, oat and maize poultry food, a rose prickle, fine grit.

## FIELD AND GARDEN.

1. Carlisle, October 1930. Fallen fruits of Siberian Crab by several.
2. Blackwell, 20.xii.1933. Achenes out of fallen hips of Sweet-briar by a female.
3. Wreay, 28.i.1934. Nutlets of Alder *Alnus glutinosa* by several.
4. Blackwell, October 1937. Fallen seeds of cultivated Candy-tuft *Iberis* by several.
5. Blackwell, November 1939. Unripe nutlets of Red Dead Nettle *Lamium purpureum* by a male. The bird first pulled out the florets.
6. Blackwell, 23.vi.1948. Soldier beetle *Telephorus* captured by a male which removed the elytra and fed the insect to a fledgling.
7. Blackwell, 20.xi.1948. Fruits of cultivated Parsley by three birds.

CORN-BUNTING--*Emberiza calandra*

- 1 ♂. Redkirk, Dumfriesshire, 24.ix.1932.  
Weevil *Dorytomus maculatus*, seeds of Chickweed *Stellaria media*, oat grains.

FIELD. Scotby, 20.vi.1933.

Large White Butterfly *P. brassicae* carried by parent to young.

YELLOW BUNTING—*Emberiza citrinella*

1. ♀. Cargo-on-Eden, 2.i.1932.  
2 nutlets Black Bindweed *Polygonum convolvulus*, grass grains and glumes, grit.
2. ♀. Newby Cross, 12.ix.1933.  
Crane-fly (*Tipulidae*), oats.
3. ♀. Kingmoor, Carlisle, 25.iii.1936.  
3 weevils *Sitona*, oats, fine grit.

SNOW-BUNTING—*Plectrophenax nivalis*

- 1,2, ♂,♀. Crossfell, 28.ii.1932.  
Seeds with capsule and calyx fragments of Heath Rush *Juncus squarrosus*, fine rounded white quartz grit.

HOUSE-SPARROW---*Passer domesticus*

GARDEN AT BLACKWELL, 1935-50.

January. Petaloid sepals of Winter Aconite *Eranthis hyemalis* plucked and swallowed in pieces.

February. Seeds from berries on bush of *Cotoneaster simonsii*.

March-April. Pieces from young leaves of Dandelion *Taraxacum leontodon* chiefly by females.

March. Pieces of petals of *Forsythia spectabilis*. Thorough meal made by one male in particular.

July. Seeds of American Claytonia by a female. Pieces of leaves of Bird's-foot Trefoil *Lotus corniculata* by a juvenile.

August. Seeds of Bronze Oxalis. Achenes of Orange Hawkweed *Hieracium aurantiacum* to get which the birds commonly hopped sideways along the flower stem until their weight brought the head to the ground.

October-November. Seeds from berries on bush of *Cotoneaster horizon talis*.

November. Achenes out of hips of Sweetbriar.

October-December. Seeds of Alpine Lady's Mantle *Alchemilla alpina* avidly taken by up to seven birds at a time.

FIELD. Blackwell.

2.viii.1947. Two craneflies together carried by male to nestlings.

19.v.1948. Two white butterflies *P. brassicae* and one *P. napi*. killed as garden pests, had their wings removed by a female which then carried the bodies to nestlings.

12.vii.1950. Full-grown caterpillars of Peacock Butterfly *Nym phalis io* taken one after another from nettles by a male feeding young.

#### SKY-LARK—*Alauda arvensis*

1. ♂ Belle Vue, Carlisle, 22.ii.1948.  
70 nutlets *Polygonum persicaria*, 4 leaflets White Clover *Trifolium repens*, scraps grass blades, fine grit.

2 ♂ Belle Vue, Carlisle, 22.ii.1948.  
30 nutlets *P. persicaria*, 6 achenes Creeping Buttercup *Ranunculus repens*, fine grit.

Both birds 'telegraphed' during frosty weather.

#### MEADOW-PIBIT—*Anthus pratensis*

1. ♂ Aglionby, 19.x.1931.  
Clavicorn beetle *Simplocaria semistriata*, dipterous larva, grass grains and glumes, grit.

#### ROCK-PIBIT—*Anthus spinoletta*

FIELD. St. Bees Head, 12.vi.1949.  
Crane fly fed to fledgling by parent.

#### TREE-CREEPER—*Certhia familiaris*

FIELD. Newbiggin, Carlisle, 13.v.1942.  
Stonefly (*Perlidae*) carried to nestlings. Nesting tree by river side.

BLUE TIT—*Parus caeruleus*

GARDEN. Blackwell, 1938.

Seeds of Candytuft *Iberis*, Honesty *Lunaria* and Peony Poppy regularly taken. Holes drilled by the birds in the hard capsules of the poppy.  
Flower buds of *Daphne mezereum* are eaten wholesale.

MARSH-TIT—*Parus palustris*

- 1 ♂ Kentmere, Westmorland, 17.xii.1935.  
Beetle fragments, nutlets of Alder *A. inns qintinosa*, fine grit.

WILLOW-TIT—*Parus atricapillus*

1. ♀ Fingland, 24.i.1932.  
Birch and Oak bud scales.
2. ♂ Wedholme Flow, 7.ii.1932.  
Bud scales, 2 seeds Scots Pine *Pinus sylvestris*.
3. ♂ Wedholme Flow, 14.ii.1932.  
Chrysomelid beetle *Phra tora viteilina*', (lipterous pupae, bud scales.  
Beetle species common and destructive on willows and aspens.

FIELD. Orton Woods, 14.ix.1938.

Seeds of Honeysuckle *Lonicera* extracted from berry which bird had wrenched off plant and carried to convenient perch.

LONG-TAILED TIT—*Aegithalos caudatus*

1. ♂ Dalston, 6.iii.1934.  
An entire Birch bud and scales of others.

WAXWING—*Bombycilla garrulus*

*Cotoneaster* berries taken during the 1946-47 visitation.  
Blackwell. *C. horizontalis* by five birds on one day.  
Currock, Carlisle. *C. ballata* by one to four birds over four days.  
*C. simonsii* and *C. adpressa* each by a single bird on one occasion.  
Blackwell, February 1950. Same hush of *C. horizontalis* visited one day by a single bird and over the following eight days by three birds.

SPOTTED FLYCATCHER—*Muscicapa striata*

FIELD. Carlisle district, August. 1943.

A Small White *P. rapae* and a Peacock Butterfly *N. io*, both first shorn of wings, fed to fledglings. Different families of Flycatchers.

LAKELAND ORNITHOLOGY.  
GOLDCREST—*Regulus regulus*

1. ♂. Scotby, 25.ix.1933.  
Crane-fly and remains of other insects.

FIELDFARE—*Turdus pilaris*

GARDEN AT BLACKWELL.

8-11.xi.1951. Remaining Siberian crabs taken from tree by a single bird.

MISTLE-THRUSH—*Turdus viscivorus*

GARDEN AT BLACKWELL.

16.ii. 1947. Twenty-eight berries of *Cotoneaster horizontalis* swallowed by one bird at a sitting. Bush visited by one to two birds over a week of hard weather.

SONG-THRUSH—*Turdus ericetorum*

GARDEN AT BLACKWELL.

20.i.1940. Twenty-six berries of *C. horizontalis* swallowed by one bird at a sitting. Hard weather.

10.vi.1942. Soldier beetle *Telephorus* taken by an adult.

May 1946. St. Mark's Flies *Bibio marci* carried to nestlings.

Carlisle. Fruits of White Beam *Sorbus scandica* eaten September, and Siberian Crab October.

BLACKBIRD—*Turdus merula*

GARDEN AT BLACKWELL.

26.i.1940. Thirty-eight berries of *C. horizontalis* swallowed by a female at a sitting. Frost and snow prevailing.

6.i.1947. Pieces of Brussels sprout by one bird during frost and snow period.

8.ix.1948. Fruits of Himalayan Raspberry *Chenopodium capitatum* gorged by juvenile male.

FIELD.

Stoneraise, Carlisle, 23.vii.1944. Berries of *Styrax* by six or more birds.

Fruits of White Beam and Siberian Crab as under Song-Thrush.

GREENLAND WHEATEAR—*Oenanthe cenanthe leueorrhoa*

1, 2, ♂, ♂. Redkirk, Solway, Dumfriesshire, 24.ix.1932.

Small Carabid beetles, Heteromid beetle *Heliopathes gibbus* a maritime species, rove beetle *Ocyrops*, weevil *Sitona*, sawfly, grass roots.

3 ♂. Burgh Marsh, Solway, 8.ix.1933.

Carabid, weevil, crane-fly.

ROBIN—*Erithacus rubecula*

1. ♂. Carlisle, 12.xii.1931.  
Woodlouse.

## GARDEN AT BLACKWELL, 1940-50.

Berries of *Cotoneaster horizontalis* October-December, and Fire-thorn  
*Pyrocantha coccinea* December.

HEDGE-SPARROW--*Prunella modularis*

1. ♂. Carlisle, 30.vi.1933.  
Chrysomelid beetle *Plectroscollis concinna*, beetle larva,  
dipteran, 2 plant bugs *Ulopa reticulata*, grit.
2. ♂. Cardewlees, 17.vii.1933.  
Beetles including weevil *Liosoma ovatum*, 1 seed Dog Violet *V. canina*, nutlets Sheep's Sorrel *Rumex*, seeds Woodrush *Luzula*, fine grit.
3. ♂. Southwaite, 14.vii.1935.  
10 Hydrophilid beetles *Helophorus brevipalpis*, vegetable food  
including 4 grass grains *Poa annua*, grit.

## GARDEN AT BLACKWELL.

28.viii.1949. Crane-fly.

27.ix.1950. Seeds Alpine Lady's Mantle *Alchemilla alpina*.

DIPPER—*Cinclus cinclus*

- FIELD. River Lyne, Cliff, 9.vi.1935.  
Loach *Nemachilus barbatulus* fed to fledgling.

GREEN WOODPECKER—*Picus viridis*

1. ♂. Hayton, 12.iii.1944.  
Many hundreds of Negro Ant *Formica fusca*.
2. ♂. Hallbankgate, 24.iv. 1950.  
2 seeds White Goosefoot *Chenopodium album*, 1 nutlet *Polygonum persicaria*, 3 particles grit. Bird evidently been in a weedy field.

GREAT SPOTTED WOODPECKER—*Dryobates major*

1. ♀. Durdar, 6.xii.1930.  
Pine Longhorn Beetle *Rhagium bifasciatum*.
2. ♂. Anthorn, 15.iii.1949.  
4 larvae and imago Pine Longhorn.

CUCKOO—*Cuculus canorus*

1. ♂. Elterwater, Westmorland, 4.ix.1947.  
26 moth caterpillars comprising 2 Buff-tip *Phalera bucephala*, 6 White  
Ermine *Spilosoma menthrasti*, 3 Broom Moth *Mamestra pisi* and 15  
unidentified Noctuid. Also a globular pellet, 15 mm., of caterpillar  
hairs.

FIELD. Orton, Carlisle, 6.v. 1934.

Caterpillars of Marsh Fritillary *Euphydryas aurina* taken freely (Tom L. Johnston).

LITTLE OWL—*Athene noctua*

1. ♀. Daiston, 25.i.1944.  
Hydrophilid beetle *Helophorus oeneipennis* soil.
2. ♂. Hilton, Westmorland, -.ii.1947.  
Fine particles white quartz, 2 vegetable shreds.
3. ♀. Dalton-in-Furness, North Lancashire, 1 3.xii.1947.  
Small Passerine, 6 vegetable fibres.
4. ♀. Warcop, Westmorland, 25.ii.1949.  
2 rove beetles *Staphylinea cupreus* 3 weevils *Otiorhynchus sulcatus*, 1 *Chrysomela staphylea*, noctuid caterpillar, earthworm. All in a mass of grass blades and fibres and fine sand.

Pellets from first known Cumberland nesting site, 1950-51.

1. 2 Common Shrews *Sorex araneus*, cockchafer *Melolontha vulgaris*, weevil *Barynotus elevatus*. Hard remains hound in fur and fine shreds grass.
2. Common Shrew, House Mouse *Mus musculus* Chaffinch ♂. Lucanid beetle *Sinodendron cylindricum*. Hard remains and feathers bound in fur.
3. Vole, 2 dor beetles *Geotrupes*.
4. Beetle *Ceotru pes* fine rootlets. An undersized pellet.

LONG-EARED OWL—*Asio otus*

PREY AT NEST. Greystoke. 17.vi.1938.

Meadow-Pipit. *Anthus pratensis*.

TAWNY OWL—*Strix aluco*

1. ♂ Kingstown, Carlisle, 8.xi.1932.  
Field Vole *Microtus agrestis*, 6 caterpillars Large Yellow Underwing Moth *Triphoena pronuba*.
2. ♂. Wetheral, 18.xii.1945.  
Packed bundle of green grass, little changed, and holding slight amount of fine sand. No trace of animal food.  
The bird in exceptionally good condition.

PELLET. Dalston, 15.iv.1935.

Bank Vole *Clethrionomys glareolens* dor beetle *Geotrupes*,  
2 Tawny Owl feathers.

Prey remains at a nest containing two young, Geltsdale, Pennines. 9.v.1944.

Chaffinch *Fringilla caelebs*, Ring-Ouzel *Turdus torquatus*, Grey Wagtail *Motacilla cinerea*, Merlin *Falco columbarius*, Red Grouse *Lagopus scoticus*.

Also 2 pellets largely of beetles *Geotrupes*.

No mammal remains. One extraordinary bird victim.

PEREGRINE FALCON—*Falco peregrinus*

1. ♂. Hawkshead, North Lancashire, 29.xi.1935.

Kingfisher *Alcedo atthis*, Knot *Calidris canutus*. An unusual two victims together. Both legs of former and one of latter included.

Prey at a Dumfriesshire breeding crag.

- 16.vii.1932. Two young in the eyrie and a dead one below it. Fieldfare *Turdus pilaris* (stale), juvenile Ring-Ouzel *T. torquatus*, Common Snipe *Capeila gallinago*, Golden Plover *Pluvialis apricaria*, juvenile Red Grouse *Lagopus scoticus*.

- 20.v.1933. Three young in the eyrie.

Dipper *Cinclus cinclus*, Common Snipe, Golden Plover.

- 28.v.1939. Two young in the eyrie.

Mistle-Thrush *Turdus viscivorus*.

The eyrie directly above a beck frequented by Dippers.

MERLIN—*Falco columbarius*

1. ♀. Longtown, 11.x.1934.

Chaffinch, Common Snipe.

PELLETS.

Kentmere, Westmorland. First two June 1936, others May 1938.

- 1 Meadow-Pipit, Heather Beetle *Lochmoea suturalis*, particle of grit.
- 2 Entirely Oak Eggar Moths *Lasiocampa callunae* except for bone fragment and 2 pipit feathers.
3. Meadow-Pipit, Carabid beetle *Anchomenus*, weevil *Tropiphorus tomentosus*, heather scraps including charred stem.
4. Pipit, small Carabid beetle, ladybird beetle *Coccinella hieroglyphica*, heather scraps, feather moss shreds, 2 particles quartz.
5. Pipit, Wheatear, Carabid beetle, Chrysomelid *Donacia*, beetle larva, heather scraps.
- 6 Meadow-Pipit, Oak Eggar Moths. Carabid beetle, heather scraps.  
Same pipit likely represented in more than one pellet.  
From size of moth remains, evidently the day-flying males generally taken.

KESTREL—*Falco tinnunculus*

PELLETS. Scordale, Pennines, Westmorland, 7.vi.1928.

1. Beetles including Carabids *Pterostichus madidus*.  
Mitford Castle, Northumberland, 23.viii. 1935.
2. Ground beetles comprising 1 *Cychrus rostratus*, 4 *Care bus violaceus*, 7 *Pterostichus madidus*, 1 *Nebria brevicollis*, 1 Silphid *Silpha atrata*, 2 weevils *Otiorrhynchus sulcatus* and *O. picipes*. Remains bound with soil, grass shreds and beech bud scales.
- 3 Vole, small Passerine, dor beetle *Geotrupes*, leaf of Black Horehound *Balota nigra*.
4. Vole, 1 *C. violaceus* 2 *Geotrupes stercorarius*, 2 florets Black Horehound.
5. Small Passerine, 1 *C. violaceus*, 2 *C. stercorarius*, 8 florets Black Horehound, 14 buttercup achenes *Ranunculus*.
6. Long-tailed Field Mouse *Apodemus sylvaticus*, 2 *C. violaceus* 1 *G. stercorarius*, grass blade.  
The Horehound abundant about the castle ruins.  
Hazley Crag, Pennines, Northumberland, 26.xii.1946.
- 7-12. All entirely Field Vole remains *M. agrestis*, except for one including a beetle *C. violaceus*.

COMMON BUZZARD—*Buteo buteo*

1. ♂. Naworth, 1.i.1934.

Mass of shredded Hair Moss *Polytrichum*, small pieces dead leaf and half a pine needle, merest trace of flesh.

PREY AT NEST. Cumberland.

26.vi.1938. A tree nest with three young.

Brown Hare *Lepus europeus* represented by hindquarters and Red Grouse by feathers.

30.v.1942. A tree nest with two young and a bad egg.

Common Shrew, Field Vole, 4 juvenile Rabbits.

At nineteen out of twenty other eyries in Cumberland and Westmorland there were rabbits, mostly juveniles, and some young Buzzards were evidently being reared on nothing but tender rabbit. There was another each of Red Grouse and Common Shrew at two of these nests and a third had a Mole. The odd nest, one containing eggs, had Stock-Dove remains alone.

PELLETS.

Skiddaw Group, 3.iii.1932.

1. Sheep's wool, dor beetle *Geotrupes*, hair moss and feather moss.
2. Sheep's wool and moss.
3. Sheep's wool, vole fur, moss.

4       Stoat *Mustela erminea*.  
                        Skiddaw Group, 2i.iii. 1943.  
5       Stoat, vegetable remains.  
6       Largely grass, with Rabbit remains.  
7.      Rabbit remains and grass.

8 Sheep's wool with an amount of dead coarse grass, some moss  
*Brachythecium purum* and scraps of heather *Calluna*.

- 1 ♀. Penton, 3.xi.1937.  
Woodcock *Scolopax rusticola*. Both ovaries present in this Harrier.
2. ♂. Bowness Moss, 29.i.1940.  
Common Snipe *Capella gallinago*, the parts including both legs.

1. ♂, Beaumont Marsh, 14.xi.1931.  
Small fish, water beetle *Aga bus*, coarse grass.
- 2 ♀. Dalston, 22.xii.1933.  
2 Common Frogs *Rana temporaria*, water beetle *Agabus bipustulatus*, Scarabaeid *Aphodius*. Frogs in winter.
3. ♀. Longnewton Marsh, Solway, 26.xii.1934,  
Grey Gurnard fry *Trigla gurnardus* all about 4 cm.
4. Nestling. Edmond Castle, 6.iv.1937.  
4 small Eels *Anguilla anguilla*, Field Vole *M. agrestis*,  
2 water beetles *Dytiscus marginalis* arid *Acilius sulcatus*,  
grass blades and roots, lime tree fruit *Tillia*, skeletonised  
carpel of pea *Pisum*, coarse grit.

1. ♂. Kirkbride, 16.i.1924.  
Rabbit parts. Bird killed while feeding on carcase.
2. ♂. Neweastleton, Roxburghshire, 25.i.1924.  
Field Vole *Microtus agrestis*.
3. ♀. Crosby-on-Eden, 5.ii.1950.  
Water beetle *Agabus*, rove beetle *Xantholinus*; a crum of grass partly in very compact pellets 5 to 10 mm. diameter; 3 pieces gravel 3 x 2 mm.
4. ♂. Armathwaite, Eden valley, 4.i.1951.  
Water beetle *Platambus maculatus*, 4 nutlets Alder *Alnus glutinosa*, scraps of leaves.

## LAKELAND ORN ITHOLOGY

### GREY LAG-GOOSE--*Anser anser*

- 1        Blackshaw Merse, Solway, Dumfriesshire, 15.x.1925. Cram of seed heads of rush *Juncus*. Bird shot fighting out from mossland, mid-morning.

### GREENLAND WHITE-FRONTED GOOSE—*Anser albifrons flavirostris*

- 1    ♀.        Rockcliffe Marsh, Soiway, 23.xi.1947. Complete cram of fine sand with only slight vegetable traces. Bird shot early morning.  
2.    ♂.        Wigtown Bay, Solway, Wigtownshire, 29.xi.1952.  
         2 grass leaves *Holcus* and part of a leaf of *Poa*, cram of fine to coarse sand. Bird shot early morning.

### PINK-FOOTED GOOSE—*Anser fabalis brachyrhynchus*

9.        Burgh Marsh, Solway, 12.xii.1937.  
         White Clover *Trifolium repens*, Sheep's Fescue *Festuca ovina*, fine sand.

### BARNACLE-GOOSE---*Branta leucopsis*

- 1    ♂.        Bowness-on-Solway, 9.xi. 1939.  
         Sheep's Fescue *F. ovina*, Meadow Poa *P. pratensis*, White Clover *T. repens*, Autumnal Hawkbit *Leonodon autumnale*, fine sand.  
         An albinistic bird (*British Birds*, 33: 255).  
2.    ♀.        Rockcliffe Marsh, Soiway, 1.i.1951.  
         Cram of grass tips *Agrostis stolonifera* with some few *Poa*.

### SHELD-DUCK—*Tadorna tadorna*

- 1, 2, ♂, ♂.    Waver estuary, Solway. -.viii.1934. Amphipod crustaceans *Corophium longicorne* 2 univalve molluscs *Hydrobia*, bivalve *Tellina*, sand.

FIELD. Finglandrigg, 15 iv. 1938.

Female, guarded by male, picking oats from newly-sown field.

### MALLARD—*Anas platyrhynchos*

- 1    ♂.        River Eden, Rockcliffe, 11.ii.1935.  
         4 nutlets *Polygonum persicaria*, 5 nutlets Broad Dock *Rumex obtusifolia*, 3 seeds Bur-reed *Sparganium*, traces of oats, vegetable scraps including part of a haw stone. coarse sand.

2. ♂. Longnewton Marsh, 5.viii.1935.  
Fragments bivalve molluscs *Tellina*, 57 univalves *Hydrobia*, grass glumes, small gravel and sand with cockle shell fragment *Cardium*.
3. ♀. Longnewton Marsh, 5.viii.1935.  
Grams and glumes Heath Grass *Triodia decumbens*, coarse sand.
4. ♂. Longnewton Marsh, 10.viii.1935.  
Crustaceans *Corophium longicorne* grass grains and glumes, coarse grit.
5. ♂. Netherby, 27.viii.1938.  
Caddis-fly larvae (*Trichoptera*) in their cases, root tubers of Lesser Celandine *Ranunculus ficaria*, sand.

COMMON TEAL—*Querquedula crecca*

1. ♀. Beaumont Marsh, 14.xi.1931.  
Fruit of a sedge *Scirpus*, vegetable remains, coarse sand.
2. Burgh Marsh, 9.ix.1932.  
Fruits of a sedge *Carex* and of a pondweed *Potamogeton*, fine sand.
3. ♂. Cargo-on-Eden, 16.ii.1933.  
Green algal strands, sedge fruits, nutlets Water Pepper *Polygonum hydropiper*, grass grains and glumes, fine sand.
4. ♂. Rockcliffe, 21.x.1934.  
2 water snails *Planorbis*, earthworm, buttercup achene *Ranunculus*, bramble seed *Rubus*, haw stone *Crataegus*, fine sand.

WIGEON—*Anas penelope*

1. ♂. Anthorn, 11.x.1932.  
Leaves and fruits of Broad Pondweed *Potamogeton natans*, small young plants of rush *Juncus*, sand.
2. ♀. Anthorn, 4.x.1941.  
Leaves and fruits of *P. natans*, fine sand.

Food freshly taken by both birds, shot in afternoon, at same freshwater pond where the plants growing.

SHOVELER—*Spatula clypeata*

1. ♀. Cargo-on-Eden, 21.xii.1932.  
9 buttercup acitenes *Ranunculus*, dock nutlet *Rumex*,  
2 nutlets Amphibious Persicaria *Polygonum amphibium*,  
18 seeds Branched Bur-reed *Sparganium erectum*, 3  
sedge fruits *Carex*, coarse sand.

COMMON POCHARD—*Aythya ferina*

- 1-3. ♂, ♀, ♀. River Eden, Rockcliffe, 27.ii.1947.  
8, 23 and 3 Eel fry *Anguilla anguilla* 75 to 10 cm. Also 6 Freshwater Shrimps *Gammarus* and water beetle larva in second, and similar larva in third. Coarse sand in all three. Birds obtained after five weeks frost and all in very plump condition.

GOLDENEYE—*Buccphala clangula*

1. ♀. Eden estuary, Burgh-by-Sands, 20.xi.1920.  
Shrimps *Crangon*, sand.
2. ♀. River Eden, Rockcliffe, 3.ii.1935.  
16 Freshwater Shrimps *Gammarus*, small gravel and sand.
3. ♂. Moricambe, Solway, 13.ii.1936.  
20 Mussels *Mytilus edulis* 6 to 12 mm., sand.

COMMON SCOTER—*Melanitta nigra*

1. ♂. Port Carlisle, Solway, 3.ii.1934.  
Mussels *Mytilus* up to 45 cm. No gravel or grit.
2. ♀. River Eden, Cargo, 5.xi.1939.  
Minute fragments molluscan shell, 20 pieces small gravel.
3. ♂. River Eden, Cargo, 13.ii.1940.  
Freshwater Shrimps *Gammarus*, small gravel and sand.

GOOSANDER—*Mergus merganser*

1. ♂. River Eden, Cargo, 24.xii.1932.  
11 young Flukes *Pleuronectes flesus* 5 to 12.5 cm.
2. ♂. Eden estuary, Burgh Marsh, 29.i.1938.  
2 Chub *Leuciscus cephalus*, a small stone. Bird shot late afternoon on return from up-river.
3. ♂. River Eden, Rockcliffe, 8.iii.1947.  
Small Cyprinid, Eel *A. unguilla* 12.5 cm., mass of small fish bones with some grit. 7 Nematodes 2.5 to 4 cm. in stomach.
4. ♀. River Lyne, Bewcastle, 29.xii.1951.  
5 Trout parr *Salmo trutta* up to 11 cm., 12 pieces small gravel.

RED-BREASTED MERGANSER—*Mergus serrator*

1. ♂. Wampool estuary, Solway, -.i.1931.  
Grey Gurnard fry *Trigla gurnardus*, 2 Soles *Solca* 4 and 7.5 cm., Shrimps *Crangon*.
2. ♂. Lochar estuary, Solway, Dumfriesshire, 4.xi.1933.  
Grey Gurnard fry, sand.
3. ♂. Wampool estuary, 14.i.1942.  
26 Grey Gurnard fry, 2 Eels *A. anguilla* 25 and 30 cm.  
Gurnard fry running 2.5 to 4 cm. in all three.

SMEW—*Mergus albellus*

- 1 ♂. River Eden, Cargo, 14.i.1939.  
3 Eels 75 to 15 cm., rootlets, 4 small stones.
- 2 ♂. River Eden, Cargo, 27.i.1940.  
Three-spined Stickleback *Gasterosteus aculeatus*, small gravel.

CORMORANT—*Phalacrocorax carbo*

1. Waver estuary, Solway, 5.x.1925.  
Cram of small Flukes *Pleuronectes f. liesus*.
2. River Eden, Armathwaite, 24.ii.1929.  
3 Brown Trout *Salmo trutta* estimated at ½, ½, and 1 lb.
3. ♂. River Eden, Cargo, 18.x.1934.  
4 Flukes 10 to 15 cm. with partly digested mass of others. Nematodes in stomach.
4. ♀. River Lyne, Westlinton, 2.i.1935.  
Chub *Leuciscus cephalus*. Nematode in stomach.

SHAG—*Phalacrocorax aristotelis*

1. ♀. Sark Foot, 19.xii.1942.  
6 Trout parr *Salmo trutta* separable from partly digested fish mass, 3 pieces gravel. Bird shot coming down River Sark to Solway at dusk.

GREAT CRESTED GREBE—*Podiceps cristatus*

1. ♂. River Esk, Longtown, 16.i.1938.  
Cram of bird's own body feathers with bright green vegetable remains.
2. ♀. River Irthing, Newby East, 13.ii.1943.  
Brown Trout *Salmo trutta* 15 cm., mass of bird's own body feathers.

RED-NECKED GREBE—*Podiceps griseigena*

1. ♀. Southerfield Moss, Abbey Town, 7.ii.1942.  
9 Three-spined Sticklebacks *G. aculeatus*, mass of bird's own body feathers.

SLAVONIAN CREBE—*Podiceps auritus*

- 1 ♂. Arnside, Westmorland, 1.iii.1937.  
350 Ephemerid larvae, water bug *Corixa*, small fish remains, vegetable remains, silt. All compacted in bird's own body feathers. Bird shot in a drainage cut along a marshy field.
- 2 ♀. River Eden, Rockcliffe, 13.ii.1947.  
Cram of Freshwater Shrimps *Gammarus*, few of bird's own body feathers. Bird shot during prolonged frost.

BLACK-NECKED GREBE—*Podiceps nigricollis*

- 1 ♀. Skinburness, 7.xi.1935.  
About 500 water bugs, *Corixa geoffroyi*, *C. concinna*, *C. lugubris* and *C. striata*; 6 of bird's own body feathers and remains of others.

LITTLE GREBE—*Podiceps ruficollis*

- 1 River Eden, Beaumont, 27.xii.1926.  
Freshwater Shrimps *Gammarus*, vegetable remains, sand.
- 2 ♀. River Esk, Longtown, 22.xii.1937.  
3 Carabid beetles *Notiophilus biguttatus*, *Nebria brevicollis* and *Loricera pilicornis*; weevil *Sitona flavescens*, vegetable remains, coarse grit.. Land beetles presumably picked from surface of flooded river.
3. ♀. River Eden, Cargo, 1.xii.1939.  
Freshwater Bullhead *Cottus gobio* of 7.5 cm. which had caused bird's death, small fish remains, 15 pieces coarse grit.
4. ♀. River Esk, Burnfoot, 7.i.1946.  
Small fish remains, 24 small pebbles up to 5 x 4 mm.
5. ♀. River Eden, Beaumont, 22.xii.1947.  
12 Freshwater Shrimps *Gammarus*, 32 water snails *Limnaea pereger* and 1 *Valvata piscinalis*, 2 pieces coarse grit.

BLACK-THROATED DIVER—*Colymbus arcticus*

- 1 ♀. River Eden, Rockcliffe, 22.ii.1947.  
Small fish vertebrae and other bones, 10 pieces gravel mostly whitish quartz.

RED-THROATED DIVER---*Colymbus steilatus*

- 1 ♀. Solway Firth, Dumfriesshire, 1 1.ii.1939.  
Traces of Cephalopod. 2 Nematodes in stomach.
2. ♀. River Eden, Cargo, 10.iii.1944.  
Chub *Leuciscus cephalus* 15 cm., 3 pieces gravel.

WOOD-PIGEON---*Columba palumbus*

## CROPS OF NESTLINGS.

- 1 Blackwell, Carlisle, evening of 8.viii.1936.  
256 barley grains, 16 seeds Vetch, 31 seed capsules Corn Spurrey *Spergula arvensis*, 4 root tubers Lesser Celandine *Ranunculus ficaria*; 20 snails comprising 1 *Goniodiscus rotundatus*, 16 *Oxychilus alliarius* and 3 *Cochlicopa lubrica*; 10 pieces grit including fragment of blue-glazed pottery, half a cherry stone and piece of bone 9 x 5 mm.

- 2, 3. ♂, ♀. Durdar, Carlisle, evening of 21.vi.1942.

Each a cram of pigeon's milk and seeds of Rape *Brassica napus* with a few seed capsules of Chickweed *Stellaria media*. Field of Rape adjoining nesting wood.

- 4, 5. ♂, ♀. Durdar, evening of 27.viii.1942.

Each about a half fill of seeds of Field Pea *Pisum arvense* with a few grains wheat and oats and small amount pigeon's milk. Mixed fodder crop, including peas, adjoining nesting wood.

- 6, 7. ♂. Colt Close, Broadfield, mid-day 8.x.1946.

18 small broad beans, 2 beech nuts, 3 oat grains, small helicoid snail, pigeon's milk, 3 pieces coarse grit.

- ♀ 16 small broad beans, 2 seeds Field Pea, 4 beech nuts, 2 oat grains, 2 grey slugs, pigeon's milk.

Crops of four females killed at a shot from same roosting tree, Southwaite, dusk 3.xii.1944.

1. 18 acorns. 2. 33 acorns and 5 beech nuts. 3. 25 acorns and 300 oat grains. 4. A half cram of wheat and oat grains.

Items included in the contents of some hundred other crops examined. All Cumberland.

Leaves of Creeping Buttercup *Ranunculus repens*, Lesser Celandine *R. ficaria*, Hawkbit *Leontodon*, Dandelion *Taraxacum officinale*, Ribwort *Plantago lanceolata*, Sheep's Sorrel *Rumex acetosella*.

Flower buds of Buttercup *Ranunculus*, heads of Meadow Grass *Poa annua*.

Achenes of Meadow Buttercup *Ranunculus acris*, capsules of Mouse-ear Chickweed *Cerastium vulgatum*, capsules of Chickweed *Stellaria media*, achenes of Wild Rose, nutlets of Black Bindweed *Polygonum convolvulus*.

Root tubers of Lesser Celandine.

Land molluscs *Agriolimax*, *Succinea*, *Trichea*, and aquatic *Pisidium*.

Smooth Spangle Galls caused by the gall wasp *Neuroterus lenticularis* on leaves of oak trees.

#### STOCK-DOVE—*Columba aenas*

1. ♀. Beaumont Marsh, 7.viii.1933.

CROP. Wheat grains, seeds Meadow Vetchling *Lathyrus pratensis*, nutlets of *Polygonum persicaria*, seed capsules of Chickweed *Stellaria media*; 6 water snails *Limnæa pereger*, 4 *L. truncatula*. 1 *Pisidium*, 1 *Planorbis*; shell fragment *Helix*, lime nodules, small pebbles, grit.

STOMACH. Wheat, *Persicaria* nutlets, rounded grains white quartz.

2. ♂. Rockcliffe, 8.ix.1935.

CROP. 421 wheat grains, 1 pea *Pisum*, 56 nutlets Black Bindweed *Polygonum convolvulus*, 205 nutlets *P. persicaria*, 835 nutlets Fumitory *Fumaria officinaiis*, 1 Buttercup achene *Ranunculus*, a small cinder.

STOMACH. 9 wheat grains, 13 nutlets Black Bindweed, 129 *Persicaria*, 40 Fumitory, 77 particles grit.

3. ♂. Beaumont Marsh, 15.viii.1937.

CROP. Cram of oat grains, 5 seed capsules Dog Violet *Viola canina*.

4. ♀. Orton Woods, 20.xi.1938.

CROP. Cram of *Persicaria* nutlets.

#### BLACK-TAILED GODWIT—*Limosa limosa*.

1. ♀. Wampool estuary, Anthorn, Solway, 5.viii.1935.

Cram of small bivalve molluscs *Tellina*, 3 pieces grit.

#### COMMON CURLEW—*Numenius arquata*

1. Burgh Marsh, 19.viii.1932.  
Crane flies (*Tipulidae*), vegetable remains.
2. ♂. Longnewton Marsh, 7.viii.1934.  
2 bivalves *Tellina*, shrimp *Grangon*, bristle worm, sand.
3. ♂. Longnewton Marsh, 8.viii.19<sup>34</sup>.  
Dor beetles *Geotrupes*, coarse grit.  
Traces dung in stomach and beak of bird thickly coated.
4. ♂. Longnewton Marsh, 11.viii.1934.  
2 ground beetles *Pterostichus vulgaris*, dor beetle *Geotrupes stercorarius*, rove beetle *Phiion thus splendens*, 60 crane fly larvae or leatherjackets. a grass grain, coarse grit, traces dung.
5. ♂. Longnewton Marsh, 5.viii.1935.  
Small Shore Crabs *Carcinus*, bristle worm, mud.
6. ♀. Longnewton Marsh, 6.viii.1935.  
Crab *Carcinus*, bivalve *Telina*, mass of dead grass shreds.
7. ♂. Rockcliffe, 1.ix.1935.  
Crane flies, fine shreds grass.
8. ♀. Longnewton Marsh, 10.ix.1946.  
Cram of dor beetles *Geotrupes*, 6 earthworms *Lumbricus* vegetable remains. Bird shot dusk of evening.

All birds shot on the coast but, except 2, 5 and 6, had been flying from inland fields, In August 1935, when Curlews were feeding in creek bottoms on Longnewton Marsh, the ground was baked hard after a fortnight's sunny and rainless weather. A Golden Plover taking similar food during same period.

WOODCOCK—*Scolopax rusticola*

1. ♀. Beaumont Marsh, 27.ix.1936.  
Earthworm, 2 buttercup achenes *Ranunculus*, 4 rootlets. particle grit.

COMMON SNIPE—*Capella gallinago*

1. ♂. Longnewton Marsh, 10.viii.1935.  
8 Harlequin Fly larvae or bloodworms *Chironomus*,  
buttercup achene, vegetable fibres, chip of baked clay.
2. ♂. Blackwell, 24.xi.1935.  
Earthworm, 2 crane fly larvae, 2 buttercup achenes.  
vegetable remains, very fine sand.
3. ♀. Blackwell, 21.xii.1935.  
3 caddis fly larvae and case parts (*Trichoptera*), 2  
dragonfly larvae (*Odonata*). 2 buttercup achenes, sand  
from larval cases.

Bird feeding in small open beck during hard frost.

JACK SNIPE—*Lymnocyrtus minimus*

- 1 ♂. Cargo-on-Eden, 26.xii.1932.  
Water beetle *Haliphus ruficollis*, grass rootlets, particle of white quartz.

GREY PHALAROPE—*Phalaropus fulicarius*

1. ♀. Windermere, Westmorland, 29.x.1952.  
Beetles including a Chrysomelid *Hydrothassa marginella* and a weevil  
*Sitona*.

DUNLIN—*Calidris alpina*

- 1 ♀. Beaumont Marsh, 7.viii.1933.  
1 sedge fruit *Scirpus*, green algal strands, sand.

RUFF—*Philomachus pugnax*

- 1 ♂. Kingstown, Carlisle, 2.x.1933.  
Snail ? *Limnaea*, ground beetle *Pterostichus*, 14 weevils  
*Sitona*, 3 moth larvae, 5 buttercup achenes *Ranunculus*, grass roots and  
blades, coarse grit mostly white quartz.
- 2 ♀. Kingstown, 2.x.1933.  
Weevils including 1 *Sitona*, 8 winged ants (*Formicidae*). 15 buttercup  
achenes, 1 seed White Clover *T. repens*, vegetable fibres. white quartz  
grit.
- 3 ♂. Burgh Marsh, 24.jx.1934.  
62 small ground beetles *Dyschirius globosus* 1 *Georyssus pygmaeus*,  
30 *Sitona*, winged ant, 3 particles whitish quartz.

4. ♀. Burgh Marsh, 24.ix.1934.

29 *D. globosus*, 8 *Sitona*, beetle larva, dipterous pupa, 1 buttercup achene, 1 *Carex* fruit, 8 particles whitish quartz.

All juvenile birds.

GREEN SANDPIPER ~—*Tringa ochropus*

- 1 ♂. Cargo-on-Eden, 8.iii.1947.

Freshwater shrimps *Gammarus*, 10 caddis fly larvae, particle whitish quartz. A wintering bird despite hard and prolonged frost.

REDSHANK—*Tringa totanus*

1. ♂ River Eden, Sandsfield, 5.xi.1932.

Freshwater shrimps, 2 particles grit.

2. ♀. River Eden, Beaumont. 26.xii.1932.

Freshwater shrimps.

3. ♀. Cumberland, 24.x.1934.

2 weevils *Sitona*, 2 crane fly larvae, 12 other dipterous larvae, grass blade scraps and rootlets.

- 4-6. ♂, ♂, ♀ Wampool estuary, Longnewton Marsh, 3.viii.1935

Amphipod crustaceans *Corophium longicorne*.

GREENSHANK—*Tringa nebularia*

- 1 ♂. Longnewton Marsh, 9.viii.1935.

3 Common Shrimps *Cranqon vulgaris*.

2. ♂. Cargo-on-Eden, 2.ix.1950.

3 Minnows *Phoxinus phoxinus*, small fish bones, silt.

GOLDEN PLOVER—*Pluvialis apricaria*

1. ♂. Moricambe, Solway Firth, 7.viii.1935.

A tiny shore crab *Carcinus*, bivalve molluscs *Tellina*, 2 univalve *Hydrobia* and 1 *Littorina*, beetle remains, sand.

The following all Blackwell, Carlisle. and from wintering birds frequenting pastures and meadows.

2. ♀. 19.x.1935.

Earthworms, 2 ground beetles *Amara* and 1 *Bembidium*  
4 weevils *Hypera punctata*, mass of grass roots, 2 pieces coarse grit.

3. ♀. 19.x.1935.

Earthworms, Scarabaeid beetle *Aphodius fimitarius*, 12 *H. punctata*, mass of grass roots and blade scraps, piece of grit.

- 4 ♂. 26.x.1935.

Earthworms, slug *Agriolimax agrestis*, 2 snails *Vitrea* and *Cochlicopa lubrica*, ground beetle *Amara piebeia*, 3 *H. punctata*, mass of grass roots and blade scraps, piece of grit.

5. ♂. 26.x.1935.  
Earthworms, 3 *C. lybrica*, Scarabaeid beetle *Aphodius punctato-sulcatus*, 4 weevils *H. punctata* and 1 *Sitona*, click beetle larva or wireworm, mass of grass roots and blade scraps, 5 pieces coarse grit.
- 6 ♂. 26.x.1935.  
Earthworms, 5 *C. lubrica*, 2 *A. agrestis*, 2 rove beetles *Philonthus* including *P. varius*, 4 *A. punctato-sulcatus*, 5 *H. punctata*, 6 *Sitona flaveseens*, grass roots and blade scraps, 2 pieces grit.
7. ♀. 26.x.1935.  
Earthworms, 9 *C. lubrica*, 1 *Vitrea*, 1 *A. plebeia*, 1 *Aphodius prodromus*, rove beetle larva, wireworm, mass of grass roots and blade scraps, 10 pieces grit.
8. ♀. 2.xi.1935.  
Earthworms, 2 *A. agrestis*, 2 *C. lubrica*, ground beetle *Clivina fossor*, Histerid *Hister*, 5 *H. punctata*, 2 *Sitona*, mass of grass roots and blade scraps. No grit.
- 9 ♀. 30.xi.1935.  
Earthworms, 1 *A. fimitarius*, 2 wireworms, grass roots and blade scraps. 13 pieces coarse grit. Nematode in stomach.
10. ♀. 1.ii.1936.  
Earthworms, 5 Parnid beetles *Dryops*, rove beetle, 2 *H. punctata*, dipterous larva, buttercup aehene *Ranunculus*. mass of grass roots and blade scraps, 9 pieces coarse grit.

DOTTEREL—*Eudromias marinellus*

9. ♀ Wigton, 13.ix.1932.  
2 ground beetles *Pterostichus* including *P. malidrus* nutlets of *Polygonum persicaria* A juvenile bird. "telegraphed".

## FIELD. Lakeland, 7.vi.1925.

Nesting bird taking crane flies (*Tipulidae*) (*British Birds*. 20: 18).

OYSTER-CATCHER—*Haematopus ostralegus*

- 1, 2. ♂, ♂. Moricambe, Solway, 5.ii.1944.  
Each a cram of small mussels *Mytilus* ground into fragments. No grit.  
Birds shot mid-morning at one of the mussel scaurs.  
The late James Storey used to say that the thousands of Oyster-catchers in the bay did not allow the mussels to grow to any size.
3. ♂. Burgh Marsh, Solway, 18.ix.1951.  
Cram of molluscs *Tellina* removed from shell hut with shell fragments included, Chrysomelid beetle *Chrysomela staphylea*.

CREAM-COLOURED COURSER—*Cursorius cursor*

1. ♂. Skinburness, Solway, 15.x.1947.  
2 univalve molluscs *Li torina saxatilis*, 3 harvestmen (*Arachnida*), 4 earwigs *Forficula*, 2 rove beetles *Philonthus varius*, 62 weevils *Sitona flavescens* and 1 *Alophus triguttatus*, click beetle *Gorymbites*, 11 red ants *Myrmica ruginodis*, 2 diptera, noctuid moth larva, 4 particles grit. (*British Birds*, 41: 92). (*NW. Naturalist*, 22: 273).

BLACK-HEADED GULL—*Larus ridibundus*

1. Beaumont Marsh, 25.viii. 1945.  
2 ground beetles *Anchomenus albipes* and *Patrobus excavatus*, 2 rove beetles *Philonthus varius* and *P. laminatus* bread.

GREAT SKUA—*Stercorarius skua*

1. ♀. Cardurnock, Solway, 26.x.1936.  
Cram of flesh, bones and feathers of Guillemot *Uria aalqe*.

LONG-TAILED SKUA—*Stercorarius longicaudus*

1. ♂. Cram of Maram Grass *Psamma arenaria* with small animal intestines. (*British Birds*, 40: 287).

CORN-CRAKE—*Crex crex*

1. ♀. Doncaster, Yorkshire, 18.v.1936.  
2 Pine Weevils *Hylobius abietis*, vegetable remains.  
Young plantations among habitats.
2. ♂. Carleton, Carlisle, 7.ix.1944.  
Slugs *Agriolimax*, earthworms, hover fly (*Syrphidae*) and another dipteron.
3. ♂. Bewcastle, 20.vi.1945.  
Ground beetle *Pterostichus viiqaris*, weevil *Barynotus obscurus*.

WATER-RAIL---*Rallus aquaticus*

1. ♂. Drawdykes, Carlisle, 17.x.1932.  
2 water snails *Limnaea pereger* and *L. truncatula*, ground beetle *Bembidium lit torale*, fine rootlets, coarse grit.
2. ♂. Todhills, 28.xi.1932.  
5 crane-fly larvae, vegetable remains, rounded particles quartz.
3. ♀. Carlatton, 8.xii.1946.  
Traces small beetle, 3 fronds Lesser Duckweed *Lemna minor*, coarse grit
4. ♀. Dalston, 26.ii.1949.  
Weevil *Sitona tibialis*, 3 water crickets *Velia*, vegetable fibres. No grit.

MOORHEN—*Gallinula chloropus*

- 1 ♂. Westlinton, 10.xii.1933.  
 Pieces of buttercup leaves *Ranunculus*, lengths of stem of Brooklime  
*Veronica beccabunga*, coarse grass mostly tips, fine sand.

PHEASANT—*Phasianus colchicus*

- 1 ♀. Langwathby, 10.xii.1934.  
 10 haw stones, *Crataeus*, Cock's-foot Grass *Dactylis glomerata*, 1  
 sprouting oat grain, 180 particles whitish quartz.
2. ♂. Blackwell, Carlisle, 23.x.1935.

CROP. Achenes of Autumnal Hawkbit *Leontodon autumnalis*, heads of  
 Meadow Grass *Poa annua*.

STOMACH. Hawkbit achenes, Pea heads, stained seeds of bramble *Rubus*  
 from digested berries, haw stones, traces of oats, quantity of coarse  
 grit mostly whitish quartz.

3. ♂. Blackwell, 26.x.1935.

CROP. Cram of Smooth Spangle and Silk Button Galls of gall wasp  
*Neuroterus*, bud and piece of leaf of oak, elderberry *Sambucus*, grass,  
 grey slug *Agriolimax agrestis*, piece of grit.

STOMACH. Galls, haw stones, elder seeds, 5 root tubers Lesser Celandine  
*Ranunculus ficaria*, coarse grit.  
 Nos. 1 and 3 melanistic birds.

PARTRIDGE—*Perdix perdix*

- 1 ♀. Blackwell, 1.x.1935.

CROP. Leaflets White Clover *Trifolium repens*, seed capsules Chickweed  
*Stellaria media*, nutlets Knotgrass *Polygonum aviculare*, heads of  
 Meadow Grass *P. annua*, lengths grass blades.

2. ♂. Blackwell, 28.xii.1935.

CROP. Pieces leaves creeping Buttercup *Ranunculus repens*, buttercup  
 achene, White Clover leaflets, 2 seeds Yellow Rattle *Rhinanthus*  
*crista-galli*, lengths grass blades.  
 Fine rounded whitish quartz grit in both stomachs.

QUAIL—*Coturnix coturnix*

- 1 ♀. Barrow-in-Furness, North Lancashire, 18.xii.1947. Grass glumes, 2  
 nutlets Knotgrass *Polygonum aviculare*, 29 small rounded particles  
 clear quartz.

## THE BIRDS OF LAKELAND A SECOND SUPPLEMENT

By THE EDITOR.

To *The Birds of Lakeland*, 1943, A Supplement appears in *Lakeland Natural History*, 1946.

With the addition of the Little Bunting, Red-breasted Flycatcher and Greenland White-fronted Goose, and the retention of the square-bracketed Greenland Redpoll, Bonaparte's Sandpiper and Broad-billed Sandpiper, 295 birds can now be named for Lakeland.

The breeding birds, regular and occasional, in these times could possibly run to the number of 144, made up of 107 residents and 37 summer-visitors. These last two descriptions are used in their British sense. Nesting birds new to Lakeland, and included, are the Little Owl, Common Eider, Goosander and Red-breasted Merganser. Two extras are the White Wagtail, which has nested once, in Westmorland, in 1917, and the Green Sandpiper whose nesting in the same county, also in 1917, is the only instance in the British Isles. The Wryneck, which reappeared in an old nesting district so recently as June 1951, and the Garganey, unfortunately not conclusively proved a nester, are not included.

The year 1947 brought more than an ordinary train of bird events to Lakeland. Hard winter weather and wild spring weather and country-wide happenings all contributed.

There were the great Waxwing invasion, carried over from the end of the previous year, and a repetition of history in the return of Whooper Swans to the City of Carlisle. Afterwards occurred the extraordinary inland passage of Common and Arctic Terns, and also the first Long-tailed Skua locally in spring. Quails happened generally, were in better showing, and there were distinguished visitors in two Ospreys. These were followed by a Cream-coloured Courser and a fine adult Greenland White-fronted Goose. The notes on these occurrences, together with some others dated 1947, illustrate more fully a memorable year with regard to birds.

Thanks are given to all those contributors settled throughout Lakeland and beyond; to the Chairman and Committee of the Carlisle Public Library and Museum for their official help; to Barrow Naturalists' Field Club for their *Bulletins* and *Proceedings* and to Penrith and District (now Penrith and Kendal) Natural History Society for their *Monthly Bulletins*.

Personal names in brackets are again the names of actual finders or observers. The Raven counts are from the diaries of Eric B. Dunlop, sometime president of our Society, lent by the Rev. F. C. B.



ARTHUR V. MILLARD

EIDER AT NEST, WALNEY ISLAND, 1949

Jourdain, prior to 1943, and since gone to the Edward Grey Institute of Field Ornithology.

The arrangement of the subjects follows *The Handbook of British Birds*.

#### THE RAVEN—*Corvus corax* L.

Two recent instances of nesting at St. Bees Head are the first to be given in the present century for this, the only coastal breeding haunt. In May 1947 there was a new nest with a dead Raven lying below it (J. H. Vine Hall) and, on 24 April 1949, a nest of almost fully fledged young (Austin Barton, Ralph Stokoe).

R. A. H. Coombes has published his observations on the large gatherings of Ravens which roam the Lakeland heights and roost in certain secluded crags. Flocks seen during a number of years were three on the High Street range, two on the Helvellyn range, eleven in the more central fells and three in the Westmorland Pennines. Except for July and September, the time of year ran from the end of February to the end of March (*British Birds*, 41: 290-94, 386).

In one dale under Helvellyn there were sixteen Ravens on 3 September 1949 and at least thirty on 21 September 1950 (Derek A. Ratcliffe). A flock of thirty-one, in which the birds kept noticeably in pairs, appeared over one of the Pennine roosting places about mid-day on 18 November 1951 (R. W. Robson).

The following counts of Ravens at a Pennine roost in years past were made by Dunlop and Mason.

#### 1909.

25 April—19.	26 October—23.
7 May—21.	3 November—57.
5 August—24.	4 November—48.

#### 1910.

21 January—30. Nearly all in pairs.	1 August—7. (None between 30 July and 1 August).
22 January—12. Some believed gone out before count.	2 August—7.
4 February—27.	5 August—6.
1 March—30.	19 August—S. (And up to this date).
4 March—24.	27 August—26.
22 March—Not more than 6. None appeared to be roosting.	29 August—34.
23 March	10 September—42.
18 April	7 October—40.
27 May	27 October—Many, but iiot counted.
16 June	11 November—27.
11 July	4 December—34.
30 July—2 at least.	14 December—38.
	16 December—Good number.

## 1911.

- 3 February—4. (In second week in January and on several subsequent occasions only 4, never more, I have not much doubt that the exceedingly mild weather we have had is the reason the Ravens are not resorting to the roost).  
 23 & 27 February—None.  
 26 April and several times previous—None.  
 4 May—6 and perhaps more.

- 9 May—10. For most part distinctly in pairs. No doubt birds whose nests have been robbed.  
 28 May & 12 June—None.  
 Early August—5 occasionally.  
 12 September—15.  
 1 October—25-33.  
 4 October—40-45.  
 5 October—50-53.  
 25 December—17.  
 28 December—A lot but could not count for mist.

## 1912.

- 19 January—36 flying in pairs.  
 1 March—5 or 6.  
 3 March—None,

- 14 May—18 in pairs. No doubt all birds that have been robbed.  
 3 November—50.

## 1913.

- 26 January—30. Nearly all in pairs.  
 2 March—35.

- 25 March—A pair. (No others).  
 30 October—40.

The breeding strength, as distinct from the floating population, is more like sixty pairs than the nearly forty pairs given in *The Birds of Lakeland*.

THE CARRION-CROW—*Corvus corone* L.

Carrion-Crows have widely taken to nesting on electricity pylons in Cumberland. Places and dates for nests, usually built on cross-arms of these artificial supports, have been noted in a professional as well as a natural history interest. Calthwaite 1943. Orton near Carlisle 1943 and 1944, the second being two pylons from the first. Garristown 1946. Leegate 1947 and the same pylon in 1949. Bunkers Hill near Carlisle 1948 and two pylons away in 1950. Uldale 1950 and a repeat on the next pylon. Great Broughton and Soaton 1950. Distington and Mossband 1951 (W. Raymond Laidler).

In Kirkby Stephen neighbourhood. with a history of white Carrion-Crows back to 1924, a white one evidently a female bred in 1951, producing normal young. Presumably this breeding bird seen on 14 January 1952 (Walter Thompson).

THE JAY—*Garrulus glandarius* (L.)

A thicket of willows and small birches, at the edge of mixed. woodland near Carlisle, noted in 1938 as an autumn to spring roost of about thirty Jays, was still in use in October 1950 (Ernest Blezard).

THE STARLING—*Sturnus vulgaris* L.

Three instances of Starlings "anting" at different places in Carlisle were all connected with the swarming of Garden Ants *Acanthomyops nigra* from below pavements. Seven birds in August 1946, one in September 1948 and six in September 1951 were all similarly engaged in applying the captured insects to the axilla under one or other upraised wing. Birds in the two parties also swallowed many ants without pressing them to the body (Ernest Blezard).

A Starling marked with a ring of the Rossitten Bird Observatory, Germany, was shot at Floriston, Cumberland, 24 February 1947 (T. Pattison).

THE GOLDEN ORIOLE—*Oriolus oriolus* (L.)

A male and female at Rather Heath, between Kendal and Staveley, Westmorland, during May 1949 (John Dippie). A male at Flimby, West Cumberland, 11, 12 and 15 May 1949 (James Nicholson, Isaac Nicholson, jnr.). A male and female at St. Johns in the Vale, 14 May 1951 (Ronald Wright) and a male at Shawk Foot, Cumdivock, Cumberland, 8 August 1951 (George Bowe).

THE HAWFINCH—*Coccothraustes coccothraustes* (L.)

Two at Greenodd, Lancashire North of the Sands, 15 May 1948 (Mr. & Mrs. F. W. Gough).

THE SISKIN—*Carduelis spinus* (L.)

Breeding continued near Ullswater, Westmorland. Three nests in May and then one, seemingly for a second brood, in July 1946. Two nests in 1948 (James R. Cooper, *British Birds*, 42: 22).

A pair in a Scots pine near Keswick, 11 June 1948 (H. F. Greenfield). Forty frequenting alders at Blackwell, Carlisle, in March 1947 (E. Blezard, Peter S. Blezard), and up to twenty the saltings and shore of the Esk estuary, Cumberland, where they were feeding among flotsam, during January and February 1950 (D. F. Owen). On Cartmel Fell, Lancashire N.S., two were seen at Gill Head on 14 February 1952 and a flock of fifty near Cowmire Hall Farm on 21 November 1952 (Alan F. Airey).

THE MEALY REDPOLL—*Carduelis flammea flammea* (L.)

Several noted in some large flocks of Lesser Redpolls and, two in particular, in a flock of thirty-five, frequenting Appleby district, Westmorland, during January and February 1951 (R. W. Robson).

THE BRAMBLING—*Fringilla montifringilla* L.

Widespread flocks during the hard winter of 1946-47 included one of about two hundred birds at Hause End, Derwentwater, on 28 December (H. F. Greenfield).

THE CIRL BUNTING—*Emberiza cirrus* L.

One watched for a week in August, 1947 at Sebergham, Cumberland, and several times seen to take grasshoppers (Rosemary Woodall).

THE LITTLE BUNTING—*Emberiza pusilla* Pall.

The first Little Bunting to be recorded for Lakeland was with a small flock of Linnets on the railway embankment alongside. Siddick Pond, Workington, Cumberland, on 11 November 1948. Its richer and lighter-coloured plumage, which caused it to stand out from its associates, led to its recognition (Ralph Stokoe, *British Birds*, 42: 359).

THE SNOW-BUNTING—*Plectrophenax nivalis* (L.)

A party of ten on the summit of Crossfell, 2979 feet, 13 November 1949 (Carol Greenwell).

The Westmorland Pennines appear widely attractive. Seven on top of Long Fell, 13 March 1949 (R. W. Robson). Two in Mallerstang, 30 November 1950 and twenty on Stowgill Moor, 16 January 1951 (Peter Young). Thirty on Kettlepot Moor, 29 January 1951 (Walter Thompson). Four on Roman Fell, 30 November and one on Kettlepot 19 December 1951 (Peter Young).

In the central region, one on the summit of High Stile, 2643 feet, 12 January 1950 and thirty to forty on the summit of Fairfield, 2863 feet, 26 March 1952 (Ayliffe F. Hervey, G. A. K. Hervey).

THE TREE-SPARROW—*Passer montanus* (L.)

Westmorland. Forty to sixty, along with numerous Chaffinches and Yellow Buntings and four Corn-Buntings, feeding about a dutch barn filled with corn, at Appleby, 27 November 1947 (R. W. Robson).

Cumberland. At least eighty, along with Bramblings and buntings, feeding in a newly manured field at Dovenby, 13 February 1949 (Ralph Stokoe). About fifty at Morley Hill, Cumwhitton, 24 February 1952 (E. Blezard, Andrew T. Blezard).

THE SKY-LARK---*Alauda arvensis* L.

Five hundred or more frequenting a field of winter wheat at Blackwell, Carlisle, during the hard frost of February 1947 (Ernest Blezard).

THE MEADOW-PIPIT—*Anthus pratensis* (L.)

Winter birds in the fells tend to be solitary. A party of nine on 29 January, and another of fifteen to twenty on 11 February 1948, following the same bracken-grown slope in Kentmere, Westmorland, were unusual (Marjory Garnett).

THE YELLOW WAGTAIL—*Motacilla flava flavissima* (Blyth)

An exceptional number of passage-migrants comprising forty Yellow Wagtails and twenty White Wagtails near the head of the Kent estuary, Westmorland, 1 May 1947 (J. A. G. Barnes).

A Yellow Wagtail in winter at Upperby Park, Carlisle, December 1948 (Ritson Graham). On the city outskirts, a pair nested near Cummersdale in 1951 (Richard Martindale) and a pair near Upperby in 1952 (F. H. Day).

THE GREY WAGTAIL—*Motacilla cinerea* Tunst.

Two twenty-five yard lines of willow bushes, twenty yards apart, and fringing the River Petteril at Harraby, Carlisle, served as a purely Grey Wagtail roost in 1949. On to more than a hundred birds came in at evening from September onward until the leaves began to fall, and did so again in 1950 (Richard Martindale).

THE NUTHATCH—*Sitta europaea* L.

By Ullswater, one in the Rectory garden at Watermillock during the summer of 1948 (D. W. Rosling), and one at Glencoyne, 8 September 1950, reported by J. R. Cooper.

At the end of January, or in early February, 1952, a Nuthatch began visiting garden bird-tables at Rydal, Westmorland, and was still coming up to 11 March (B. E. Porter).

THE MARSH-TIT—*Parus palustris* L.

Sparse in Cumberland, and one at Gilsland in the north of the county, 26 April 1943 (G. A. K. Hervey).

THE WILLOW-TIT—*Parus atricapillus* L.

Several in woods by Elterwater. 6 November 1945 (G. A. K. Hervey), are new evidence of the species in Westmorland, and in a principal district for the Marsh-Tit.

A pair near Scarness, by Bassenthwaite Water, 22 March 1952 (Ralph Stokoe) add to distribution in the central region.

THE GREAT GREY SHRIKE—*Lanius excubitor* L.

Occurrences of single birds.

Cumberland. Murrah, near Greystoke, 23 October 1946 (Henry Mellor). Near Penrith, 25 December 1948 (Nora M. Stalker). Glasson, 16 November 1949 (R. H. Brown). Portinscale, January 1952 (O. B. Rigby). Durdar, 6 April 1952 (E. Blezard).

Westmorland. About Appleby, three weeks up to 13 July 1947 (R. W. Robson, *British Birds*, 41: 60). Arnside, 1 January 1950 (J. A. G. Barnes). Near Elterwater, 26 December 1950 (The Rev. and Mrs. J. R. H. Moorman). Knock, 1 January 1952 (P. Delap).

THE WAXWING—*Bombycilla garrulus* (L.)  
WINTER 1946-47.

CUMBERLAND. During this winter's immigration the City of Carlisle was very well favoured. Seven Waxwings in Upperby Park, at the south side, 29 November (Robert Dawson, Joseph Howe), were one day visitors but forty at Botcherby, 7 December (Michael Lees) had become a hundred by 15 December (T. Furness). Onward into late January, Richard Martindale frequently saw up to a hundred as they ranged the south-east side of the city from Botcherby, by Durran Hill, to Chertsey Mount, and fed on the heavily-laden hawthorns. They were full strength at Chertsey on 24 and 26 December (Tom L. Johnston, Ernest Blezard, Andrew T. Blezard), and still fifty strong between Botcherby and Durran Hill on 26 January (R. Martin-dale). Four returned to Upperby Park, 1 January (Robert Duckworth) and one, 14 January (E. Blezard). Along the northern side, three to five at Etterby during November and December became sixteen on 31 December (George Gardner) and there were six on 18 January (Ian Lockhart, Alan Palmer). Nearby, twenty-five were similarly feeding on haws in Willow Holme, 10 to 12 February (W. R. Laidler) and six on 20 February (Robert Wright).

After January, the Waxwings became more scattered in the city, going for cotoneaster berries in the front and back gardens of houses. Two at Harraby, 13 February (J. G. Hawkins) and twelve in Bedford Road, about 20 February (G. Lightfoot). One to four in Mayson Street, 18 to 20 February, and one, 2 and 19 March (Mrs. H. Blezard), four in Gardenia Street, 21 February (A. Goodfellow) and one in Currock Road, 24 February (E. Blezard) were all Currock. Three in Northumberland Road, 21 and 22 February (Nigel A. Redfern) and nine in Warwick Road, 24 February (Frank Ashton). Thirty in Dalston Road, 2 March and six, 6 March (Robert Baxter). Two at Caldew Foot, 9 April and one at Upperby, 11 April (J. C. Irvine) were the last for the city. Closely around, there were one at Broomhills, 5 January,

per E.B., one Kingstown, 7 January (R. V. Huggon); one Cumwhinton, 28 January (E. J. Maden); five Blackwell, 7 February (Dorothy Blezard) and one, 5 and 6 March (E. Blezard); six Drawdykes, 10 and 11 February (Joseph Milbourn) and six Linstock during February (Michael Thompson, jnr).

More to the north, six at Harker, 4 December, per W. J. Carlyle, and thirteen at Scaleby in December (R. Underwood).

To the south-west, twelve in Shawk Quarry, Cumdivock, 7 January and twenty-four near Gill, Dalston, 1 February (R. H. Brown). In the Solway region, two at Drumburgh, 20 January (Peter S. Day), two Silloth in January (George Low) and two Grune Point, Skinburness, 8th February (J. Hardingham, Ralph Stokoe).

West Cumberland had early arrivals in a large flock on Kirkbank, Cockermouth, prior to 11 November on which date the birds moved off down the River Derwent, leaving one straggler (Austin Barton, W. McKnight Bell). One in Church Road, Fliraby, 9 November, another 18 January and two 20 January (J. Nicholson). Maryport had twenty-five in Bank End Lonning, 10 November (Frances Irving) and one in Christ Churchyard, 8 March (J. Martin). Thirty at Aspatn ia, 4 December (Ada Teasdale), one at Ellenborough, 7 February (J. Martin) and ten in the middle of Workington, 10 February, per M. McKerrow.

East Cumberland had about fifty at Talkin, 25 December (John Bolton, R. T. Hetherington), three at Heads Nook, 20 January (A. K. Sutherland) and one, eating holly berries, 23

February (James Johnstone). In mid-county, there were small parties about Greystoke, January and February (Henry Mellor); three in Penrith, 5 and 6 February and one 16 February, per W. F. Davidson; twenty at Hutton-in-the-Forest, 10 February (R. H. Brown), and three at Plumpton, 22 February (Mr. and Mrs. Wilfrid Atkinson). Among the central fells, eighty to a hundred came to the Keswick district in November for a week or more and, at Braithwaite, were feeding on haws (William Cowen). Two or more at Crosthwaite, 15 February (H. S. Millard). Two in Gowbarrow Park, Ullswater, 12 December (W.

F. Davidson).

WESTMORLAND. About a hundred at Barrows Green, near Kendal, 9 November, per K. R. Burgess. Fifty at Beetham, 1 December (A. J. Murray). One at Milnthorpe, 8 December, about fifty in late December and one or more 16 February, per K.R.B. One at Arnside, 8 December, two 24 December, up to sixteen 4 to 21 February (H. Chawner, H. B. Turney) and one until 29 March (J. A. G. Barnes). Three or four near Brothers Water, 30 December (R. Hewsbn). Thirty or more in Kendal for a week up to 13 January (Maurice Rowling). About forty at Brigsteer and Lyth in January, per Marjory Garnett. Six at Kirkby

Stephen, 7 February (Walter Thompson). Fifteen near Sedgwick, 1 April (R. D. Humber). Two at Crook for several evenings until 15 May (Sheila McLaren). These last were the latest recorded in the British Isles.

LANCASHIRE NORTH OF THE SANDS. Seven or eight at Newby Bridge, 16 November, per K. R. Burgess. One or more in Public Park, Barrow-in-Furness, 8 February and 1 March (W. Dodd). About six at Grange-over-Sands, 22 February, then two on 9 March (H. B. Turney) and some few 22 March, per K.R.B. One or more Dalton Tythe Barn and Stainton Quarry, near Barrow, 2 March (E. B. Hughes). Thirty near Barrow, 5 March (J. Melville). One or more Stainton, near Barrow, 8 March (S. T. Brown). One at Nibthwaite, 10 March, per L. A. Cowcill. See Report on the Immigration of Waxwings, Winter 1946-7, *British Birds*, 41: 2-9, 34-40.

1947.

CUMBERLAND. Four at Durdar, near Carlisle, 14 December (P. S. Blezard, A. T. Blezard, Walton Siddle).

1949.

CUMBERLAND. Two at Cowrigg, near Raughtonhead, 2 January (James S. Douglas). Five at Port Carlisle, 2 January (R. V. Huggon). One at Scaleby, 16 January (Henry Ruddick).

#### WINTER 1949-50.

CUMBERLAND. Eight to ten at Cumwhinton, 15 December (%V. H. Stordy). One in Warwick Road, Carlisle, December (Kenneth Stubbs). One in Denton Holme, Carlisle, 22 December (Walter Eite). Five at Keswick, 23 December and six at Carlisle, 1 to 4 January (B.E.N.A., *British Birds*, 44: 162). Two or three at Newton Regny, 25 December per *Cumb. & Westmld. Herald*. One at Great Corby, 4 January (Helen Lamb). Three at Black-well, 13 to 21 February (Blezard family).

WESTMORLAND. One at Bridge Syke. Elterwater, 19 November (Joan N. Gibson).

Birds at Cumwhinton, Denton Holme, Blackwell and Elterwater feeding on cotoneaster berries.

1951.

CUMBERLAND. One at Flimby, 13 and 14 November (James Nicholson, Ralph Stokoe). A few at Broughton Moor, November, per R. Stokoe. One at Scaleby, 24 November (R. Underwood).

THE PIED FLYCATCHER—*Muscicapa hypoleuca* (Pall.)

One in Scale Woods, Buttermere, a previously unrecorded haunt, 1 May 1928 (G. A. K. Hervey).

In Kirkby Stephen neighbourhood, where the Pied Flycatcher was discovered breeding in 1945, a pair nested in Podgill, a new place, in 1949 and 1951 and a bird was at least seen there in 1950. A pair nested in Belah Gill, the original haunt, in 1950 and two pairs in 1951 and 1952 (Walter Thompson, Peter Young). The grounds of Morland House are another, and older, East Westmorland nesting haunt (Mrs. Markham).

There are two new breeding localities for Lancashire N.S. A pair nested in a box at Brown Howe from 1946 to 1951, except 1948, and another pair in a Green Woodpecker hole at High Nibthwaite in 1951 (L. A. Cowcill). A pair established near Duddon Bridge in 1950 and 1951 (K. R. Burgess).

THE RED-BREASTED FLYCATCHER—*Muscicapa parva*  
Bechst.

There is a first record for Lakeland in a note on the occurrence, with full description, of what was evidently a male Red-breasted Flycatcher near Ambleside, Westmorland, on 10 September 1946. The bird was "in a wood on the south-east side of Loughrigg Fell ". (Barbara J. Bird, *British Birds*, 40: 84).

THE WILLOW-WARBLER—*Phylloscopus trochilus* (L.)

Twenty-five to thirty Willow-Warblers, evidently birds on passage, settled on a crag on Hard Knott., 1803 feet, 9 April 1946 (O. A. K. Hervey).

THE BLACKCAP—*Sylvia atricapilla* (L.)

A female in a hawthorn hedge at Maryport, Cumberland, 18 December 1948 (Ralph Stokoe) adds a month to the previous latest Blackcap.

THE LESSER WHITETHROAT—*Sylvia curruca* (L.)

Two in Belah Gill, Kirkby Stephen, a new Westmorland haunt, on 13 June 1950 (Peter Young).

THE FIELDFARE—*Turdus pilaris* L.

Two more of the large scale northward movements in autumn were observed near Maryport, on the West Cumberland coast, in 1948. One late October morning, a flock of about eight hundred birds, flying very high, passed over towards the north. In an hour and a half on the morning of 7 November, fine and cold with a breeze from the north, nine flocks, each of about two hundred and fifty birds, headed steadily north one after the other. They were followed by three more flocks during the morning (Ralph Stokoe).

THE SWALLOW—*Hirundo rustica* L.

One at Maryport., Cumberland, 26 November 1949 (Ralph Stokoe) makes the latest for Lakeland.

THE HOUSE-MARTIN—*Delichon urbica* (L.)

On the evening of 10 September 1950, about a thousand House-Martins, in three flocks, arrived from the north to roost. in the reed beds of Esthwaite Water. This very unusual kind of roosting was perhaps influenced by the then impending change from clear, sunny weather to heavy rain from the south-west. (Alan F. Airey).

Twenty pairs nesting below the parapet, about eight feet from the top, on the north side of the concrete barrage across Haweswater, 24 July 1951 (A.F.A.).

THE SAND-MARTIN—*Riparia riparia* (L.)

Of two Cumberland occurrences, single birds each time, one at Upperby Park, Carlisle, 18 March 1952 (Joseph Howe) is the earliest for the county, and one at Todhills, 15 October 1949 (T. P. Davidson) is the latest for Lakeland.

THE HOOPOE—*Upupa epops* L.

One between Holmrook and Gosforth, West Cumberland, at the end of September 1944 (G. W. Dixon). One at Foxfield. Lancashire N.S., in May 1951 (Jeriifer M. Burgess).

THE GREEN WOODPECKER—*Picus viridis* L.

The northern spread of the Green Woodpecker, as it has affected Lakeland, has grown quickly and greatly since its course was noted up to 1945 (*Lakeland Natural History*, 1946, p. 136). Points of altitude are additional features.

It now covers almost the length of the Eden valley from Rockcliffe at the seaward end in 1947 t.o Kirkby Stephen in 1950. From the latter place, in the same year, it extended into the Pennines to Belah Gill and to Heggarscales at 900 feet on the edge of Stainmore. Other places lying south in the valley are Temple Sowerby in 1946, Warcop in 1947 and Appleby in 1951. These are in a district with a history of the bird in the eighties of last century revived in about 1920. Northward, down the valley, there are Great Salkeld in 1948; Baron Wood, another old haunt of last century, in 1947; Cotehill continued from 1943, and Great Corby and Low Crosby in 1949.

East of the valley, again, there is Cumwhitton in 1950. The advance up the Gelt valley, beginning in 1943 and with an offshoot up Hell Beck in 1948, reached Geltsdale at 750 feet in the Pennines in 1949. North of this locality, Hallbankgate in 1950.

Rather west of the Eden, a further sequence of occurrences around Penrith includes Whins Tarn, Edenhall in 1949 onward and Penrith Beacon in 1951. For the Petteril valley, and after Plumpton in 1942, there is Wreay neighbourhood from 1949 onward. This is near Carlisle which itself was actually visited in 1950 while Blackwell on the outskirts, the ancestral haunt of 1840, had a return in 1952. The city cemetery was visited in the same year. To the south-east side, Cumwhinton in 1951. Northeasterly of the city, Brunstock in 1950, Scaleby from 1948 onward and Castlesteads in 1951. These more or less link with Walton of 1944 and the Irthing valley limit, Gilsland of 1945.

More places between the city and the Solway region are The Bow in 1947, Thurstonfield in 1950 and Orton Woods in 1951. To the south, Broadfield from 1948 and Hutton-in-the-Forest in 1951. In the Caldew valley there are Daiston continued from 1945, Cardewlees nearby in 1950, Hesket Newmarket in 1947 and Sebergham from 1949. Roe Banks in the branch valley of the Roe in 1949.

In the south-east of the area, the Lune valley haunts of Kirkby Lonsdale, occupied early this century, had been extended to include Barbondale woods at 500 feet, 1949 to 1951.

The Kent valley became occupied in its length by 1949. From Far Arnside and Meathop, then Hazelslack which ranks from 1947, places run up by Storth, Beetham, Levens, Natland and Rather Heath right to Kentmere. The adjacent Longsleddale enters in 1949. Northward, by Ullswater, Glencoin dates first in 1947, with Glenridding to Hartsop and then Howtown on the opposite side by 1950.

Winster in 1951 follows after the woods of the fells between the Winster valley and the east shore of Windermere in 1949. Fellfoot, Staveley in Cartmel, also links up in 1951. The Cartmel locality of 1933, Grange-over-Sands, had two occupied woods by 1949, and Holker continues from prior to 1943.

In High Furness, birds bred on Claife Heights in 1937 and 1939. Nibthwaite had sudden arrivals in April 1948 and had become a stronghold by the following year. Coniston neighbourhood, a suspected nesting locality prior to 1943, was certainly one in 1949. It featured stronger in 1950 and the spread was then traced round by Tarn lows at 700 feet, Tilberthwaite at 500 feet. Yewdale, Hawkshead and Esthwaite Water side and Sawrey to Graythwaite at the west side of Windermere. Newby Bridge at the foot of the lake, and Barngates north of Hawkshead were added in 1951.

To the west, the Duddon valley, or Dunnerdale, reported prior to 1943, had nesting birds in 1949 and they had gained about Broughton in Furness by 1951. The same year a bird was seen at Calder Abbey and there was nesting at Wasdale Hall.

Around Windermere village, and the Rydal to Grasmere stronghold founded in 1918, the effect has been very marked.

There was a notable increase about Orrest. in autumn 1948, a nest at nearly 900 feet in 1950, and birds since seen and heard at greater heights. Birds were noted at Bowness in 1951. Great. Langdale, with two recorded haunts in 1948, had three by 1950. Elterwater side was noted in the same year and Little Langdale in 1951.

In Borrowdale, come Grange in 1949 and Seathwaite at 700 feet and Bowder Stone in 1951. Either side of Derwentwater, Great Wood of Wallow Crag and Ullock, both 1951, run up towards the old Bassenthwaite haunt dating from 1905. (A. F. Airey, J. Barr, A. Barton, T. Bell, E. Blezard, R. H. Brown. K. R. Burgess, J. B. Cooper, T. Cossor, L. A. Coweill, J. S. Douglas, N.

F. Falison. Margaret Field, F. B. Fisher. W. Fletcher, Marjory Garnett., R. Graham, G. A. K. Hervey, R. T. Hetherington, R. P. Humber, A. Hunter, H. K. Longeake, R. Martindale, M. McKerrow. W. McK. Bell, J. Milbourn. A. V. Millard, G. H. Phillips, A. Pringle, D. A. Ratcliffe. B. W. Robson. H. Ruddick. R. Rule. F. E. Scriven, Mr. & Mrs. W. J. P. Smyly, R. Stokoe, W. Thompson, R. Thow. J. O. Wilson, M. S. Wood, P. Young.) In brief in *British Birds*, 44: 26.

#### THE WRYNECK—*Jynx torquilla* L.

One taking ants in a field dotted with anthills near Elterwater. Westmorland. 20 June 1951 (D. B. Holland).

#### THE LITTLE OWL—*Athene noctua* (Scop.)

CUMBERLAND. In June 1950, the Martin brothers of Blackhall Wood took Ritson Graham to see an owl's nest they had found in a hole in an old black poplar at Durdar. near Carlisle. Containing two young and an addle egg, it proved, as the finders thought it to be, a nest of the Little Owl. Both the young ones were successfully reared in this, the first definitely known nesting of the species in Lakeland. The same hole was reoccupied in 1951 and 1952 but the eggs disappeared each time,

Single birds have been seen near Whicham. 7 June 1948 (G. A. K. Hervey): near Silecroft. 26 June 1949 (B. H. Brown, N. A. Redfern); near Plumpton. June 1951 (R.H.B.): at. Bothel, 12 February 1952 (W. B. Laidler).

WESTMORLAND. Male killed at Kirkher, 'Hilton, February 1947 (J. Blacklock). Two about. Appleby, March 1947, reported by A. G. Britten. One at Stainton. Kendal, 6 October 1947 (R.. T. F. Taylor). Female killed at Warcop, 25 February 1949, sent to Carlisle Museum by Walter Thompson. One at Little Ormside. 12 December 1949 (R. W. .Robson). One near Kirkby Stephen. 24 October 1950 (Walter Thompson). One at Warcop, 10 October 1951 (R. W. Robson). A run of occurrences in the east of the county.

LANCASHIRE NORTH OF THE SANDS. One shot near Cartmel, late 1946, reported by K. R. Burgess. One in Sowerby Woods, near Barrow-in-Furness, 12 April 1947, reported by B. Singleton. Female shot near Dalton-in-Furness, 13 December 1947, sent to Carlisle Museum by Ernest B. Hughes.

THE SHORT-EARED OWL—*Asio flammeus* (Pont.)

Three among young conifers in the State Forest of Greystoke, Cumberland, 30 April 1949 (E. Blezard, W. R. Laidler).

THE PEREGRINE FALCON—*Falco peregrinus* Tunst.

At least thirty breeding pairs is truer than the cautious estimate of nearly twenty in *'The Birds of Lakeland'*.

THE GOLDEN EAGLE—*Aquila chrysaëtus* (L.)

During April 1950, a Golden Eagle ranging the borderland of Cumberland and Northumberland used Christianbury Crags in Bewcastle Fells, Cumberland, as a roosting place (H. Earsman).

THE ROUGH-LEGGED BUZZARD—*Buteo lagopus* (Pont.)

One in the Eden valley, near Armathwaite, at the same time as some half-dozen Common Buzzards, 7 January 1950 (G. A. K. Hervey).

THE COMMON BUZZARD—*Buteo buteo* (L.)

New lines in nest decorations, Cumberland.

1. Flower-budded sprays of Birdeherry *Prunus padus* thickly around two incubated eggs, 30 April 1942.
2. Sprays of Lawson Cypress *Chamaecyparis lawsoniana* along with Larch, Spruce. Rowan and Alder around one incubated egg, 18 May 1952.

A young State Forest to account for the conifers. The nests in surviving trees of an earlier growth (Ernest Blezard).

THE HEN-HARRIER—*Circus cyaneus* (L.)

CUMBERLAND. One in brown plumage at Berrier, 29 February 1948 (E. Blezard) and another on the coast at Allonby, 6 October 1951 (R. H. Brown). A male at Kirklington, 31 January 1952 (W. H. Little). A male, which pounced upon a Moorhen, at Gaitsgill, 20 February 1952 (William French).

WESTMORLAND. A male at New Hall, Appleby, 7 February 1951, hard pressed a Sky-Lark until both were close to the observer (R. W. Robson).

THE OSPREY—*Pandion haliaetus* (L.)

One at Thurstonfield Lough, in late May 1947, mobbed by a party of Rooks and two Herons (G. C. Alisebrook, H. P. Senhouse). One fishing at the head of Bassenthwaite Water, 11 July 1947. watched for two hours (Mr. and Mrs Pearson Douglas).

THE COMMON HERON—*Ardea cinerea* L.

CUMBERLAND. Of heronries once with twelve or more nests, Crofton and Overwater are deserted and Kirkandrews-on-Eden reduced to one or two, 1952. Some new small heronries are Low Ling, Rosley, with two nests in 1951, deserted in 1952 (John Kenny); Alston with four or five nests in 1952 (Matthew Philip-son) and Flimby with two in 1952 (Ralph Stokoe). Great Corby, at its biggest with twenty nests in 1950, was down to fifteen in 1951 and fourteen in 1952 (Ritson Graham).

WESTMORLAND. Connected with the old Bleataru heronry near Warcop, there were two nests at Roswood in 1947, seven in a wood between Ploughlands and Bleatarn and none at Roswood in 1949. The seven down to four in 1950 (R. W. Robson). Over forty nests at Dallam in 1952, and seemingly none at Elterwater (Alan F. Airey).

LANCASHIRE NORTH OF THE SANDS. Underfield heronry at Greenodd, reported to have been bigger in 1940 than in any year since, had seven nests in 1948, five or six in 1950 (S. J. Brown, F. W. Gough) and ten in 1952 (A. F. Airey). The Rusland heronry, now near Whitestock Hall, had sixteen nests in 1951 and ten in 1952. No Herons appeared to be nesting at Roudsea or Holker in 1952 (A.F.A.).

THE BITTERN—*Botaurus stellaris* (L.)

A female at Walby, Crosby-on-Eden, 5 February 1950 (John Hardy) and a male at Armathwaite, Eden valley, 4 January 1951 (W.J. M. Gubbins) both Cumberland and given to Carlisle Museum.

One shot at Holker in Cartmel, January 1951, reported by F. B. Greenwood.

THE WHOOPER SWAN—*Cygnus cygnus* (L.)

The Whooper Swan has become a regular winter-visitor to inland waters in greater numbers. Skegges Water, at 1000 feet, now draws a few birds each winter (Marjory Garnett). Some haunts not previously mentioned by name begin with Brothers Water on which there were thirteen Whoopers on 24 March 1946 (J. B. Cooper).

The hard winter of 1946-47 brought a large company to the lakes and a return visit of Whoopers to the River Eden at Carlisle. Fifty-four, with approximately one cygnet to four adults, on Derwentwater, 27 December (H. F. Greenfield). Six to seventeen on Coniston Water, despite the ice, January to April (L. A. Coweill). Twenty-four on Grasmere, 16 February and evidently the same herd, including only one cygnet, on Elterwater, 23 March (Alan F. Airey). Four in Rayrigg Bay, 20 February and two in Waterhead Bay, Windermere, 14 March (A.F.A.). Four at Carlisle during February and three until 1 April (Frank Ridpath). Twelve on Bassenthwaite Water, 19 April (I. F. Thomas). Still one adult and one cygnet on Thurstorifield Lough, 20 April (Ernest Blezard). Two on salt water at Silloth during February (George Law).

Winter 1947-48. Four in Waterhead Bay, Windermere, end of November until 1 December when they flew off towards Elterwater (Marjory Garnett). Seven on Coniston Water during February (L.A.C.). Twelve on Elterwater, 3 February, eight on Grasmere, 27 February and then twenty, including six cygnets, 4 March (A.F.A.). Thirty on Derwentwater, 3 February (Ralph Stokoe) and twenty, 10 February (R. N. Johnson). Two adults with four cygnets on Loweswater, 16 February (Robert Walker). Three adults on Thurstonfield Lough, 15 February to 7 March

(E.B.).

1948 to 1951. Three adults and four cygnets on Thurstonfield Lough, 14 November 1948 (E. Blezard, N. F. Ellison, R. Martin-dale). Eight adults and eight cygnets on Whins Tarn, 16 and 19 November 1948 (A. J. Wallis). Fourteen on Buttermere, 29 March 1949 (M. McKerrow). Nine on Derwentwater, October 1949 (K. V. Elphinstone) and twelve, 5 February 1950 (D. F. Owen). Fifteen at Thurstonfield, 8 January, and four from 26 March to 10 April 1950 (A. V. Millard, H. R. M. Millard, E. Blezard). Six on Coniston Water, January 1951 (L. A. Cowcill), and twelve, Thurstonfield, 4 March 1951 (A.V.M.).

Winter 1951-52. Nine adults on Thurstonfield Lough, 18 November (Ritson Graham, A.V.M., S.J.B.). Twenty adults and five cygnets on Whins Tarn. 26 December (W. F. Davidson, Ayliff a F. Harvey, G. A. K. Hervey). Forty adults and two cygnets in White Cross Bay, Windermere, on 27 January when Grasmere and Rydal Water were frozen over, had dispersed by 3 February leaving sixteen in High Wray Bay (Alan F. Airey). Twelve on Coniston Water, 26 January (L. A. Cowcill) and five on 10 February (S. J. Brown). Three adults on tidal stretch of River Eden at Cargo, 2 February (T. P. Davidson). Six adults on Rydal Water, 19 February (A.F.A.). Four adults on Over-water, 2 March (T. Jackson, T. Stephenson). Three adults and two cygnets on Barnegates Tarn and six adults on Elterwater. 10 March (A.F.A.). Three at Tarn House, Ravenstonedale, 30

December and then twelve 23 March (R. W. Robson). Nineteen on Thurstonfield Lough, 6 April 1952 (A.V.M.).

Three adults on the River Eden at Carlisle, 28 November 1952 (W. H. Little).

#### BEWICK'S SWAN —*Cygnus bewickii* Yarr.

An adult and a cygnet, with two Whoopers and thirty-four Mutes, on Thurstonfield Lough, 30 March 1947 (A. V. Millard, N. F. Redfern). An adult on the River Eden, Great Salkeld, Cumberland, 11 to 15 December 1948 (G. A. K. Hervey) and an adult, whether the same or not, on Whins Tarn, Edenhall, 19 December (Avliffe F. Hervey).

#### THE GREY LAG-GOOSE—*Anser anser* (L.)

A record number of seven to eight hundred, which had a halfdozen Fink-feet along with them, were in the Kent estuary on 20 December 1947. The most in 1948-49 were three hundred and seventy on 2 January (J. A. O. Barnes). There were three hundred on Meathop Marsh, by the Kent, on 21 January and 4 February 1952 (Alan F. Airey).

Visitors to Bassenthwaite Water numbered sixteen on 27 December 1947, six on 10 March 1948 (O. A. K. Hervey) and five on 11 March 1951 (Ralph Stokoe).

A gaggle of thirty-six geese which came down to Sunbiggin Tarn, one day in March 1950, were definitely identified as Grey Lags. They all stayed until next day and some twelve of them for four days (Malcolm Ross).

On 18 February 1952, a skein of a hundred and thirty, which came from Meathop direction, flew over the Leven estuary and on by Greenodd apparently in the direction of the Duddon (A.F.A.).

#### THE GREENLAND WHITE-FRONTED GOOSE—

*Anser albifrons flavirostris* Dalgety & Scott

A new addition to the Lakeland list of birds. A Greenland White-fronted Goose, as it was later proved to be, was shot in the Eden estuary, Cumberland Soiway, on 23 November 1947 by E. Edwin Laval and given by him to Carlisle Museum. He had been impressed by the rich orange-yellow bill and legs and very heavy black belly markings of this bird immediately on picking it up. It was flying all alone at the time it was shot. An adult female by dissection.

On 16 December 1949, T. P. Davidson met with ten White-fronts at the same place and shot two of them. Both were adults and fully typical of the Greenland race. (E.B., *British Birds*, 43: 89).

Three White-fronts on Bassenthwaite Water, 7 January to 19 March 1952, all had the characters of the Greenland bird in orange bill and legs, dark head and neck and heavily barred belly (Ayliffe F. Hervey, G. A. K. Hervey, O. B. Rigby).

A White-front with orange bill and orange legs was shot by Michael Bratby on Meathop Marsh, Kent estuary, Westmorland, November 1937 (*Grey Goose*, 1939, pp. 102-3).

THE PINK-FOOTED GOOSE—*Anser fabalis brachyrhynchus*  
Baillon

Four birds marked on breeding grounds in Central Iceland, in July 1951, and recovered on the Cumberland Solway are one on 25 October and two in mid-December 1951 by Geoffrey Wilson, and one on 11 January 1952 by Raymond Harris and George Ritchie. A fifth was shot by Cyril L. Atkinson on 28 December 1952.

Three others recovered in the same locality and marked by Peter Scott: —Berwickshire, 18 October 1950, shot 4 February 1951 by E. Edwin Laval. Solway, October 1951, shot 2 November 1951 by James Howcroft. South-east Scotland, 21 October 1951, shot 11 November 1951 by Geoffrey Wilson. Particulars of ringing supplied by Miss E. P. Leach.

More than fifteen thousand Pmk-footed Geese were estimated to be on Rockcliffe Marsh on 3 November 1951 (Ritson Graham).

THE BARNACLE-GOOSE—*Branta leucopsis* (Bechst.)

On the Solway there is a desertion of Longnewton Marsh and a return to Rockcliffe Marsh where two hundred were present during December 1949 (T. P. Davidson) and a hundred and fifty in January 1951 (E. E. Laval).

One was among Grey Lags in the Kent estuary, where the Barnacle-Goose is scarce, on 21 December 1948 and 2 January 1949 (J. A. G. Barnes).

THE BRENT GOOSE—*Branta bernicla* (L.)

Fifty on Rockcliffe Marsh during the first two weeks of January 1947 (T. P. Davidson).

An uninjured Brent attached itself to domestic geese around Rockcliffe village for about a week in December 1951 (J. Park).

THE CANADA GOOSE—*Branta canadensis* (L.)

Two on Bassenthwaite Water in 1951 from 16 to 26 May (M. McKerrow) and on to 31 May, then three in November (Enid J.

Wilson). One on the same lake, 19 March 1952 (Ayliffe F. Hervey, G. A. K. Hervey, O. B. Rigby).

THE SHELD-DUCK—*Tadornu tudornu* (L.)

Easterly departures from the Solway as noted in Cumberland, 1948:—

On July-August evenings, several skeins over Cargo and Rockcliffe (T. P. Davidson).

1 August, 18.45 hours, about fifty over Crosby-on-Eden. An hour earlier, thirty were heading west (W. Robinson).

3 August, about 21.00 hours, thirty over Scaleby (H. Ruddick).

5 August, 19.00 hours, about eighty just beyond Carlisle (W. Griffiths). Unusual inland occurrences. Two at Brownber Tarn, 1900 feet, Kettlepot Moor, Westmorland Pennines, 17 May 1951 (Walter Thompson). Four at Bassenthwaite Water, 7 January 1952 (G. A. K. Hervey) and four again, on the ice there, 17 February 1952 (Ralph Stokoe).

THE GADWALL—*Anas strepera* L.

Gadwall bred for the first known time in Westmorland, near Appleby, in 1947. The duck of a pair, watched since May, had nine small ducklings with her on 15 June. The family were seen on the wing on 3 August. A pair returned in 1948 and a deserted nest of two eggs was found on 22 April. A new nest which held nine eggs by 2 May also became deserted. A third attempt was suspected. A pair of Gadwall were again in the district in 1949 (R. W. Robson).

Two females or immatures in the Kent estuary, 8 to 12 October 1946 (J. A. G. Barnes, *British Birds*, 40: 259). A drake on Blelham Tarn, Lancashire N.S., 22 October 1950 (R. H. Brown).

THE TEAL—*Anus crecca* L.

A Teal recovered at Burgh-by-Sands, Cumberland Solway, 2 October 1948, was ringed as young in North Iceland, 25 July 1948 (*British Birds*, 43: 287).

THE GARGANEY—*Anas querquedula* L.

The first Garganey to be recorded for Westmorland was with seven Mallard in the Kent estuary, opposite Sandside, on 4 May 1947 (R. T. F. Taylor, *British Birds*, 41: 88).

A pair seemingly made an unsuccessful nesting attempt at a pond near Appleby, in the same county, in April 1948 (R. W. Robson).

THE WIGEON—*Anas penelope* L.

The nesting of Wigeon in Westmorland was first definitely proved on 19 June 1947 when a duck and her small young ones were seen on a tarn in the east of the county. The event had previously been strongly suspected there, particularly in 1946

(Marjory Garnett, *British Birds*, 41: 88). At the same tarn, on 2 July 1951, three of six Wigeon ducks certainly had broods of young with them (R. W. Robson).

#### THE PINTAIL—*Anas acuta* L.

Two pairs on Thurstonfield Lough, 14 March 1948. Again two pairs, 20 March 1949, then one drake on 27 March and six drakes with four ducks on 3 April (Arthur V. Millard). Also in the Solway region, a pair in the Eden estuary at Rockcliffe, 25 February 1950 (D. F. Owen). Two drakes on Sunbiggin Tarn, 2 December 1951 (R. W. Robson). A pair on Bassenthwaite water 3 March 1952 (G. A. K. Hervey).

#### THE SHOVELER—*Sputula clypeata* (L.)

In the second week of May 1949, a pair of Shoveler with eleven small ducklings were at the west, or Cartmel side of Helton Tarn in the Winster valley (Alan F. Airey). This must remain a possible new breeding record for Lancashire North of the Sands, because the east side of the tarn is in Westmorland.

#### THE SCAUP-DUCK—*Aythya marila* (L.)

Inland occurrences.

Whins Tarn, Edenhall, Cumberland. Male and female, in eclipse, 27 and 28 September and 10 October 1949. Male and female, 27 and 28 September (dates repeated), female alone 2 October and male and female again, 4 October 1950. A seemingly immature male, 12 January 1952 (G. A. K. Hervey). Sunbiggin Tarn, East Westmorland. Male, 24 February 1952 (R. W. Robson).

#### THE GOLDENEYE—*Bucephala clangula* (L.)

Eden estuary, Rockcliffe, Cumborland. Four adult drakes, 6 June 1946 (Ralph Stokoe). A drake, 7 August. 1947 and another 5 August 1949 (E. Blezard). Four, apparently all immatures, 13 August 1950 (G. A. K. Hervey).

Two adult drakes, one of them winged, on Killington Reservoir, Westmorland, 1 June 1949 (R. H. Brown).

#### THE LONG-TAILED DUCK—*Clangula hyemalis* (L.)

An adult female, on a high tide, in the Kent estuary, near Arnside, Westmorland, 18 January 1946 (H. Chawner, *British Birds*, 40: 259). The Long-tailed Duck is rare in the southern estuaries

THE COMMON EIDER—*Somateria mollissima* (L.)

The breeding of the Eider on Walney Island, Lancashire North of the Sands, in 1949 was the first known event of its kind in any part of England other than the coast and islands of Northumberland. The particulars of this event, and of nesting in the three following years, are given by Arthur V. Millard.

7 June 1949. A large brown duck, unexpectedly flushed from her nest, proved to be no other than an Eider. She flew about fifty yards to pitch on the sea. The nest was in the shingle, a short way above high water mark, and formed of tideline rubbish including dried seaweed and grass. It was thickly lined with down and it contained four eggs. When visited again on 19 and 25 June, and on 2 July, the duck sat tight and allowed a close approach. Friends reported that hatching took place on 7 July when the duck was seen to lead three ducklings down to the water. No drake was seen on any of the occasions.

Fred Swarbrick, the lightkeeper, gave the information that a small number of Eiders had become regular in winter. During one of the visits, the decomposed body of a female Eider, a bird which evidently had been dead since the early part of the year, was found under dnft on the tideline.

In 1950, a pair were earlier in their nesting. The five ducklings which were brought out were seen by S. J. Brown on 18 June, and jointly on 24 June. The full five were last seen by S.J.B. on 2 July.

2 June 1951. A duck was sitting on a nest in almost the identical site of 1949. Eight other Eiders, at least five of them drakes, were seen close inshore. The lightkeeper later sent word that four ducklings emerged from the nest and that a fifth egg was addled.

2 June 1952. A cluck, at about the original spot, had five eggs which were thought to be a repeat clutch after some mishap. Another duck, most unusually escorted by the drake, had three early-hatched ducklings with her. Up to about forty Eiders had been seen together during the previous winter by Mr. Swarbrick, to whose interest and care the nesting birds have kept their footing.

THE COMMON SCOTER—*Melanitta nigra* (L.)

inland occurrences in Westmorland. One on Sunbiggin Tarn, 7 July 1948 (T. W. I. Cleasby, J. H. B. King, H. P. Winsor), and one on Killington Reservoir, 10 July 1948 (J.H.B.K.). Female on Tarn House Tarn, Ravenstonedale, July 1950 (Marjory Oarnctt).

THE GOOSANDER—*Mergus merganser* L.

For some years past there has been strong reason to believe in the breeding of the Goosander in Lakeland. This certainly happened in North Cumberland in 1950. On 20 May, in that

year, Ian Waugh sent word to Ritson Graham of a strange bird he had found nesting in a hollow tree. The latter went out four days later to recognise the stranger as a Goosander. She was then closely brooding her clutch of eggs in her chosen tree, an old ash, by the side of the River Lyne. Hatching began on 20 June and, next day, the duck went off up the river with six ducklings. Five unhatched eggs were left in the nest. The tree was not used again in 1951 or 1952.

THE RED-BREASTED MERGANSER—*Mergus serrator* L.

The first really conclusive evidence of nesting in Lakeland comes from the River Esk, Longtown, Cumberland. A duck with six ducklings, perhaps four days old, were seen there on 6 July 1950. Ten pairs of Mergansers were estimated to be in the neighbourhood on 28 May 1950 (D. F. Owen).

THE SMEW—*Mergus albellus* L.

A drake, possibly with a duck, on Coniston Water, 17 February 1950 and another drake 18 February 1951 (L. A. Cowcill). Two females or immatures on Bassenthwaite Water, 11 February 1952 (G. A. K. Hervey). The Smew is a rare visitor to the lakes.

THE CORMORANT—*Phalacrocorax carbo* (L.)

In confirmation of breeding at St. Bees Head, one bird, out of seven, was sitting on a nest, 12 June 1949 (E. Blezard, J. Hughes, A. V. Millard, N. A. Redfern). Two nests, one containing small young, were viewed on 8 July 1950 (Ralph Stokoe) and two nests with eggs and young respectively on 17 July 1952 (E.B., A.V.M.).

Recent increases in the numbers of wintering Cormorants on the Soiway have been very great and birds have taken to foraging up the smaller rivers where they were previously unknown. Fully a thousand were gathered on one sandbank in the Eden estuary on 14 November 1948 (E. Blezard, N. F. Ellison, R. Martindale). About twice this number were seen together in the winter of

1950 (R.M.).

Five Cormorants ringed as young on the same date, 17 July 1947, at Mochrum, Wigtownshire, were shot about the Eden estuary, four months to three and a half years later. Another ringed at Mochrum, June 1935, was found dead thirteen years later on Rockcliffe Marsh, July 1948.

THE SHAG---*Phalacrocorax aristotelis* (L.)

Cumberland. A dead one in the Eden estuary, Rockcliffe, February 1950 and one, with two Cormorants, up the River Esk, Longtown, 12 April 1950 (D. F. Owen).

Westmorland. An immature in the Kent estuary, Arnside, 30 November 1944 (J. A. G. Barnes, *British Birds*, 40: 259). Three in Waterhead Bay, Windermere, 29 November 1946 (P. H. T. Hartley), and one by the river in Kentmere, the same day (Marjory Garnett). One far inland at Warcop, after wild westerly weather, 20 September 1950 (A. Jackson).

LEACH'S FORK-TAILED PETREL—*Oceanodroma leucorhoa*  
(Vieill.)

Male picked up at Millom in the south-west of Cumberland, 20 September 1950 and given to Carlisle Museum (E. O. Driver).

The great "wreck" of, extensively on the west of the country, brought about by the gales of late October 1952, left a trail along the shores of Lakeland and inland.

CUMBERLAND. The coastal tally begins with a male, shot as it was flying over the water of the upper Solway, off Burgh Marsh Point, on 26 October (Arthur Beattie). It next runs: a male alive at St. Bees on the 28th (H. E. Reekie); a dead bird in Maryport on the 30th (J. J. Wilkinson); another, a short way landward, at Dearham Bridge on the 31st, per Ralph Stokoe, and another at Allonby on 3 November (A. V. Millard). One from Waberthwaite, to the southward, was received by S. J. Brown.

Some miles of shoreline were afterwards searched by Ralph Stokoe. He found seven corpses between Dubmill Point and Allonby and two within two miles north of Maryport on 8 November; five at St. Bees on the 9th, and one more there on the 23rd.

All the known inland occurrences were in the northern part of the county. A female was picked up at Bolton Fell, 29 October (T. Milburn). By the River Esk, near Longtown, on 30 October, were found a dead male and a live bird (James Westoll), and one more in death (W. Malcolm). Farthest to the east was a dead bird at Brampton on 31 October (Katherine S. Hodgson). Two dead in the City of Carlisle were found on 30 October (T. Holt) and 3 November (H. Dawson). This last was in Scotland Road where a Fork-tailed Petrel occurred in November 1908.

WESTMORLAND. About Arnside, on the Kent estuary, there were a dying bird on 28 October, a dead one on 2 November and a live one over the river on 4 November (J. A. G. Barnes). A male, found alive near Hilton on 28 October (William Atkinson) had reached the Pennine fell foot, close to the eastern limits of the county. Another bird, nearly as far to the east, was dead at Hoff, near Appleby, on 5 November (J. S. Marshall). Others inland were one dead near Troutbeck, Windermere, on 31 October (Mrs. Hedley) and one at Lily Mere about 3 November, per  
A.F.A.

LANCASHIRE NORTH OF THE SANDS. A bird was inland at Rusland and flying north on 3 November (Alan F. Airey). Four were found dead in the Leven estuary, one of them near Holker, on 8 November, per A.F.A. Two were reported from about Lowick to S. J. Brown.

The sexed birds, five males and one female, are in Carlisle Museum.

A Storm-Petrel was identified in flight off Burgh Marsh Point on 2 November (Frank Nelson). Besides the Grey Phalarope in Westmorland, separately recorded, a variety of other bird victims were found after the gales. The dead along the coast between Allonby and St. Bees included a Red-throated Diver and some Common Scoters, Razorbills and Guillemots, all of them "oiled" (Ralph Stokoe). A live Little Auk, which soon died, was picked up on an aerodrome runway near Longtown on 5 November (J. W. Kirkup).

A male Leach's Petrel, alive but soon dead, arrived at Ormside, Westmorland, during a gale from the north-west on 17 December 1952. It was picked up by William Pratt and given by him to Carlisle Museum.

#### THE MANX SHEARWATER—*Puffinus puffinus* (Brfinn.)

One at Ravonglass, Cumberland, 16 June 1948, had evidently met its death actually in the gullery (Robert Walker).

One on a high tide at Arnside, Westmorland, 24 April 1947 (J. A. G. Barnes).

A dead one on Foulney Island, 17 May 1947 and another on Walney Island, Lancashire N.S., 26 July 1947 (S. J. Brown).

#### THE FULMAR *Fulmarus glacialis* (L.)

The Fulmars at St. Bees Head tend to be more numerous early in the spring season than later. Some may leave, and not all of the remainder breed. In 1949, twenty-two pairs on 24 April had dwindled to twelve pairs on 12 June. Perhaps ten pairs were present on 8 July 1950, and no more than six birds were seen on 20 May 1951 (Ralph Stokoe).

Only one egg was found during a descent into the quarters of eight pairs on 12 June 1949, and there were two chicks to six pairs on 17 July 1952 (E.B.).

#### THE GREAT CRESTED GREBE---*Podiceps cristatus* (L.)

On a Cumberland tarn, not previously recorded as a breeding haunt, two pairs nested in 1939 and 1940 and one pair in 1941 and again from 1944 to 1946 (R. H. Brown). One pair nested in 1947 (Ritson Graham).

Two birds were on Mockerkin Tarn on 4 May 1948 (W. R. Laidler) and two on Bassenthwaite Water during May 1951 (M. McKerrow).

On Coniston Water, near Nibthwaite, in 1947 and in 1948, a pair displayed for a month and then left, in 1950 a pair settled and nested, but the eggs were deserted. In 1951 a bird was present so early as 9 February and, later on, there was a pair which apparently did not stay to nest (L. A. Coweill).

Esthwaite Water, the original haunt, had five breeding pairs in 1950 and probably six in 1951 and 1952; Bleiham Tarn four pairs in 1952 and Windermere **one** pair, near Grass Holme, on 25 June 1952 (Alan F. Airey).

THE RED-NECKED GREBE—*Podiceps griseigena* (Bodd.)

Two together on Buttermere, 26 February 1950 (R. H. Brown).

THE SLAVONIAN GREBE—*Podiceps auritus* (L.)

Cumberland. Female shot on River Eden at Rockcliffe, during hard frost, 13 February 1947 and given to Carlisle Museum (T. P. Davidson). One in a flooded gravel pit at Longtown, 19 February 1950 (D. F. Owen).

Westmorland. On Windermere in 1947, one south of Wray, 13 January (Marjory Garnet.t), and four in Waterhead Bay, 22 February (Alan F. Airey).

Lancashire North of the Sands. One on the tidal water of Rusland Pool, near Haverthwaite, 9 February 1952 (A.F.A.).

THE BLACK-NECKED GREBE—*Podiceps nigricollis* Brehm

An immature on Siddick Pond, Workington, Cumberland, 3 to 18 August 1948 (Robert Walker, *British Birds*, 42: 192).

One on the River Eden, near Ormside, Westmorland, 27 October 1950 (R. W. Robson). One in Rayrigg Bay, Windermere, 19 December 1951 (A.F.A.).

THE GREAT NORTHERN DIVER—*Colymbus immer* Brunn.

One in Allonby Bay, 3 March 1951 (R. H. Brown) and one in the Solway off Drumburgh, 1 November 1951 (Ernest Blezard).

THE BLACK-THROATED DIVER—*Colymbus arcticus* L.

Female shot on the River Eden at Rockcliffe, 22 February 1947 and given to Carlisle Museum. One again at this same place, 16 February 1952, and similarly beginning to show white spots in the back (T. P. Davidson). Male shot on Windermere, 27 February 1947, had been partly plucked before sent to Carlisle Museum for confirmation of identity. Four on Ullswater during

February 1949 (J. R. Cooper).

THE STOCK-DOVE—*Columba aenas* L.

A nest of two eggs, in the ventilation hole of a barn in Kentmere, Westmorland, hatched out about 14 to 15 September 1952 (Marjory Garnett).

THE TURTLE-DOVE---*Streptopelia turtur* (L.)

In Cumberland, one was seen near Langwathby on 18 June 1948 (D. A. Ratcliffe) and a pair nested in a hawthorn at Bowness.. on-Solway in June 1951 (R. V. Huggon).

THE BLACK-TAILED GODWIT—*Limosa limosa* (L.)

Six near Allonby. on the west coast, 26 October 1946 (G. A. K. Hervey).

THE COMMON CURLEW—*Numenius arquata* (L.)

One of two pairs which bred in Carlisle Cemetery in 1951 had their nest actually on a grave mound where they succeeded in hatching out four young ones (Alec. Smith).

THE WHIMBREL—*Numenius phaeopus* (L.)

Inland occurrences. One just north of Carlisle and going westerly towards the Solway, 12 May 1951 (Ernest Blesard). A party of eight, after feeding in a pasture at Field Broughton in Cartmel, flew off to the north, 8 May 1952 (Alan F. Airey).

THE COMMON SNIPE—*Capella gallinago* (L.)

Two nests, completely exposed, on top of turnip stitches at New Hall, Appleby, Westmorland, 5 June 1950 (R. W. Robson).

THE GREY PHALAROPE—*Phalaropus fulicarius* (L.)

A victim of the same gales which accounted for so many Fork-tailed Petrels, a Grey Phalarope was found on 29 October 1952 at High Borrans, Windermere, where it had apparently struck a telephone wire (R. Spedding).

The only previous occurrence known for Westmorland was at Windermere in 1891. This second bird is a female and preserved in Carlisle Museum.

THE TURNSTONE—*Arenaria interpres* (L.)

Six adults on the Cumberland coast at Allonby, 28 July 1946 (Ralph Stokoe) and eight adults at the same place, 17 July 1950 (R.H. Brown). Thirty to forty on a groyne at the south end of Walney Island, 19 June 1947 (A. V. Millard, S. J. Brown).

THE CURLEW-SANDPIPER—*Calidris testacea* (Pallas)

Kent estuary, Arnside, Westmorland. One on 5 September, four on 6 September, eight on 7 September (J. C. S. Ellis) and thirteen on 12 September dwindled to the last one on 14 October 1946 (J. A. G. Barnes, *British Birds*, 40: 260). One, in red plumage, among Dunlins, Sanderlings and Ringed Plovers, 11 May 1948; six on 14 September 1948 and two on 14 and 15 September 1950 (J.A.G.B.). Two in red plumage in a large flock mostly of Dunlins and Ringed Plovers and including one Turn-stone, Burgh Marsh, Solway, 14 May 1950 (A. V. Millard).

THE LITTLE STINT—*Calidris minuta* (Leisler)

Kent estuary at Arnside. Four on 6 September, seven on 7 September (J. C. S. Ellis); sixteen, including two adults, on 15 September, after several days of wild westerly weather; one or two until 14 October 1946 (J.A.G.B., *British Birds*, 40: 260). One on 5 September 1948 and two on 15 September 1950 (J.A.G.B.).

Three at Penrith Sewage Farm, in Westmorland, 19 August 1950 (W. F. Davidson, G. A. K. Hervey), make the first known inland occurrence. Five in Wampool estuary, Oumberland 10 October 1946 (E. Blezard).

THE COMMON SANDPIPER—*Actitis hypoleucos* (L.)

A wintering Common Sandpiper was seen on several occasions in 1951-52 at two places on the River Eden. Whether or not the same bird, the places are eighteen miles apart and the later occurrences were at the more northerly of the two. At Warcop, Westmorland, on 4 November (R. W. Robson) and then on 26 and 28 November (F. B. Chancellor). At Great Salkeld, Cumberland, on six dates between 11 December and 21 January, then 7 February and lastly 16 March (Ayliffe F. Hervey, G. A. K. Hervey).

THE GREEN SANDPIPER—*Tringa ochropus* L.

A male, as it proved, which had been noted on the tidal reaches of the River Eden about Cargo, Cumberland, since February, by P. P. Davidson, was shot on 8 March 1947 by T. P. McCormick and given to Carlisle Museum. Eight, or more, about the same place, 28 August 1949 and one 14 March 1950 (Ernest. Blezard). One at Culgaith, in the Eden valley, 21 January 1950

(J. Oliver Wilson) and one on Rockcliffe Marsh, Solway, 3 November 1951 (Ritson Graham).

THE REDSHANK—*Tringa totanus* (L.)

An exposed nest on top of a turnip stitch at New Hall, Appleby, 5 June 1950 (R. W. Robson).

The Leven estuary is another gathering place of Redshanks in numbers. Two to three hundred near Ulverston viaduct, 8

April 1940 (Ernest Blezard), and more than five hundred divided between Park Bay and Greenodd sands. 13 March 1952 (Alan F. Airey).

THE SPOTTED REDSHANK—*Tringa erythropus* (Pallas)

Cumberland. One with a Greenshank at Cardurnock, Soiway, 4 September 1949 (W. R. Laidler).

Westmorland. Kent estuary at Arnside. Adult in summer plumage, 7 July 1946 (J. A. G. Barnes); adult in winter plumage, 30 August 1946 (H. Chawner); juvenile, 30 September 1946 (J.A.G.B., *British Birds*, 40: 260). One 10 September 1950 and one 10 September 1951 (J.A.G.B.).

Lancashire North of the Sands. Leven estuary. One 14 February 1948 (S. J. Brown) and one 2 October 1951 (J.A.G.B.).

THE GREENSHANK—*Tringa nebularia* (Gunn.)

One at Arnside, on 26 April 1945, appears to be the first spring record for the southern estuaries (J. A. G. Barnes, *British Birds*, 40: 260). One in the same locality on 13 March 1947 (J. A. Graham) and the same, or another, present from 30 March to 8 April (J.A.G.B.).

Inland occurrences in Westmorland. One on the River Eden, near Appleby, 15 April 1950, and one 7 to 9 September 1950 (R. W. Robson). Two at Penrith Sewage Farm, 1 and 2 September 1950 (W. F. Davidson, G. A. K. Hervey). Two at Sunbigin Tarn, 30 July 1952 (Marjory Garnett).

THE RINGED PLOVER—*Charadrius hiaticula* L.

Inland nesting in Cumberland. One pair on the River Eden at Great Salkeld, 1947 to 1951 (G. A. K. Hervey). Two pairs on the River Irthing below Lanercost, 14 May 1950 (Ritson Graham).

THE GOLDEN PLOVER—*Pluvialis apricaria* (L.)

Additional nesting haunts in the central fells are Armboth (D. A. Ratcliffe) and Ullscarf (H. F. Greenfield).

Birds may appear on high Pennine breeding grounds in all months of the year. Thirty-five at 2500 feet on Crossfell, 26 September 1948, and three 27 October 1945 (D. A. Ratcliffe). Two at Seamore Tarn, 2250 feet, 18 November 1951 (R. W. Robson). One on Kettlepot, 1700 feet, 1 December 1950, and one 20 January 1951 (Peter Young).

In the North Cumberland moorland, there were forty to fifty at 700 feet on Wiley Syke on the evening of 20 December 1951 (Ritson Graham), and about twelve near 1400 feet on Glendhu Hill on 6 October 1952 (C. Begley, E. Blezard).

THE LAPWING—*Vanellus vanellus* (L.)

An almost completely white bird was established near Carlisle, and apparently nesting, during the spring of 1951 (Thomas Jackson). A white Lapwing was bred and reared to flying stage in the Carlisle district in 1950.

One ringed as young, Burgh Marsh, Cumberland, 23 May 1950. by R. H. Brown, was recovered at Pleyberchrist, Finistere, France. 29 January 1951 (*British Birds*, 44: 303).

THE AVOCET—*Recurvirostra avosetta* L.

One on the Cumberland Solway at Port Carlisle, 18 September 1950 (J. H. Robinson). The first known occurrence in the county and second in Lakeland.

THE OYSTER-CATCHER—*Haematopus ostralegus* L.

Breeding birds have reached the headwaters of the River Lyne in the Bewcastle Fells, Cumberland. A pair came to the White Lime in 1949 and a pair to the Black Lyne in 1950. At least fifteen pairs were nesting along little more than a three mile stretch of the River Irthing, below Lanercost, in 1950 (Ritson Graham).

Rydal Water had an unusual visitor in an Oyster-catcher, on 9 March 1952 (R. E. Porter).

One ringed as young at Little Salkeld, on the River Eden. Cumberland, 22 June 1949, by Atholl Wallis, was recovered at! l'Aguillon-sur-Mer. Vendee, France. on 10 August 1949 (*British Birds*, 43: 323).

THE CREAM-COLOURED COURSER—*Cursorius cursor*  
(Latham)

An adult male was shot on the Cumberland Solway at Grune Point!. Skinburness, on 15 October 1947 by John Stockdale. This bird, which was given to Carlisle Museum, is the second of its kind for the county and for Lakeland (E.B.. *British Birds*, 41: 92)

THE BLACK TERN—*Chlidonias niger* (L.)

Eight which came to Sunbiggin Tarn, East! Westmorland. from the south-west on 14 May 1947. after hawking over the water for a time. went! off easterly (Marjory Garnett). Two at! a small tarn in the Troutheck valley. Westmorland. May 1947 (M. S. Wood). One among Common Terns at! Arnside. Kent! estuary. late August. 1948 (V. Belfield). Sit at Sunbiggin Tarn. June 1949 (Malcolm Ross). An early arrival at Bassenthwaite Water. 21 March 1950 (M. McKerrow). Four juveniles at Skinburness Solway. 17 September 1950 (R. Stokoe). Five at Arnside, 20 September and three 22 September 1951 (J. A. C. Barnes).

THE SANDWICH TERN—*Sterna sandvicensis* Latham

Two ringed as young on Walney Island, 7 and 19 June 1949, by A. V. Millard, were recovered; the first at Oporto, Portugal, 22 October 1949; the second at Ada, Gold Coast, 21 November 1949 (*British Birds*, 43: 324).

THE ROSEATE TERN—*Sterna dougallii* Mont.

One among Common Terns on Walney Island, 17 July 1918 (S. J. Brown).

THE ARCTIC TERN—*Sterna macrura* Naum .

The spring of 1947 saw an exceptional inland passage of Arctic and Common Terns over many counties. One feature in the report by John Gibb, *British Birds*, 41: 167-73, is the marked predominance of Arctic Terns. Violent south-westerly and then westerly weather conditions prevailed (luring the early part of the migration period. Birds were seemingly driven inland from the west, and aside from a likely normal course up the Irish Sea, rather than from the south.

There were occurrences over almost the length of Lakeland, the more northerly not necessarily following upon those in the south of the area. By chance, the birds really identified here were all Arctic, but there were the others which were not distinguished as to species. Three of the Westmorland occurrences are included in the general report.

CUMBERLAND. Twelve Arctic on 22 April, four to five 25 April, eight to ten 28 April and again 2 and 3 May, along the River Eden at Great Salkeld (O. A. K. Hervey). Two frequenting the pond in Upperby Park, Carlisle, 23 to 25 April (Joseph Howe). About twelve, one of them seen to be Arctic, hawking over a large ploughed field at Mossband, by the upper Solway, evening of 27 April. Earlier in the day, a similar number had been seen in from the Scottish side of the firth at Auchenreoch Loch, Kirkcudbrightshire (E. Blezard, P. S. Day, W. R. Laidler, D. A. Ratcliffe). A male Arctic, given to Carlisle Museum, was picked up at Hallbankgate, in the North-east, 28 April (John Watson).

WESTMORLAND. Four Arctic over flood water near Appleby, 22 April; one afterwards recovered from a Tawny Owl nest, and then three until 3 May (R. W. Robson). Up to about forty Arctic at a time, some feeding on earthworms in ploughed fields, at the head of the Kent estuary, April-May (J. A. G. Barnes). Five or six over the Kent at Levens, end of April (A. Matchett). About twenty at Lyth, 30 April (H. S. Millard). An unusual number, mostly going on from the Windermere valley by Waterhead, and one in Kentmere for two or three days, all up to the beginning of May, per Marjory Garnett.

A lingering Arctic, often with a Little Gull, in the Kent at Arnside up to 23 October 1948 (J.A.G.B.). Two inland at Whins Tarn, Cumberland, 23 September 1950 (W. F. Davidson, G. A. K. Hervey).

THE LITTLE TERN—*Sterna albifrons* Pallas

Two early arrivals at Sandside, Kent estuary, 22 April 1947 (.1. A. G. Barnes). A female, a victim of the prevailing wild south-westerly wind and rain, picked up at the head of Coniston Water, 24 April 1947, given to Carlisle Museum (Mrs. J. D. Dalby).

SABINE'S GULL—*Xema sabini* (Sabine)

On 24 September 1950, a small gull with blackish hood was swimming on a pool of water on Rockcliffe Marsh. Closely approached, it rose and flew feebly, showing the bold wing-pattern characteristic of Sabine's Gull, while its legs appeared almost blackish (W. R. Laidler). The second adult to occur on the Cumberland Soiway and, similarly, after violent westerly weather. See 'The "Invasion" of Sabine's Gulls in September 1950', *British Birds*, 44: 254-6, 420).

THE LITTLE GULL—*Larus minutus* Pallas

One at Arnside, Kent estuary, on eleven different days between 30 July and 25 October 1948 (J. A. G. Barnes). Also *British Birds*, 42: 222.

THE BLACK-HEADED GULL—*Larus ridibundus* L.

In 1938 an estimate in the region of 50,000 pairs was given for the Black-headed Gull colony at Ravenglass (*British Birds*, 33: 202-2 1, 230-44, *The Handbook of British Birds*, 5: 68). It has since been found that this estimate was much exaggerated and the true numbers to have been more like 10,000 pairs, making the colony comparable with some ten others in the British Isles and not by far the greatest of all. A decrease has occurred between 1938 and 1948 and is possibly still continuing (S. Marchant, *British Birds*, 45: 22-27).

One ringed as young, Heads Nook, Cumberland, 8 July 1950, by R. H. Brown, recovered Setuhal, Portugal, 3 April 1951 (*British Birds*, 44: 304).

THE HERRING-GULL—*Larus argentatus* Pont.

Two pairs nesting along with Lesser Black-backs at Raven-glass, June 1948 (Robert Walker). About thirty pairs at Ravenglass and a hundred and fifty pairs on Walney Island in May 1949 (Alan F. Airey).

The albinistic bird in the St. Bees colony continued from 1944 to 1951 (J. H. Vine Hall).

## THE SCANDINAVIAN LESSER BLACK-BACKED GULL—

*Larus fuscus fuscus* L.

Irthing valley, Gilsland, North Cumberland. One flying west 19 December 1944; one and four 5 January 1945, six 14 January and about six 25 November 1945 all flying west (G. A. K. Hervey).

Eden valley, Great Salkeld. One flying north 19 January 1947, one 4 November 1948 and one going north 6 February 1949 (G.A.K.H.).

Single birds at Whins Tarn, Edenhall, 20 December 1947 and 9 November 1950, and in Allonby Bay, 25 October 1950. Two at Penrith Sewage Farm, 5 April 1951 (G.A.K.H.).

Four adults at Blackwell, Carlisle, 1 January 1952 and the same number about the city in at least the two previous winters (E. Blezard, R. Martindale).

## THE BRITISH LESSER BLACK-BACKED GULL—

*Larus fuscus graellsii* Brehm

About fifty pairs nesting at Ravenglass in June 1950 (R. C. L. Howitt).

Two ringed as young on Walney Island, by A. V. Millard, and recovered abroad are one of 25 June 1949, recovered at Lepe (Huelva), Spain, 23 April 1950, and one of 24 June 1950, recovered off Cape St. Vincent, Portugal, 2 November 1950 (*British Birds*, 44: 305).

A Report to the British Trust for Ornithology on the winter status of the Lesser Black-backed Gull in the British Isles has various references to Lakeland as well as a section on distribution in the area (J. A. G. Barnes, *British Birds*, 45: 3-17).

THE GREATER BLACK-BACKED GULL—*Larus marinus* L.

An increase in the numbers wintering in the Kent estuary since 1943. Sixty-six on 5 October 1945 and fifty-six on 14 November 1946. First autumn arrivals include a large proportion of immatures which mostly leave before winter, for example three with twenty-six adults on 8 January 1947 (J. A. G. Barnes. *British Birds*, 40: 261).

Inland occurrences have become more frequent. At Carlisle there were one in January 1947, five in January 1949 and one in February 1950, all adults and with Herring-Gulls (E. Rlezard). Also in Cumberland, two at Whins Tarn, 19 November 1948 (Athol J. Wallis) and three adults and an immature at Broadfield, 21 January 1950 (E.B.). In the Westmorland Pennines there were one near Tufton Lodge, 14 January 1951 and three on Kettlepot Moor, 3 February 1951 (Walter Thompson, Peter Young). An immature was trapped at a dead sheep in Longsleddale, Westmorland in the spring of 1952, per M. Garnett.

A pair nested far inland, in 1909, at Wiley Syke in the North Cumberland moors, their three eggs being in Carlisle Museum.

THE GLAUCOUS GULL—*Larus hyperboreus* Gunn.

An immature at Arnside, Westmorland. 25 November 1947 (J. A. G. Barnes).

THE ICELAND GULL—*Larus glaucoides* Meyer

Among the Herring-Gulls at a Carlisle rubbish tip, on 17 February 1949, there was a gull whose plumage appeared to be entirely white, or near-white. It was, if anything, rather smaller than a Herring-Gull and, in flight, it clearly showed whiteness right to the wing tips. From the limited observation the bird gave the impression of an Iceland Gull. a very white individual. in second winter (Ernest Blezard).

THE KITTIWAKE—*Rissa tridactyla* (L.)

A count of a hundred and thirty-one in Workington Harbour, Cumberland, 28 August 1948, included only four juveniles. Possibly another seventy Kittiwakes were present. Still a good number on 23 September, when sixteen of a batch of twenty were juveniles (Robert Walker).

THE GREAT SKUA—*Stercorarius skua* (Brfinn.)

Immature female, killed at Cardurnock, Solway, 15 September 1946, given to Carlisle Museum (T. Jefferson). One in midSolway, west of Maryport, 19 December 1946 (Ralph Stokoe). Reported by fishermen as regular in mid-Solway in winter.

THE ARCTIC SKUA—*Stercorarius parasiticus* (L.)

Four inland, with Black-headed and Common Gulls, on flood water at Greystoke, Cumberland. 29 August 1946 (H. Mellor).

A dark adult at Skinburness, Solway, 17 September 1950 (Ralph Stokoe) and two others at Arnside, Kent estuary, same date (J. A. O.Barnes).

THE LONG-TAILED SKUA—*Stercorarius longicaudus* Vieill.

Adult male picked up dead beside the coast road, two miles north of Maryport, Cumberland, 30 April 1947. This bird which had almost completed spring moult, is the first one of the species to be obtained at this season in Lakeland. It had seemingly struck telegraph wires after being driven to the land by wild west winds of the period. Given to Carlisle Museum. (Ralph Stokoe, *British Birds*, 40: 287).

THE GUILLEMOT—*Uria aalge* (Pont.)

Birds with black upperparts and typical of the Northern Guillemot picked up dead on the West Cumberland coast. Two near Maryport. 24 September 1949 (G. A. K. Hervey) and two near Allonby, 8 October 1950 (Ralph Stokoe).

THE SPOTTED CRAKE—*Porzana porzana* (L.)

One, with wing injury, at Wiuns Tarn, Edenhall, Cumberland, 28 June 1947 (G. W. Tithermton).

THE WATER-RAIL—*Rallus aquaticus* L.

Nest of seven eggs at Warcop, Westmorland, 16 May 1947 (H. V. Robson).

THE COOT—*Fulica atra* L.

On 31 January 1952, two hundred Coots were on Windermere **near** Ramp Holme and over a hundred between Cockshott Point and Belle Isle. All during February there were more than six hundred along the north-east side of the lake up to Waterhead, most of them again being near Ramp Holme and Cockshott. They had dwindled to about a hundred by 10 March (Alan F. Airey). At their most, they were in large numbers even for the flocks which are a winter feature of the lakes, and ice on others of these waters for some of the time could partly account for them.

THE BLACK GROUSE—*Lyrurus tetrix* (L.)

Widespread and perhaps more numerous than the Red Grouse around Nibthwaite in High Furness, 1947-48 (L. A. Coweill).

THE QUAIL—*Coturnix coturnix* (L.)

CUMBERLAND. One in a field of spring wheat, Scaleby, spring 1945 (R. Underwood). On 22 June 1947, one was picked up dead at Bowness-on-Soiway (T. L. Johnston, R. Martindale) and one, which had alighted in a shop doorway in Carlisle, was liberated to the south of the city (John Kerman). One calling at Eden Lacy, 1947 (W. J. M. Gubbins), and one at Cumdivock, 4 August 1947 (E. Blezard). Male killed by motor car at Burgh-by-Sands, 23 May 1949, given to Carlisle Museum (T. Strong). One calling from a cornfield, Grayrigg, Parton, 5 July 1949 (R. H. Brown). One calling from a wheatfield, Cumdivock, 9 July 1950 and an adult and four young flushed in the same field in late August. Again a brood in a wheatfield at Cumdivock in August 1952 (R.H.B.).

WESTMORLAND. Bevy of eight to ten in a cornfield, Whinfell, 19 August 1947 (H. W. D. Pollock).

LANCASHIRE NORTH OF THE SANDS. Nest of eggs in a hayfield near Birkby Hall in Cartmel, 26 July 1947 (F. B. Greenwood). Immature female, picked up dead in Barrow-in-Fumess. 18 September 1947, given to Carlisle Museum by E. B. Hughes.

November 1952.

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 1953. Allen, S. E., Guards Villa, Abbey Town.  
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 1946. Atkinson, Cyril Losh, 32 Croft Road, Stanwix, Carlisle.  
 1946. Atkinson, Wilfrid, F.R.A.S., 2 Duke Street, Penritli.  
 1946. Bailey, R. A., 7 Scawfell Road, Carlisle.  
 1933. Bannister, Alexander Kilgour, M.D., M.B., Ch.B., D.A., Kintyre, Bampton Road, Carlisle.  
 1946. Barclay, J. A., Croft, Watermillock, Penrith.  
 1953. Barton, Austin, 3 Lawn Villas, Workington.  
 1953. Bastable, J. D., Wheelbarrow Hall, Carlisle.  
 1944. Baxter, Robert, Richmond House, Wigton Road, Carlisle.  
 1950. Bell, Donald Burn, 15 Windermere Road, Carlisle.  
 1952. Birney, Joseph, 26 Dalton Avenue, Carlisle.  
 1937. Blair, Ribton Gore, M.C., B.A., M.B., B.Ch., B.A.O., St. Mary's, New Buckenham, Norfolk.  
 1923. Blezard, Mrs. Ernest, 100 Durdar Road, Blackwell, Carlisle.  
 1946. Blezard, Peter Stewart, F.R.H.S., 100 Durdar Road, Blackwell, Carlisle.  
 1932. Borshell, William A., 117 Scothy Road, Carlisle.  
 1951. Bowman, Thomas Scott, Cramham, Park Road, Scothy, Carlisle.  
 1951. Briggs, John, 1 Mardale Road, Carlisle.  
 1950. Brown, Robert, Gaitsgill, Carlisle.  
 1937. Brown, Robert Henderson, Cumdivock House, Dalston, Carlisle.  
 1944. Bryden, Roger, Wetheral, Carlisle.  
 1947. Burgess, Kenneth R., Wreak's End House, Broughton-inFurness.  
 1941. Carr, Robert Albert, A.F.C., 452 Holderness Road, Hull, Yorkshire.

1944. Cockbain, Allan, The Oaks, Weld Bank, Chorley, Lancashire.  
 1943. Cockbain, Michael, The Oaks, Weld Bank, Chorley, Lancashire.  
 1944. Coulthard, John T., 10 Crown Road, Belle Vue, Carlisle.  
 1949. Cowcill, Leonard A., High Nibthwaite, Ulverston, Lancashire.  
 1952. Cowen, William, M.P.S., F.S.M.C., 36 Station Street, Keswick  
 1950. Crosthwaite, H. M., Crichton Royal Institution, Dumfries.  
 1944. Dalby, Mrs. F. D., Waverley, Coniston, Lancashire.  
 1952. Davidson, Thomas P., 52 Eden Street, Edontown, Carlisle.  
 1929. Davidson, William F., F.G.S., 9 Castlegate, Penrith.  
 1939. Dawson, Reginald, S Richmond Crescent, St. Bees.  
 1919. Day, Frank Henry, Jnr., Ph.D., M.Sc., *F.C.S.*, Blackwell Lodge West,  
 Blackwell, Carlisle.  
 1933. Day, Peter S., 15 Old Station Road, TJPwey, Weymouth, Dorset.  
 1948. Denwood, Marley, Nenthead, Aiston.  
 1948. Douglas, James Sholto, do Carrs of Carlisle, Bulawayo, Southern Rhodesia.  
 1950. Dunstan, Vincent J., M.A., The Grammar School, Carlisle.  
 1940. Ellison, Norman F., F.L.S., F.Z.S., M.B.O.U., 36 Mount Road, West Kirby,  
 Cheshire.  
 1948. Ellison, Walter, 41 Moorhouse Road, Carlisle.  
 1952. Elmsley, J. K. S., M.R.C.V.S., Cadriant, Newby West, Carlisle.  
 1950. Engel, Harry Paul, St. Barnabas Vicarage, Carlisle.  
 1953. Farrell, Fred J., 429 Carleton Road, Carlisle.  
 1950. Feasby, Miss Freda F., Moricambe, Anthorn, Carlisle.  
 1952. Flint, George, St. Helen's School, Cockermouth.  
 1944. Ford, Edmund B., M.A., D.Sc., F.R.S., Department of Zoology, University  
 Museum, Oxford.  
 1952. French, William, 75 Broad Street, Carlisle.  
 1922. Garnett, Miss Marjory, Dalegarth, Windermere, Westmorland.  
 1922. Glaister, Ernest, 9 Clift Street, Newtown, Carlisle.  
 1946. Glaister, Stanley, 9 Clift Street, Newtown, Carlisle.  
 1946. Goodfellow, Joseph J., 394 Warwick Road, Carlisle.  
 1944. Graham, Denis, B.Sc., Sunnyside, Station Road, Daiston, Carlisle.  
 1923. Graham, John M., Kirkandrews-on-Eden, Carlisle.  
 1922. Graham, Ritson, J.P., M.B.O.U., 24 Buchanan Road, Currock, Carlisle.  
 1934. Gubbins, Major W. J. M., T.D., Eden Lacy, Lazonby.  
 1934. Gubbins, Mrs. W. J. M., Eden Lacy, Lazonby.  
 1952. Hanson, Walter, 35 Norfolk Road, Carlisle.  
 1950. Harding, Charles James, B.Sc. (Hons.), 291 Newtown Road, Carlisle.

1934. Hartley, J. N. J., O.B.E., F.R.C.S.Ed, F.R.C.S.Eng., MB., Ch.B., Royal College of Surgeons, Edinburgh.
1944. Hervey, The Rev. Canon G. A. K., M.A., Great Salkeld Rectory, Penrith.
1945. Hervey, George R., Great Salkeld Rectory, Penrith.
1948. Hewson, Edward M., 14 Boston Avenue, Carlisle.
1948. Hill, Joseph, 89 Currock Park Avenue, Carlisle.
1927. Hogg, Robert, B.Sc., Farradale, Dunmail Drive, Carlisle.
1948. Howitt, R. C. L., Farndon, Newark-on-Trent, Nottingham.
1948. Hughes, Joseph, 12 Criffel Road, Belle Vue, Carlisle.
1949. Humber, Robert D., Cracalt Cottage, Natland, Kendal, Westmorland.
1933. Jackson, Thomas, 31 Shady Grove Road, Raffles, Carlisle.
1923. Johnson, Miss Beatrice, 33 Chiswick Street, Carlisle.
1936. Johnson, Major General George F., C.B.E., D.S.O., Castlesteads, Walton.
1933. Laidler, W. Raymond, One in Five, Croft Road, Stanwix, Carlisle.
1947. Lamb, Miss Helen, Hill House, Great Corby, Carlisle.
1949. Leach, Isaac, 46 Newtown Road, Carlisle.
1946. Light, Miss K. E., 8 Brigham Hill, Brigham, Cockermouth.
1935. Little, William H., 111 Scotland Road, Stanwix, Carlisle.
1953. Lovegrove, Roger R., 434 Carleton Road, Carlisle.
1949. McGarr, Albert, 13 Dunmail Drive, Carlisle.
1937. McHardy, John W., 9 London Road, Carlisle.
1930. McKerrow, Mungo, M.C., M.B., Ch.B., 30 Curwen Street. Workington.
1947. Martin, Miss Heather, 6 Howard Place, Carlisle.
1938. Martindale, Richard. 36 Oaldew Street, Denton Holme. Carlisle.
1946. Mellor, Henry, Meldene, Greystoke, Penrith.
1947. Millard, Arthur V., Lind End, Beck Road, Belle Vue. Carlisle.
1948. Moorman, Mrs. J. R. H., The Theological College, Chichester.
1950. Napier, George, 89 Scotby Road, Carlisle.
1951. Nelson, Frank R., Wallgarth, Burgh-by-Sands, Carlisle.
1952. North, John M. L., 22 Portland Square, Carlisle.
1952. North, Mrs. John M. L., 22 Portland Square, Carlisle.
1949. Parker, John J. W., F.R.G.S., Bank House Cottage, Kirk.. bampton, Carlisle.
1931. Parker, John Ronald,
1946. Philipson, Matthew, 14 Westlands. Haltwhistle, Northumberland.
1952. Pottier, Cyril J., 17 Dalston Road, Carlisle.
1952. Pottier, Mrs. Cyril J., 17 Dalston Road, Carlisle.
1946. Proud, Vincent M., M.P.S., 44 Lansdowne Crescent, Stanwix, Carlisle.
1944. Ratcliffe, Derek Alwyn, B.Sc. (Hons.). 72 Newtown Road, Carlisle.

1946. Redfern, Nigel Ainsworth, 22 Chaucer Road. Chelmsford.  
 1948. Richardson, John, F.R.H.S., The Swifts, Castle Carrock.  
 1944. Roddick, John, Commercial Bank Buildings. Annan, Dumfriesshire.  
 1947. Robinson, William, Eden Croft, Crosby-on-Eden, Carlisle.  
 1947. Robson, R. William, New Hall, Appleby, Westmorland.  
 1948. Ruddick, Henry, Blooming Heather, Scaleby, Carlisle.  
 1949. Rule, Robert, 17 Longlands Road, Stanwix, Carlisle.  
 1948. Scott, John, Lowthian Gill Farm, Cotehill.  
 1933. Scott, John Linthn, Turnbury, Wetheral, Carlisle.  
 1949. Scott, William G., 57 Ashley Street, Carlisle.  
 1943. Scriven, Frank E., 7 Longlands Road, Stanwix, Carlisle.  
 1948. Shepherd, Thomas, 104 Durdar Road, Blackwell, Carlisle.  
 1936. Skelly, Thomas W. K., 14 Carlisle Road, Dalston, Carlisle.  
 1948. Smith, Alan, 70 Thomlinson Avenue, Carlisle.  
 1949. Smith, Kenneth, F.R.E.S., F.L.A., Tullie House, Carlisle.  
 1949. Smith, Roy G., The Hawthorns, Brampton Road, Carlisle.  
 1933. Steel, Edward, 24 Blunt Street, Denton Hoime, Carlisle.  
 1951. Stephenson, Teasdale, 115 Dalston Road, Carlisle.  
 1939. Steward, Edward Simmons, F.R.C.S., L.R.C.P., M.B.O.U., Elleray Bank,  
     Windermere, Westmorland.  
 1923. Stewart. Mrs. T. R., 32 Howe Street, Carlisle.  
 1939. Stokoe, Ralph, M.B.O.U., 4 James Street, Netherton, Maryport.  
 1944. Sutherland, Allen K., Allen Grove, Matterdale.  
 1949. Sutherland, Miss J., 120 Warwick Road, Carlisle.  
 1952. Swindell, Clarence, 24 Garden Street, Carlisle.  
 1951. Thiriwall, John R., Windcrest, Scotby, Carlisle.  
 1945. Thompson, Walter, Barium House, Nateby Road, Kirkby Stephen,  
     Westmorland.  
 1945. Thomson, Norman, 19 Thirlmere Street, Ourrock, Carlisle.  
 1952. Walker, Robert, 28 Cumberland Street, Workirigton.  
 1943. Walton, George, 19 Sebergham Terrace, Carlisle.  
 1947. Walton, Mrs. George, 19 Sebergham Terrace, Carlisle.  
 1938. Westoll, James, Jnr., Dykeside, Longtown.  
 1950. Wright, Ronald H., 54 Waldegrave Road, Carlisle.  
 1945. Young, Samuel R., 4 Ferguson Road, Carlisle.

#### JUNIOR MEMBERS.

1953. Alderson, George, 55 Durdar Road, Blackwell, Carlisle.  
 1949. Blezard, Andrew Thirlwall, 100 Durdar Road, Blackwell, Carlisle.  
 1953. Brown, Claude Read, Bank House, Longtown.  
 1948. Currie, John, 31 Gillford Crescent, Carlisle.  
 1944. Dalby, Dunkery Hugh, Waverley, Coniston, Lancashire.  
 1944. Dalby, Miss Gretel Winsford. Waverley, Coniston, Lancashire.  
 1952. Franklin, Michael, 21 Croft Road. Stanwix, Carlisle.

1953. Frith, Michael Roger, The Cottage, Graham Street, Longtown.  
1949. Irwin, Wilfred, 178 Warwick Road, Carlisle.  
1953. Jeffrey, William Francis, The Hollins, Newby West. Carlisle.  
1947. Lavery, Miss Margaret, 29a Scotland Road, Stanwix, Carlisle.  
1948. Longrigg, Frederick. 10 Haig Road, Carlisle.  
1953. Scott, Allen, 2 Empire Road, Carlisle.  
1951. Smith, Colin J., Lingmoor, Morton, Carlisle.  
1953. Smith, Miss Gillian. Tullie House, Carlisle.  
1952. Stephenson, Miss Claire, 115 Dalston Road. Carlisle.  
1951. Stephenson, Miss Jennifer, 115 Dalston Road. Carlisle.  
1948. Warren, T., 23 Prince's Court, Haig Road. Carlisle.  
1952. White, Leslie. 4 Victoria Place. Carlisle.