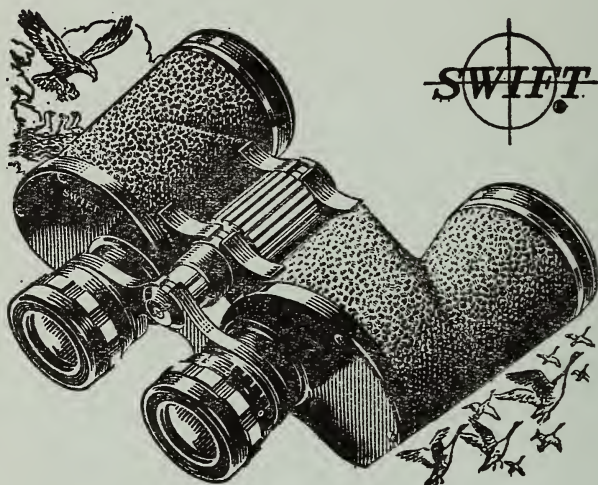




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THE NORFOLK BIRD & MAMMAL REPORT 1971

The Editors regret the very late appearance of this Report. New recording arrangements have been made which should ensure that the 1972 issue is published early this autumn. Readers who have not yet submitted bird/mammal observations covering 1972 are requested to forward them now to the editors.

The number of Great Crested Grebes at some Norfolk localities is declining dramatically and a full county census is planned for this spring. Observers willing to assist should please contact the Bird Report editor.

THE HISTORY OF THE

REIGN OF KING CHARLES THE FIRST

BY JOHN BURNET

IN TWO VOLUMES

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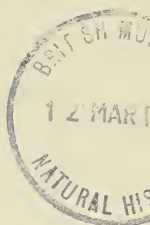
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Norfolk Bird Report 1971



Editorial

Weather . . . Review of The Year . . . Beached Bird Surveys . . . B.T.O. Common Bird Nest Census . . . Road Casualties . . . Acknowledgements . . . Recording.
THE COUNCIL of the Norfolk Naturalists Trust, in co-operation with the Norfolk & Norwich Naturalists' Society, is pleased to present the annual report on the birds of Norfolk.

The weather: January was mainly dull and sunless and the month was the wettest for a decade. February, in contrast, was extremely dry. March in common with the two previous years, was appreciably colder than normal. The coldest night of the winter was recorded on the 5th. April was the driest in local records since 1957 and May the sunniest since 1959. June was the coldest since 1925, the miserable weather resulting largely from frequent depressions passing over the country. July, in contrast, was warmer and drier but wet weather returned in August.

Both September and October enjoyed above average sunshine. November had well above average rainfall, but dry conditions returned during December.

Review of the Year: 1971 was another exciting year and few observers failed to see at least one addition to their life list. A total of 128 species nested in the county among them 345 pairs of Herons, Mandarin Duck, almost 60 pairs of Tufted, Montagu's Harrier, Quail, 13 pairs of Little Ringed Plovers, Black-tailed Godwits, Reeve, Common Gull, 6 pairs of Short-eared Owls, Golden Oriole, 3

pairs of Black Redstarts, 15 pairs of Red-backed Shrikes and Siskin. The splendid colony of Sandwich Terns at Scolt Head reached a total of 4,400 pairs. Bearded Tits had a successful season colonising two new localities.

Wildfowl were the principal feature in the opening months. The unique Ouse Washes attracted an all-time record of 1,278 Bewick's Swans. The proportion of dusky juveniles was by far the highest for four years. Among these Bewick's were birds with the bright yellow rumps of Slimbridge-caught birds.

Inland heaths are usually quiet in winter, but on Jan. 3rd a Firecrest was detected at Mousehold Heath. This diminutive traveller was, in fact, a 1971 notability with 3 individuals in spring and 15 in autumn. It may well become a successful colonist in Norfolk; breeding has recently taken place in other counties in mixed woodlands containing an abundance of spruce.

Breckland was popular in the early months where news soon spread of a wintering flight of Hawfinches. Very secretive, they stayed for weeks in horn-beams at East Wretham; at least one pair remained to breed. Great Grey Shrikes were again almost abundant, appearing at 50 localities; between April 6th and 17th a total of 14 assembled on the coast prior to returning to Scandinavia. The latter date was notable for a Savi's Warbler at Wisbech S.F. This rarity was unknown as a British summer resident between 1856 (when the last survivor of the breeding population was shot at Surlingham) and 1960 when a small colony was found in Kent. Savi's has since extended its range to Suffolk where it has nested at both Walberswick and Minsmere. A single male appeared at Cley each spring between 1967 and 1969.

Although breeding in Northwest Europe, some species remain rare here. Among these vagrants were Tawny Pipits at Cley (May 31st) and at Yarmouth (Oct. 19th) and a Bonelli's Warbler at Holkham (Aug. 22nd). Colourful west European spring wanderers included Whiskered Tern at Martham Broad, Golden Orioles, Purple Heron at Cley, 16 Hoopoes, Woodchat Shrikes at Crostwight and Wells and Serin also at Wells (the third county record in the last decade).

From Northern Europe one of the most splendid visitors was a Black Kite in the Cley-Salthouse area for five days early in May. During the same period a Hobby was found dead at Yarmouth and a Corncrake struck overhead wires at Ringland. The spring wader pageant was on an impressive scale – among the highlights were 3 Kentish Plovers at Cley. Breydon flats also attracted a Kentish Plover, together with a party of 9 Avocets, Spotted Redshanks, 170 Bar-tailed Godwits and Little Stint.

For the sixth year in succession a Caspian Tern, from the Baltic, paid a brief visit. Wandering Ospreys were again a feature from late May onwards visiting 29 localities. An influx of over 300 Waxwings from Swedish Lapland began Oct. 21st. From the same lonely forests came a Greenish Warbler to Blakeney Point Aug. 21st.

Asiatic warblers again provided a double autumn feature, with Yellow-browed haunting birches at Holkham for six weeks until Oct. 30th. On the last mentioned date a Pallas's appeared in a Norwich garden. Remarkably both of these species normally winter in South-east Asia; their arrival here being an example of reversed migration in a westward direction. Also from Asia were 15 Richard's Pipits. It is intriguing to read that the breeding range of this pipit is south of the breeding area of the westernmost Yellow-browed Warblers and immediately west of that of Pallas's Warbler (*British Birds* 65:391). From the Siberian forests a Nutcracker made a brief stay at Cringleford.

East European autumn wanderers included 3 Red-breasted Flycatchers and 22 Barred Warblers at nine localities until Oct. 27th. From further east came Red-footed Falcon (Cley May 29th), White-winged Black Terns (including birds at four places Aug. 28th) and Rose-coloured Starlings at Snettisham and Wells. Also notable were Mediterranean Gulls, from the Aegean or Black Sea, at four localities.

Arctic visitors were an August feature including one of the largest recorded movements of adult Curlew-sandpipers; the majority still in splendid chestnut-red breeding plumage. The nearest known nesting ground is on Taimyr Peninsular some 3,000 miles away. This early arrival of adults combined with a scarcity of juveniles during September suggests a largely unsuccessful breeding season.

Other tundra travellers included Grey Phalarope in full dress at Cley on June 22nd. Another stayed to be photographed on a water tank at Coltishall aerodrome on Nov. 2nd. Also from the Arctic came Sabine's Gulls to delight observers at Hunstanton, Holme, Holkham and Cley during the autumn.

North American birds were well featured. In spring a wary drake Ring-necked Duck was the best showpiece at Hardley Flood. Remarkably, the first Blue-winged Teal recorded for Norfolk visited this Reserve in mid-December. A Wilson's Phalarope graced the Hickling wader grounds for a week in June after visiting Minsmere. In the Fens a Spotted Sandpiper appeared briefly on three occasions between June and Aug.; it was probably the same individual found there towards the end of 1970. August brought White-rumped Sandpipers to both Wisbech S.F. and King's Lynn, followed by 3 Pectoral Sandpipers at the former haunt. September's star bird was a Baird's Sandpiper which entertained the country's ornithologists for almost a month.

Most notable ocean visitors were the autumn sightings of Sooty Shearwaters. Their nearest breeding stations are on remote islands around New Zealand and south of South America.

Beached Bird Surveys: A regular survey was carried out along the tidelines between Wolferton Creek and Heacham. A total of 149 dead birds of 33 species was found; very few were oiled. The year's casualties were as follows: Black-throated Diver, 5 Red-throated Divers, Great Crested Grebe, Little Grebe, 3 Fulmars, Gannet, 2 Mute Swans, Pink-footed Goose, 10 Shelduck, Wigeon, 4 Common Scoter, Eider, 10 Oystercatchers, Lapwing, Grey Plover, Turnstone, Snipe, 4 Curlew, 2 Bar-tailed Godwits, 4 Redshank, 32 Knot, 4 Dunlin, Great Black-backed Gull, 7 Herring Gulls, 8 Common Gulls, 16 Black-headed Gulls, 4 Kittiwakes, 3 Little Auks, Guillemot, 11 Wood Pigeons, Song Thrush, 4 Starlings and 2 Snow Buntings (RB).

A survey on March 6th/7th between the Great Ouse Mouth and Cromer resulted in a total of 44 casualties. The list was as follows: Great Crested Grebe, 7 Red-throated Divers, Great Northern Diver, 6 Shelduck, Mallard, 3 Knot, 3 Redshank, 3 Curlew, 3 Fulmars, 2 Kittiwakes, 4 Common Gulls, 3 Black-headed Gulls, Herring Gull, 2 Great Black-backed Gulls, 3 Guillemots and Stock Dove (Nature Conservancy and N.O.A.)

B.T.O. Common Bird Nest Census: 1971 saw the completion of ten year's study on the Cranworth 246 acre farm plot. During this period many changes have taken place, but none so profound as those which overtook the area in the 1971/2 winter. Bulldozers and pipe-laying machines have made certain there can be no recovery.

The numbers of *pairs* was as follows: Mallard 9, Teal present, Kestrel 1, Red-legged Partridge 12, Partridge 8, Pheasant 17, Moorhen 15, Lapwing 2,

Snipe 1, Stock Dove 4, Turtle Dove 12, Cuckoo 2, Little Owl 1, Tawny Owl 1, Green Woodpecker present, Great Spotted Woodpecker present, Lesser Spotted Woodpecker present, Skylark 20, Swallow 2, House Martin 3, Carrion Crow 1, Jackdaw 3, Jay 1, Great Tit 12, Blue Tit 21, Coal Tit 2, Marsh Tit 2, Willow Tit 1, Long-tailed Tit 5, Nuthatch present, Treecreeper 4, Wren 21, Mistle Thrush 1, Song Thrush 17, Blackbird 47, Robin 19, Sedge Warbler 4, Blackcap 3, Garden Warbler present, Whitethroat 8, Lesser Whitethroat 1, Willow Warbler 2, Chiffchaff 2, Goldcrest 5, Spotted Flycatcher 4, Dunnock 30, Pied Wagtail 2, Starling 17, Hawfinch present, Greenfinch 3, Goldfinch 5, Linnet 6, Redpoll 3, Bullfinch 6, Chaffinch 30, Yellowhammer 18, Reed Bunting 3 and Tree Sparrow 17 (ALB).

Road casualties along a five-mile stretch of the A47 between Yarmouth and "Stracey Arms" totalled 115 birds as follows: 4 Lapwing, 3 Rooks, 2 Mute Swans, 3 Skylarks, Blackbird, Chaffinch and Redwing 2 each, 46 Moorhens, 31 Black-headed Gulls, 15 House Sparrows and single Barn Owl, Mallard, Fieldfare, Cuckoo and Herring Gull (RHH).

These figures may be compared with 228 casualties on a four-mile length of unclassified road south of Norwich (excluding Nov. and Dec.): 1 Mallard, 2 Red-legged Partridges, Partridge, 3 Pheasants, Moorhen, Black-headed Gull, 4 Wood Pigeons, Little Owl, 2 Tawny Owls, Skylark, 2 Swallows, House Martin, 6 Wrens, 34 Dunnocks, 2 Lesser Whitethroats, Willow Warbler, 3 Spotted Flycatchers, 12 Robins, 24 Blackbirds, 14 Song Thrushes, Mistle Thrush, 3 Marsh Tits, 11 Blue Tits, Great Tit, 4 Greenfinches, Goldfinch, 5 Linnets, 2 Bullfinches, 77 House Sparrows, Tree Sparrow, 5 Starlings and Rook (RM).

Acknowledgements: Thanks are due to R. P. Bagnall-Oakeley for the cover drawing, text illustrations and photographs; also to C. C. Doncaster, *Eastern Daily Press*, A. Faulkner Taylor, R. Jones, D. T. Kennett and David & Katie Urry for additional photographs; to Holme Bird Observatory/N.O.A. for access to their records; to the Norfolk Naturalists Trust Wardens; to R. H. Harrison (Breydon); to the National Trust (Blakeney Point); to the Nature Conservancy (Scolt Head and Holkham); to J. Buxton (Horsey); to the Cambridge Bird Club (particularly G. M. S. Easy); to Gt. Yarmouth Naturalists Society; to Heacham & West Norfolk Nat. Hist. Society; to D. A. Dorling for compiling the annual record cards; to J. T. Fenton, Mrs. M. Dorling, Mrs. S. F. Seago, Miss P. A. Warminger and Miss I. Wymer for valuable assistance and to all other contributors.

Recording: Records for the 1972 Report should be sent by the end of February to Michael J. Seago, 33 Acacia Road, Thorpe St. Andrew, Norwich NOR 71T. Contributors are requested to submit notes in the order followed in B.T.O. Guide 13 (*A Species List of British & Irish Birds*). In order to minimise the work involved, records will not normally be acknowledged. The names of all contributors will be included in the Report.

Original articles are also welcomed. They should be submitted, type-written if possible, to the Editor, who reserves the right to revise such papers for publication in accordance with current editorial policy. Proofs of all contributions will be sent to authors before publication.

New members may be assured that their observations are appreciated and are recorded on an annual card index. However, as the normal pattern of events has been well established after a lengthy series of Reports, there is more opportunity for summary and not so much need to document less unusual occurrences. Observer's initials are normally reserved for the really unusual contributions.

BARN OWLS AND THEIR PREY IN EAST NORFOLK

J. Buckley and J. G. Goldsmith

The Barn Owl is a resident breeding bird in Norfolk being, perhaps, more common here than in any other English county. It is recorded annually in 40 to 60 localities and the British Trust for Ornithology Atlas Survey workers have recorded it as breeding in 22 of the 32 East Norfolk squares. It is a bird of open habitats, eating mainly small mammals and ejecting the indigestible remains as pellets. These pellets are composed of the fur, feathers and bones of the animals taken by the owl. By identifying the bones in the pellets it has been possible to determine the nature of the owl's prey.

HABITAT AND HUNTING

The Tawny Owl hunts wooded habitats at night usually watching from a vantage-point, until its prey moves or makes a noise in the vegetation before swooping down to it. The Barn Owl, however, is an open country hunter of pasture, marshland, fields and hedgerows. It can be seen at dusk or early morning quartering a field and pausing before dropping on to unseen prey in the grass.

During the daytime owls seek sheltered undisturbed places in which to roost and produce their pellets. Our 25 Norfolk roost sites have included: hollow trees (usually elm) 10; drainage mills 7; barns 4; churchyards 2; other deserted buildings 2. Roosts may be occupied for long periods and may also be used as nesting sites; temporary roosts also occur.

COLLECTION

The first collection of pellets was made at Caistor St. Edmunds in 1964 and has been followed by a series of collections at some sites and single ones at others. Up to the end of 1971 over 5,000 pellets had been analysed from 25 sites, and it is the results from these pellets which are summarised in this paper.

The site at Caistor was a hollow elm but this was only suitable for roosting since the top was open to the elements. When the top was roofed with canvas and a new side entrance made, the tree was used, only a month later, as a successful breeding site. Since then several sites have been made more suitable.

At each site only whole or relatively fresh pellets are collected, although at some sites, such as Surlingham, there are deposits of pellets many centimetres deep. Once gathered together the pellets are placed in a bag with a data label and stored until they can be examined. We now consider it only worthwhile analysing collections of 30 or more pellets, as small pellet collections often give an inaccurate impression of the owl's prey. When visiting a roost great care is taken not to disturb the birds. The Barn Owl is on Schedule I of the 1954-67 Protection of Birds Act and a N.E.R.C. permit must be obtained before visiting nesting sites in the breeding season. The roosts are best approached at dusk when the birds would normally be leaving to hunt.

Sites and numbers of pellets collected:

Hickling	1,271	Dunston	82
Costessey	661	Edgefield	69
Caistor St. Edmunds.....	492	Strumpshaw.....	60
Brinton	489	Stoke Holy Cross	59
Limpenhoe	487	Stokesby.....	45
Surlingham.....	370	East Runton	43
Wickhampton	303	Trowse	40
Halvergate	250	Bawburgh.....	38
Thurne	136	Reedham	27
Langley.....	105	Wiveton	24
Horstead.....	100	Upper Stoke.....	16
Buckenham	90	Marlingford	14
Blickling	86	Total.....	5,357

ANALYSIS

The analysis of Barn Owl pellets is fairly straightforward. Experiments have shown that there is a good correlation between the prey fed to a Barn Owl and the number of skulls recovered in their pellets. Therefore, the skulls found in the pellets can be taken to give an accurate picture of the prey consumed by the birds. The pellets are best pulled apart whilst moist, and the skulls and lower jaws collected. Usually it is possible to identify every skull, but when one is damaged a lower jaw is used to confirm the species. The number of each species are recorded and any unfamiliar material is retained for further examination. At the beginning of the study a key similar to the one in the *Handbook of British Mammals* was used for identification of the skulls, but after a short period of practice the different species could be recognised on sight.

The percentage of each species present was calculated for each batch of pellets as this allows a direct comparison to be made between localities and different seasons. Later totals were calculated for each locality over the seven-year study period.

RESULTS

The results from each site are tabulated in Fig. 1 for ease of comparison. As can be seen from the numbered species list, all small mammals which occur commonly in Norfolk form a part of the owl's prey, while some birds and a few frogs are also taken.

Closer examination of the results shows that the percentages of each species are of a similar order of magnitude at each site, but there are differences between some of the sites. For example at Halvergate only Field Voles and Common Shrews form any appreciable part of the prey, while at Caistor five species form more than 5% of the prey: Common Shrew, Bank Vole, Field Vole, Wood Mouse, and Brown Rat. There is a good agreement between collections at the same site but at different seasons and in different years, so these differences are consistent.

Two hypotheses may be advanced to explain these findings. It might be that Barn Owls at different sites prefer different diets and therefore select their prey accordingly, or it may be that the owls have no prey preferences, but simply take their food according to its availability. Of course both factors could play some part! While it is difficult to obtain evidence for the first idea, there is clear evidence in favour of the second.

Locality:			Hickling	Costessey	Caistor	Brinton	Limpenhoe	Surlingham	Wickhampton	Halvergate	Thurne	Langley	Horstead
Prey Species													
1. Mole	..	..	—	0.2	0.8	0.6	—	0.1	—	—	0.2	—	—
2. Common Shrew	..	..	23.1	21.6	29.4	31.7	12.3	35.5	21.6	13.8	36.5	13.2	28
3. Pigmy Shrew	..	..	8.6	2.4	4.5	4.2	2.1	5.7	3.2	3.5	2.7	1.7	7
4. Water Shrew	..	..	0.7	1.8	1.0	2.1	0.8	3.3	0.6	0.1	1.0	0.4	2
5. Bats	..	..	—	—	—	—	<0.1	—	—	—	—	—	—
6. Rabbit	..	..	—	—	—	—	—	—	0.1	—	—	—	0
7. Bank Vole	..	..	1.9	5.5	5.8	7.5	0.4	3.0	—	0.3	0.2	0.7	2
8. Field Vole	..	..	53.4	45.8	38.1	19.9	77.1	36.8	72.0	80.5	55.3	68.5	48
9. Water Vole	..	..	0.6	<0.1	0.5	0.2	0.8	0.4	0.3	—	—	—	0
10. Wood Mouse	..	..	1.2	14.9	10.1	14.3	1.4	4.9	0.2	1.1	0.5	2.8	4
11. Harvest Mouse	..	..	6.6	3.0	1.3	2.9	3.0	3.9	0.1	0.1	0.7	3.9	0
12. House Mouse	..	..	<0.1	0.2	1.1	3.1	<0.1	0.7	—	—	—	0.4	0
13. Brown Rat	..	..	1.2	3.2	6.2	8.8	1.3	3.8	1.0	0.5	1.0	5.6	4
14. Weasel	..	..	—	—	—	<0.1	—	—	—	—	—	—	—
15. Bird	..	..	2.5	1.4	1.2	4.4	0.6	2.3	0.9	0.1	1.9	2.8	2
16. Frog	..	..	0.2	<0.1	—	0.3	—	—	—	—	—	—	—

FIG. 1: A TABLE TO SHOW THE PERCENTAGES OF EACH PREY SPECIES AT EACH LOCALITY.

Small mammals, like all creatures, are adapted to living under certain ecological conditions. In open grassland one finds mainly Field Voles and Common Shrews; in scrub and wooded habitats Bank Voles and Wood Mice predominate, while Brown Rats and House Mice are associated with human dwellings and arable farming. The species of mammals present in a locality closely follows the available habitats. Therefore the more varied the habitat, the more species of mammal present. Any locality in the county may be thought of as a patchwork of habitats each supporting a characteristic assembly of mammals and birds.

Halvergate is the most simple location from which pellets have been analysed. It is entirely low-lying grazing meadows, with practically no woodland, arable land or human habitation. Here the Field Vole forms 80.5% of the prey, Common Shrew 13.8% and the Pigmy Shrew 3.5%. This is the most extreme diet, being based on only three species, one of which forms over three-quarters of the prey. It can be considered the most basic diet of this region. Other sites which have essentially the same elements, but reflect increasing modification of the locality by hedges, woodland and arable land, are Limpenhoe, Wickhampton, Thurne, Langley, Stokesby, Trowse and Reedham.

Sites typical of more wooded localities are Costessey and Caistor where Bank Voles and Wood Mice form a larger portion of the prey and Field Voles correspondingly less. These sites also demonstrate that more prey species are taken where the habitat is more varied.

While there is clearly no dramatic seasonal variation in the Barn Owl's prey,

	Blickling	Dunston	Edgefield	Strumpshaw	Stoke Holy Cross	Stokesby	East Ruston	Trowse	Bawburgh	Reedham	Wiveton	Upper Stoke	Marlingford	TOTAL
—	1.1	—	—	—	0.5	—	—	—	—	—	—	—	—	0.2
.4	29.9	23.7	16.7	6.1	28.2	11.6	21.2	18.3	15.3	21.3	23.6	11.6	24.1	23.7
.0	2.5	3.3	2.8	2.0	0.5	1.5	10.6	—	3.5	2.1	1.1	—	3.5	4.7
.4	1.8	1.1	2.2	0.5	1.1	1.5	2.0	—	2.4	—	1.1	—	—	1.3
—	<0.1	—	—	—	—	—	—	—	—	—	—	—	—	<0.1
—	—	—	—	—	—	—	—	—	1.2	—	—	—	—	<0.1
.8	3.2	9.6	0.6	3.0	8.5	1.5	5.3	1.7	7.1	—	10.7	—	10.3	3.3
.4	40.3	48.2	16.1	58.9	43.5	73.6	43.7	61.8	54.0	76.6	52.6	60.5	34.5	50.7
.3	2.1	—	—	—	—	—	—	—	—	—	1.1	—	—	0.4
.5	5.4	6.7	31.0	7.1	8.5	2.2	11.2	2.6	15.3	—	4.3	7.0	17.1	6.2
.1	1.1	1.1	1.7	0.5	1.1	6.6	0.7	—	—	—	1.1	2.3	3.5	3.2
.0	1.1	—	6.7	—	1.1	—	2.0	4.3	—	—	—	4.6	—	0.7
—	2.9	3.7	20.0	0.5	5.9	—	2.0	7.0	—	—	2.2	7.0	3.5	3.2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	<0.1
.1	3.6	2.6	2.2	21.4	1.1	1.5	1.3	4.3	1.2	—	2.2	7.0	3.5	2.3
—	5.0	—	—	—	—	—	—	—	—	—	—	—	—	0.1

SPECIES TAKEN BY BARN OWLS AT 25 NORFOLK LOCALITIES

there is a suggestion of seasonality at some sites. Frogs are taken in the spring when travelling towards the breeding ponds in large numbers and Brown Rats tend to appear more frequently in the prey during the autumn after harvesting.

At some sites large prey species are taken in greater numbers during the breeding season suggesting selection by the Barn Owl, as is the case with the Tawny Owl. Moles were taken in larger numbers during the 1967 breeding season at Caistor (3.6% of individuals, 16.5% of diet by weight), while at Limpenhoe the pair took more Water Voles, during the same year, (4.0% of individuals, 16.0% of diet by weight). On the other hand at Hickling and Costessey there was no evidence of larger prey being taken in the breeding season samples.

It can be seen that the "average" Barn Owl's prey in Norfolk does not exist, unless an "average" locality can be defined. However, two diagrams have been produced, by way of a summary, from the Norfolk grand totals.

Fig. 2 uses the percentages given in Fig. 1. It shows the Field Vole (No. 8) to be the most abundant prey item, with the Common Shrew (No. 2) of secondary importance. All the other species form only a quarter of the total animals taken.

Fig. 3 has been produced in a different way. In this diagram the numbers of each species have been multiplied by a "conversion factor" before the percentages were calculated. The conversion factors are related to an average weight of each prey species. It shows how much food volume/weight each species contri-

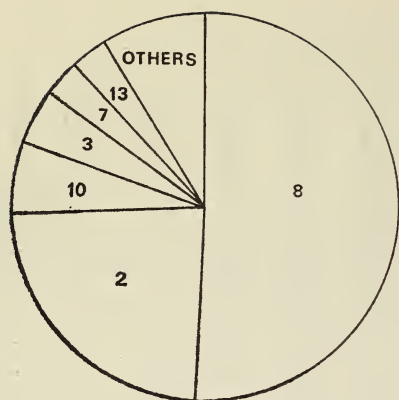


FIG. 2 PERCENT. OF INDIVIDUALS

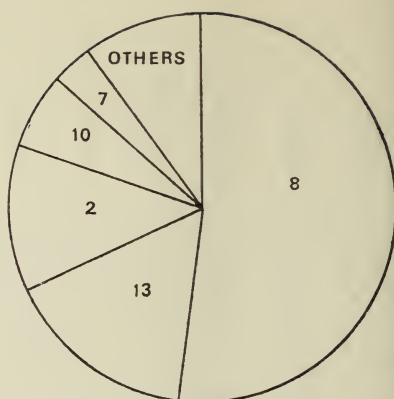


FIG. 3 PERCENT. BY WEIGHT

butes to the diet of the owls. As with Fig. 2 the Field Vole (No. 8) is the most important species, but the Brown Rat (No. 13) has replaced the Common Shrew (No. 2) as the second most important species, the others, especially the smaller ones, contributing little to the diet at all.

Amongst the more interesting items occurring in the pellets were two bats: a Pipistrelle at Limpenhoe in June 1967, and a Natterer's Bat from Blickling in May 1970. Some bird species have also been identified, but most remains have been rather fragmentary and very difficult to identify. The only species definitely recorded up to the end of 1971 have been Moorhen (juv.), Wren, Song Thrush, Blackbird, Starling, Greenfinch, Bullfinch and House Sparrow.

Some invertebrates are taken, either accidentally with other prey, or deliberately, but seem to form a rather insignificant part of the food. Amongst the macro-lepidoptera found was a Peacock butterfly found in a Hickling pellet (identified by the wing-venation by K. C. Durrant), while much fragmented wings of Ghost, Swift or Drinker type moths (*Noctuidae*) have been found. A single Damsel-fly (*Zygoptera*) is the only other day-flying insect found. Three types of beetle have been found: burying beetle (*Necrophorus humator*), dung beetle (*Geotrupes* sp.) and a Cockchafer, (*Melolontha vulgaris*).

CONCLUSIONS

The most important factor influencing the Barn Owl's prey is the habit of hunting open countryside. In such habitats Field Voles and Common Shrew abound and these two species are taken in the greatest numbers. When the locality is mainly grassland these species form almost all the prey, but when the habitat is modified with hedgerows, woodland and arable land, greater numbers of species are taken typical of these habitats. In uniform habitats the proportion each species forms of the prey may be a reflection of their relative abundance. However, in complex localities the vegetational structure will so affect the vulnerability of some prey species as to make any simple relationship between prey populations and composition of the owl's prey unlikely.



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In 1971 Barn Owls were reported from 95 localities in Norfolk including 31 breeding sites. Nests were found in derelict drainage mills and cottages, church towers, priory ruins, cattle sheds, barns, a disused chimney and in hollow trees and stumps.



SAND MARTINS

J. W. Bruhn

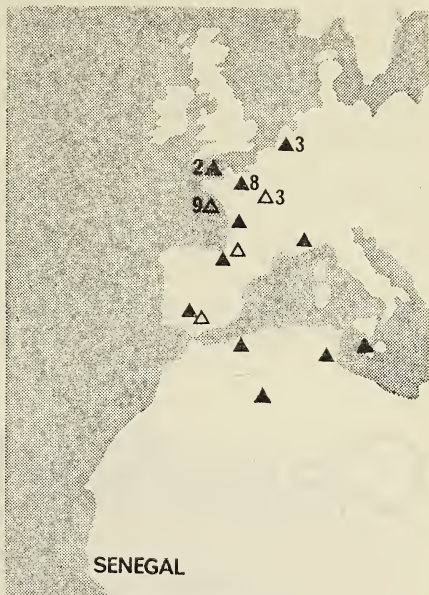
SINCE the earlier Sand Martin account appearing in the 1965 Report some change in its county status has occurred, and its position is now less secure. Whereas, in the mid-1960s, several colonies held 1,000 pairs or more, there are now few to be found exceeding 300 pairs. These large colonies, set in deep firm banks sometimes well away from water, are fast becoming derelict. Much of the new digging, on the other hand, is in low-lying meadows, and here the pits are water filled almost to the tops of the banks and are equally unsuitable.

The sand martin suffered a setback between the 1968 and 1969 breeding seasons. In the latter year a smaller return was noted than had been expected, and one of the results of ringing has been to show that it was the young birds of the 1968 season that failed to complete their first migration. This was apparent at our own colonies, and widely throughout the country. No satisfactory explanation has yet been offered, and numbers in Norfolk have since remained at a similar low level.

At a few sites work parties have cleared suitable banks in early spring, digging away the weather-worn surface sand. The birds have readily returned to these banks, and this seems to be a useful conservation exercise, however back-breaking at the time.

Some colonies, particularly those nearer to Norwich, have been badly affected by rubble dumping and bulldozing topsoil during the breeding season. These practices have resulted in the collapse of banks, burying healthy colonies. Fortunately many contractors and their foremen are sympathetic and ready to co-operate in protecting sand martins.

Recoveries abroad have revealed many interesting habits. Autumn migration takes the birds through central and western France, across Spain to Morocco, and as far as Senegal in West Africa. This part of Africa now appears to be the wintering



RECOVERIES

▲ – spring migration, April/May.
 △ – autumn migration, August/September.
 Figures indicate more than one recovery.
 In Senegal, 7 recoveries have been reported in February or April. There were also 2 recoveries in France in July, and singles in the Netherlands and Morocco in June.

area of our population. The return movement occurs on a much wider front reaching the Mediterranean between Morocco and Libya, and crossing the Continent from the Atlantic seaboard of France and the Channel Islands in the west, to the Rhone Valley in the east. Some of our breeding birds overshoot the mark into Belgium and the Netherlands, striking west or even southwest to reach Norfolk. Whereas the first birds are back in Britain before the end of March, others are still on the move in mid-May and possibly even early June. Some idea of this pattern of movement may be seen from the map.

The sand martin is well worth studying. It is a comparatively easy task estimating numbers and making an annual check on existing colonies. New colonies may easily be overlooked, but there has been an encouraging response to requests for information. More observations are welcomed.



Classified notes

These notes are based on *Birds of Norfolk* (1967) where fuller details regarding status, distribution, migration and ringing recoveries may be found. Important records for Wisbech Sewage Farm (part of which is on the Lincolnshire side of the county boundary) have been selected from the files of Cambridge Bird Club. Fuller details of Wash and Fen records may be found in the *Cambridge Bird Club Report* for 1971.

The order used is that of the B.T.O. guide *A Species List of British and Irish Birds* (1971) and English names follow current practice. Observations refer to 1971, unless otherwise stated. To save space, all but the most essential initials have been omitted. Records are of *single* birds unless otherwise stated.

Red-necked Grebe: Wash/North: Ones and occasionally 2 at Snettisham, Hunstanton, Holme, Thornham, Holkham, Wells, Cley, Salthouse and Weybourne up to April 25th and from Sept. 17th.

Slavonian Grebe: Wash/North: Singles (and once 5) at Hunstanton, Holme, Holkham, Wells and Cley up to April 14th and from Oct. 12th.

Black-necked Grebe: Fen Borders: Tottenhill G.P. Aug. 14th. Wash: Hunstanton March 13th. North (Brancaster and West Runton): Feb. 7th and Sept. 21st. Broads: Barton 2 Oct. 31st.

Little Grebe: Wash: Snettisham G.P. regular winter assembly peaked at 162 Jan. 19th.

Fulmar: North: Few counts but total of 95 between West Runton and Cromer March 6th; first one returned to breeding cliffs at Cromer Nov. 9th. Wash: Hunstanton, 35 present by early Feb. and 5 young left the ledges. East: Haddiscoe Island an exhausted bird Sept. 13th was released at Yarmouth.

Manx Shearwater: North: Autumn movements between early Sept. and Nov. 9th with maximum of 5 in a day. 8 birds of Balearic race *mauretanicus* off Blakeney Point/Cley between Aug. 15th and Sept. 13th.

Sooty Shearwater: North (Holme to Weybourne): Total of 17 between Aug. 30th and Nov. 6th. East: Winterton Oct. 14th.

Storm Petrel: During last week of Oct. one off Cley and 2 brought to Yarmouth after landing on ships at Sea. Wash: Snettisham Dec. 10th.

Correction: The Leach's Petrel reported at Terrington Oct. 3rd, 1970 was in fact a Storm Petrel.

Leach's Petrel: North: Following N.E. gales total of 11 off Cley and Weybourne between Oct. 13th and 26th.

Gannet: North: Heaviest movements off Cley Sept. 28th when 333 west in 2 hours and Oct. 4th when 374 east in 4 hours.

Cormorant: Largest assembly at Breydon where 131 Feb. 21st and still 100 April 5th; 120 there Nov. 29th. All continue roosting at Ranworth nightly and avoid Scroby.

Grey Heron: Details of heronries as follows:

Borders of Wash: Snettisham 22 nests.

Fens: Islington 62, Denver Sluice 18 and Ryston 8.

Breck: Didlington 11, Shadwell 10 and Narford 16.

Mid-Norfolk: Kimberley Park 16, Lyng 2 and Beetley Hall 5.

Broads area: McHardy's Wood 6, Heigham Sounds 14, Wickhampton 37, Buckenham 29, Strumpshaw 4, Mautby Decoy 10, Ranworth 14, Ranworth Marshes (Horning Hall) 15, Barton (Heron's Carr) 18, Wheatfen 3 and Upton 1.

North: Cley 4, Wiveton Hall 3 and Stiffkey 2.

South: Billingford (Thorpe Wood) 7 and Quidenham 8.

County total of 345 nests, but heronries at Holkham, Earsham, Fishley, Belaugh and Hoveton not counted. None nested Martham Ferry.

Purple Heron: North: Cley, immature, May 9th to 11th.

Night Heron: East: Acle, April 17th (DF, JW).

Bittern: North: Cley, bred successfully after an 8 year absence. Breck: Stanford-Tottington area 2, Jan.-Feb.

Spoonbill: North/East coasts/Broads: Singles at Cley, Blakeney, Breydon and Hickling between May 15th and July 15th. In addition, one at Scolt late in 1970 remained in the Brancaster area until Feb. 17th, a week later it was found dying at Titchwell.

Garganey: Arrival from March 17th and subsequently at 13 localities.

Blue-winged Teal: East: Hardley Flood, drake Dec. 12th onwards (CRG *et al*). The first county records of this North American vagrant. The possibility of an escape cannot be ruled out, but one shot in Suffolk Oct. 9th had been ringed in New Brunswick, Canada.

Gadwall: Largest counts: Breck: 30 at Narford Jan 6th, 300 at Stanford Sept. 18th and 160 at Mickle Mere Oct. 17th. North: 430 at Gunton Park Oct. 30th.

Mandarin Duck: Broads: Salhouse, a pair has bred annually since 1965. May well have escaped from captivity.

Scaup: As usual largest numbers on Wash with up to 285 at Snettisham in Jan.

Tufted Duck: Breeding records: 37 pairs bred in Brecks at 11 sites; elsewhere a minimum of 19 pairs bred at 9 sites.

Ring-necked Duck: East: Hardley Flood, drake, March 13th to April 25th (CRG *et al*).

Pochard: Breeding records: 14 pairs bred in the Brecks at 6 sites; elsewhere 8 pairs bred at 4 sites.

Goldeneye: East: Unusual numbers at Burgh Castle end of Breydon in opening months including 100 March 31st.

Long-tailed Duck: Wash: Hunstanton, monthly maxima as follows: Jan. 18, Feb. 35, March 25, April 46, Nov. 15 and Dec. 25. North coast: Occasional autumn/winter records of singles with 6 at Titchwell.

Velvet Scoter: Wash/North/East coasts: Recorded Feb.-March and Sept. onwards; mostly ones and twos with largest parties totalling 6 and 9.

Eider: Wash/North/East coasts: Recorded up to May and from Oct. onwards with largest parties at Hunstanton (35) and Weybourne (36).

Red-breasted Merganser: Wash: Largest parties 30 at Snettisham in Jan. and 35 off Hunstanton in Dec. Away from coast 4 at Buckenham on Yare Feb. 7th and pair Costessey Pits April 22nd.

Goosander: Winter records from 11 localities including 9 at Didlington and 5 at Narford.

Smew: Only 3 records: 1-2 at Holkham Lake Jan. 9th to 14th and 1 at Snettisham end of Feb.

Ruddy Shelduck: Fens/North: 5 at Wisbech S.F. Aug. 25th and at Cley Sept. 4th. Doubtless escapes from a collection.

Egyptian Goose: Largest full-winged colony is at Holkham Park. Elsewhere breeding reported at Hoveton Great and Salhouse Broads, Lyng G.P., Hillington, Narborough G.P., Lexham and Stradsett Lake.

White-fronted Goose: East: Breydon area, up to 150 till Feb. 14th and 52 from Dec. 12th. North: Cley, up to 30 till March 6th and 10 from Dec. 12th. Holkham, up to 90 during Feb. Fens: Welney, up to 20 in Jan. and 64 from Feb. 27th for four days.

Lesser White-fronted Goose: East: Yare Valley, a sub-adult at the traditional locality Jan. 16th to March 14th (PRA, GJJ *et al*).

Bean Goose: East: Up to 73 in the usual area till March 7th; 42 returned Nov. 26th (earliest arrival date on record) and 55 by year end. North: Cley and Holkham, singles from Jan. to early March.

Pink-footed Goose: North/East coasts: Winter records at Cley (14) and Breydon (21). Wash: Snettisham area, peak of 1093 Jan. 20th; first 15 autumn birds Oct. 31st, 476 by Dec. 6th, 678 by 11th and 1,000 by 31st.

Brent Goose: Recorded up to May 7th and from Sept. 15th. Maximum numbers at each regular locality as follows: Breydon 7, Salthouse 100, Blakeney 1,200, Wells 300, Brancaster 1,200 (including 550 young) and Hunstanton/Heacham 210. At Brancaster, over 100 were feeding on winter wheat by end of Feb.

Barnacle Goose: East: Breydon, Jan 10th with 5 Feb. 14th. North: Sheringham 3 west Nov. 6th. Cley-Salthouse, up to 13 Jan. 2nd to Feb. 8th and 1-2 Nov. 7th to Dec. 14th. Holme, 5 west April 16th (and at Wootton on 18th) and one Nov. 6th to Dec. 4th.

Whooper Swan: Herds up to 11 (and one each of 19 and 25) at 11 localities up to March 16th and from Oct. 26th. At Snettisham 2 wintering birds left March 16th, an adult and 3 juveniles returned Nov. 10th.

Bewick's Swan: Recorded at usual localities up to April 12th and from Sept. 25th. Largest numbers on Welney Washes where over 300 in mid-Feb. - part of the record herd of 1,278 (210 juveniles) that wintered on the Ouse Washes. Several showed dyed yellow tails of Slimbridge-caught birds; 232 had returned to Welney by the end of Dec.

In south-east Norfolk total of 165 on Feb. 14th (58 at Haddiscoe, 64 near Limpenhoe and 43 at Halvergate); 130 remained in the area March 14th (32 at

Haddiscoe including one dyed yellow, 83 at Halvergate, 11 near Reedham and 4 at Thurton).

Spring exodus began Feb. 23rd when 65 east over Mickle Mere and during the first 2 weeks of March others passed through Snettisham (see page 351), with 42 at Horsey, 36 at Holkham, 50 at North Elmham (in wheatfields), 70 over Reephham and 40 to sea over Mundesley. A week later 61 remained at Halvergate (March 21st).

Buzzard: Ones and twos at 15 localities in April, June to Sept. and November onwards.

Near Sandringham up to 4 from mid-Nov. onwards feeding on rabbits which also attracted a Rough-legged Buzzard and a Red Kite.

Rough-legged Buzzard: Singles at Cley, Dersingham, Heacham, Salthouse, Sandringham and Snettisham up to May 27th and from Oct. 15th.

Sparrowhawk: Records from 49 localities, but only known to have bred successfully at 5 sites. A brood of newly hatched young (now in Norwich Castle Museum) was found shot.

Red Kite: West: Near Sandringham, Nov. 14th to 21st (MS).

Black Kite: North: Cley and Salthouse Heath, May 6th to 10th (RHL, EMCE, MDO *et al*).

Honey Buzzard: North: Wells July 23rd (HE). Fens: Wisbech S.F., Aug. 7th.

Marsh Harrier: Broads: Hickling, Horsey and Martham ones and twos throughout the year but no breeding attempt.

Frequent coastal observations (including Wash and Ouse Washes) of singles in spring and autumn.

Hen Harrier: Recorded up to April 10th and from Oct. 15th at many coastal localities including Wash, Ouse Washes, Broads and Brecks. Mostly singles, but 3 together at both Tottington and Roydon Common and 5 at Horsey.

Montagu's Harrier: North: At the 1970 site a pair returned April 19th raising 5 young to the flying stage. A second pair present during second half of May. Final observations Aug. 14th when 3 juveniles and pair of adults soaring at same time.

Elsewhere, single males at Stanford, Salthouse Heath and Wells in May.

Osprey: Total of at least 29 at Blakeney, Blickling, Brinton, Burnley Hall, Cley, Hanworth, Hickling, Holkham, Holme, Hoveton, Hunstanton, Metton, Narford, Rollesby, Rockland, Snetterton, Somerton, Surlingham, Stanford, Wells and Weybourne. Extreme dates April 13th to Sept. 15th.

Hobby: Total of 14 between April 25th and Oct. 16th at 10 localities.

Peregrine: Total of 13 at 10 localities.

Red-footed Falcon: North: Cley May 29th (HBO).

Quail: Summer records from Blakeney (one successful nest), Binham, Bodham, Foxley, Hemblington and Ringstead.

Golden Pheasant: Records for Cockley Cley, Didlington, Hargham, Harling, Hockham, Hockwold, Lynford, Sandringham, Santon Warren, Thompson (Madhouse Plantation) and West Tofts.

Water Rail: Noteworthy breeding sites include Great Cressingham (1968), Guist and Stanford Water (1970) and Cley (1971). Singles telegraphed at Holt Jan. 2nd, Roughton Feb. 10th, Sharington March 1st and Saxlingham on 9th.

Spotted Crake: North: Cley Jan. 9th and April 12th-21st and Holme Sept. 3rd. Fens: Wisbech S.F. Aug. 31st-Sept. 1st and Ouse Washes Oct. 1st-3rd.

Corncrake: Central: Ringland telegraphed May 13th. North: Burnham Market bird of the year killed on road Dec. 17th (skin in possession of RPB-O).

Oystercatcher: Breeding records of *pairs*:

East: Breydon area 7 (including 3 on south side and one on arable at Runham).

Broads: Horsey 3, South Walsham, Hardley and Stokesby Ferry one each.

North: Blakeney Point 120, Stiffkey Binks 21, Wells 1, Scolt Head 150, Brancaster Staithe harbour channel to Titchwell Creek 16. Inland nesting at Binham (one nest), Langham (4), Hindringham, Thursford and Wereham.

Wash: Snettisham 1 and Heacham to King's Lynn 11.

Ringed Plover: Breeding records of *pairs* include:

Broads: Hickling 1.

East: Yarmouth north beach 1 (failed) and Winterton to Horsey 7-8.

North: Blakeney Point 162, Stiffkey Binks 10, Scolt Head 160-170. Inland at New Holkham, Blakeney, Quarles, one each.

Wash: Snettisham 12 and Heacham to King's Lynn 31.

Brecks: East Wretham Heath 1.

Fen Borders: 5 at two gravel pit sites.

Little Ringed Plover: *Breeding*: Central: Single pairs present at 5 sites breeding successfully at 2. Fen borders: Total of 8 pairs at 3 sites and 17 young hatched.

Passage migrants at usual localities between April 18th (Lang Mere and Cantley) and Oct. 9th with largest numbers at Wisbech S.F. where peak of 27 Aug. 5th.

Kentish Plover: East: Breydon May 21st (RHH) and June 19th (TEB). North: Cley, April 9th-11th and 2, May 10th-12th.

Golden Plover: Largest assemblies include 400 at Swannington March 20th, 500 at Foxley end of Dec. and 700-800 at Marham.

Dotterel: North: Salthouse Heath June 5th/6th, Kelling Heath July 10th and Cley, Oct. 30th.

Curlew: *Breeding*: Brecks: 12 pairs, the majority in the Stanford area. West: Roydon Common, 3 pairs.

Whimbrel: Large movements at Breydon where 120 May 13th and at Morston where 128 Aug. 10th.

Black-tailed Godwit: *Breeding*: Fens: Ouse Washes (complete length including Cambs.), present from Feb. 20th increasing to 116 by April 20th; the most successful breeding season yet with about 63 pairs rearing 40 young. At Welney only 2 pairs nested (both successfully), compared with 5 the previous year. North: Cley, 2 pairs, but no young reached flying stage.

Passage movements included 21 at Breydon April 11th (where 1 stayed Nov. 7th to Dec. 12th) and up to 8 at Wisbech S.F.

Bar-tailed Godwit: East: Breydon, impressive passage in early May with peak of 169 on 5th.

Wood Sandpiper: Small spring passage from May 7th and autumn birds present until Oct. 5th. Most records in first half of Aug. when up to 17 at Wisbech S.F., 6 at Hickling and 2 at Cantley B.F.

Common Sandpiper: Most impressive counts at Wisbech S.F. where present from July 10th to Sept. 25th with peak of 58 Aug. 3rd.

Spotted Sandpiper: Fens: Wisbech S.F. Nov. 9th to Dec. 19th 1970 and June 13th, July 29th and Aug. 30th 1971 (JAWM). These observations may well relate to the same individual.

The first county record was at Cley in June 1957.

Spotted Redshank: Spring and autumn passage records of up to 8 at usual localities with one at Trimmingham beach Aug. 26th. Largest assembly at Wisbech S.F. where 18 Sept. 10th.

Purple Sandpiper: Coastal records up to May 24th and from Sept. 13th at Brancaster (1), Cley (2), Heacham/Hunstanton (8), Morston (2), Salthouse (1), Sheringham (9), Snettisham (4) and West Runton (12). At Blakeney Point Sept. 13th 8 singles moved west in 7 hours.

Little Stint: In spring singles at Breydon May 16th and 19th. Autumn parties up to 12 at usual localities with maximum in Fens at Wisbech S.F. where peak of 15 Aug. 5th.

Temminck's Stint: Fens: Wisbech S.F., July 3rd and 29th, Aug. 7th–16th. Holme July 25th to Aug. 6th. Cley Aug. 6th.

Baird's Sandpiper: North: Cley, Sept. 16th to Oct. 10th (MR *et al*). Five previous county records.

White-rumped Sandpiper: Fens: Wisbech S.F. Aug. 7th to 19th (JND, SCJ, JAWM *et al*). Wash: King's Lynn Aug. 8th to 22nd (CAEK *et al*).

Six previous county records.

Pectoral Sandpiper: Wisbech S.F., 3 individuals appeared Aug. 15th to 22nd, Aug. 31st to Sept. 10th and Sept. 22nd–28th.

Curlew Sandpiper: Unusual winter records at Wisbech S.F. Feb. 6th and at Breydon Dec. 12th. Small spring passage May 2nd to June 8th when total of 38 at Breydon, Cley and Holme.

Early autumn passage of *adults* was on an impressive scale. At Breydon 94 red birds assembled Aug. 6th decreasing to 36 on 8th and 14 on 14th. At Wisbech S.F. the first (2) appeared July 24th increasing to 34 by 31st, 100 on Aug. 3rd, 120 on 5th, 150 on 7th–9th; numbers reduced to 100 on 12th, 35 on 15th and 15 on 19th. At Ouse Mouth 65 Aug. 8th.

By contrast late Aug./Sept. passage of juveniles on very small scale; few parties exceeded 4.

Further reading: "The unprecedented westward migration of Curlew Sandpipers in autumn 1969", (*British Birds* Vol. 65, pp. 365–380).

Ruff: *Breeding:* Fens, Ouse Washes (complete length including Cambs.) present all year with 110 in April and 63 in mid-Dec.; at least 21 Reeves attempted nesting. At Welney a pair probably bred.

Passage: Usual records from N/E coasts and Broad, including one in Brecks at Lang Mere May 2nd/3rd, 15 wintered at Cley. At Wisbech S.F. autumn monthly maxima as follows: July 120, Aug. 130, Sept. 100 and Oct. 70.

Avocet: East: Breydon 1–3 on several dates between April 1st and July 28th with 9 May 16th. North: Cley, May 2nd, Aug. 28th to Sept. 1st and Oct. 24th. Holme, Sept. 3rd and Oct. 24th. Wash: Snettisham, June 12th and 26th. Fens: Wisbech S.F. June 12th.

Grey Phalarope: Broad: Coltishall aerodrome Nov. 2nd (DTK). North: West Runton, 3 Nov. 22nd and another on 26th (DFM). Salthouse Nov. 28th (DAD). Cley June 22nd (ADW, IM) and Dec. 5th (DIMW).

Red-necked Phalarope: Broad: Hickling Aug. 21st. North: Cley Aug. 21st to 25th and Weybourne on 28th. Wash: Snettisham Nov. 10th (RB).

Wilson's Phalarope: Broad: Hickling, female June 17th to 25th (RPB-O, DAD, MJS *et al*). Added to the county list in 1967 when 2 visited Wisbech S.F.

Stone Curlew: In Brecks returned March 10th and breeding records from 17 localities. North: 3 pairs bred on a disused aerodrome and another pair elsewhere. East: Winterton June 30th – a former nesting site.

Great Skua: North: Autumn passage from July 30th to Nov. 21st with largest movements Sept. 13th (when 15 off Blakeney Point and 9 west at Weybourne), Nov. 6th (23 off Hunstanton, 28 off Gore Point and 10 off Weybourne) and 9th (10 off Hunstanton and 12 off Gore Point). Wash: A determined bird Nov. 8th chasing a Carrion Crow over sea from far side of Sunk Sand almost to Scolt Head before abandoning chase. East: Winterton Aug. 30th and Sept. 5th.

Pomarine Skua: North coast: 1-3 on 14 dates between Aug. 3rd and Nov. 25th. Wash: Snettisham area Nov. 13th-19th.

Arctic Skua: North/East: Autumn movements between July 30th and Nov. 22nd with largest parties off Hunstanton (23), Holkham (35) and Blakeney Point (36). Inland: Hemblington Dec. 20th with damaged wing (EAE).

Long-tailed Skua: North coast: Singles on 6 dates between July 25th and Sept. 11th.

Great Black-backed Gull: East: Scroby Sands, over 5,000 adults Aug. 25th.

Herring Gull: Wash: Snettisham to Heacham total of 16,000 Oct. 31st.

Common Gull: North: Blakeney Point, one pair nested.

Glaucous Gull: North coast (particularly between Cley and Weybourne): Ones and twos on many occasions up to April 19th and from Aug. 29th. East: Yarmouth refuse tip 3-4 between Jan. 8th and Feb. 6th.

Iceland Gull: North: Cley Oct. 21st and East Runton Dec. 29th.

Mediterranean Gull: North: Holkham, July 17th, Sheringham Aug. 9th, Cley on 24th and Weybourne Sept. 12th.

Little Gull: N/E coasts: Recorded all months except Feb. and Dec. and particularly between Aug. and Oct. Mostly ones and twos, but also up to 9 together off Gore Point Nov. 6th during 4 hour watch 23 west and 6 east. Also observed in Wash, Fens (Wisbech S.F.) and Broads (Hickling).

Black-headed Gull: Numbers of *pairs* at breeding sites include: North: Scolt 500, Stiffkey Binks 22 and Morston 1,500. Fens: Wissington B.F. 90. East: Cantley only 6.

Sabine's Gull: North: Hunstanton, Sept. 25th (HRR), Holme Sept. 13th (HRR), Holkham, Aug. 15th (DFM) and Cley Sept. 28th and Oct. 14th.

Kittiwake: Breeding attempts made at Scolt (1 nest) and at a cliff site in N.E. Norfolk (3 nests) but no eggs.

Interesting movement of 3-400 moving north off Winterton after N. gales June 6th. Non-breeding assembly at Blakeney Point peaked at 400 June 23rd. Following N.E. gales 4,500 estimated flying east at Cley Oct. 14th.

Black Tern: Passage birds at usual haunts between April 21st and Sept. 13th. Largest spring parties during first week of May when 35 together at Cley (6th). In autumn the Wash attracted largest number: 70 at Terrington Aug. 8th and 40 at Lynn Point on 10th.

White-winged Black Tern: Wash: Terrington Aug. 10th. North: Holme, Holkham and Cley all Aug. 28th. East: Waxham, Aug. 28th.

Whiskered Tern: Broads: Martham May 28th (FP).

Gull-billed Tern: North: Blakeney Point, immature, Aug. 29th (PJR).

Caspian Tern: North: Scolt, May 28th to 30th (RC), the second record for the island.

Common Tern: Numbers of *pairs* at breeding sites: Wash: Snettisham 31. North: Scolt 540, Stiffkey Binks 148 and Blakeney Point 1,200-1,600. East: Scroby Sands 50 (first nests since 1965). Broads: Ranworth 54, Hickling 5, Ormesby 8, Barton, Catfield Fen and Hardley Flood one each. Inland: Wensum Valley G.P. 1.

Arctic Tern: North: Breeding *pairs*: Scolt 1, Stiffkey Binks 1 and Blakeney Point 2-3.

Roseate Tern: North: None bred, but singles between Cley and Titchwell May 2nd to Sept. 28th.

Little Tern: Breeding records of *pairs* include: North: Titchwell 20, Scolt Head 40, Brancaster 18, Burnham Overy to Wells (incomplete count) 3, Blakeney Point 210, Stiffkey Binks 20 and Cley/Salthouse 8. East: Winterton/Horsey 71 (75 flying young) and Winterton/Hemsby 1. Broads: Hickling 2.

Sandwich Tern: North: Breeding colony of 4,400 pairs at Scolt where 4,000 flying young. Unsuccessful at Blakeney Point. East: Scroby 2 (first nests since 1965).

Interesting record of 3 in Fens at Wisbech S.F. Sept. 5th; latest, at Cley, Nov. 7th.

Little Auk: A minor "wreck" occurred between Nov. 9th and 11th when casualties at Binham, Brinton, Great Snoring, Loddon, Ludham, Mundford and South Acre. In addition 7 winter records of singles.

Black Guillemot: North: Cley Sept. 29th and Nov. 6th-7th; Wells harbour 1-2 Nov. 21st to 30th.

Turtle Dove: Spring arrival from April 18th (Blakeney) and 19th (Potter Heigham and Bacton) with maximum of 168 at Snettisham May 6th. Last recorded Oct. 8th (Winterton) and 16th (Yarmouth).

Collared Dove: Monthly maxima at Broom Hill, East Runton: Jan. 57, Feb. 65, March 78, April 76, May 64, June 57, July 75, Aug. 58, Sept. 49, Oct. 50, Nov. 52 and Dec. 64 (GRC).

Autumn concentrations include 52 Read's Flour Mills Norwich, 125 Watney's Maltings Yarmouth and 180 Blakeney.

Further reading: "Distribution of Collared Doves in Britain and Ireland 1965-70" (*British Birds* 65:139-155).

Barn Owl: Reported from 95 localities including 31 breeding sites. A successful press appeal for information is doubtless partly responsible for these figures compared with the previous year's total. 11 casualties along Acle New Road Jan. 10th, including birds long dead.

Little Owl: Reported from 23 localities.

Long-eared Owl: Successful breeding at Salthouse Heath and Winterton. A small roost containing 3 at Bintree mid-Feb. A road casualty near "Stracey Arms" Acle Jan. 10th (skin preserved).

Additional breeding localities for the period 1968/9: Sandringham, Great Cressingham and Shadwell. In 1971 a pair nested at Mundford.

Short-eared Owl: Breeding records: Single pairs at Morston, Titchwell, North Wootton and Welney with 2 nests at Snettisham.

As in 1970 wintering birds most abundant in the S.E. in Jan. when total of 60 at 3 day-time roosts (19 at Wickhampton, 26 at Halvergate and 15 at Haddiscoe).

Swift: October records from Hunstanton (1st), Mousehold Heath (12th) and Wiveton (23rd).

Kingfisher: Recorded at 63 sites.

Hoopoe: Between April 22nd and May 7th reported at Bayfield, Blakeney, Cromer, East Wretham, Glandford, Gillingham, Heydon (2), Heacham, Holkham, Lessingham, Salthouse, Snettisham, Watlington, Wells and Wiveton.

A single autumn occurrence: Winterton Sept. 4th.

Wryneck: *Spring:* Cranworth April 23rd. *Summer:* Corpusty calling and inspecting possible nesting site June 9th. *Autumn* N/E coasts: Present on many dates between Aug. 22nd and Sept. 25th at Blakeney Point, Blakeney, Cley, Hemsby, Holkham, Holme, Hunstanton, Mundesley, Salthouse Heath, Stiffkey, Warham, Wells, Weybourne, Winterton and Yarmouth. Difficult to estimate numbers as some made prolonged stays (including one 11 days at Holme), but minimum autumn total of 35 birds. Best days included Aug. 25th (when 7 between Holme and Hunstanton) and 27th (when 6 at Holme). Wash: Snettisham Sept. 15th. Central: Norwich Sept. 17th and 19th.

Woodlark: Present in breeding season at 10 Breck localities and at 2 Central sites. Migrants at Heacham Oct. 31st and Holme Dec. 12th.

Shorelark: North coast (Holme to Weybourne) monthly maxima: Jan. 24, Feb. 0 (probably overlooked), March 26, Oct. 120, Nov. 190 and Dec. 107. Largest Nov. flights at Cley/Salthouse (60) and Brancaster (40).

Wash: (Snettisham) 1-3 Oct. 7th to Dec. 5th. East (Waxham - Horsey - Winterton): 2-6 Oct. 5th to Nov. 28th; Breydon Nov. 27th.

Swallow: North: A late bird at Wells Dec. 26th and at Brancaster and Hunstanton next day.

House Martin: North: Thwaite Common, remarkable record of 2 well described as they circled a frozen pool and snow-covered ground *Jan. 1st* (*per* RPB-O).

Golden Oriole: Breck borders: At the locality first described in 1970 Report birds returned May 25th and 2 males and a female summered; 3 young reached flying stage. A typical nest was found in the autumn.

Passing migrants at Salthouse Heath (1 May 28th and 2 June 20th), West Newton (July 27th) and Wisbech S.F. (Aug. 7th to 14th).

Carrion Crow: Largest winter roost reported at Roydon Common where 60 March 15th and 260 Dec. 23rd.

Rook: A spring-time survey revealed 11 occupied rookeries within a radius of three miles of Norwich Castle Museum. The total number of nests was 426 made up as follows:

Thorpe St. Andrew (near Thorpe Ave.)	7 nests
Thorpe Hospital (south of main road)	6
Thorpe Hospital (north of main road)	42
Junction of Bracondale/King St.	15
Whitlingham Lane	43
Crownpoint Woods (Block Hill)	55
Caistor St. Edmunds	19
Markshall	17
Keswick	148
Colney Church	13
Catton	61

An extension of the radius a further mile would have included the rookeries at Dunston (198 nests), Intwood (68 in 1966), Drayton (16) and Postwick.

Any additional information, particularly relating to the site of former rookeries would be welcome. Rather surprisingly, Henry Stevenson in his *Birds of Norfolk* (1866) was only aware of "9 or 10 rookeries within 5 miles of Norwich". In 1865 he recorded over 20 nests in Surrey Street together with 2 or 3 pairs in St. Faith's Lane and in Pottergate and single nests in Chapelfield and Bethel Street. A small rookery in the Cathedral Close was suddenly abandoned in 1850. In the 1830's

Keswick rookery was reported to be "the largest in Norfolk and in autumn and winter it formed the chief roosting place for Rooks in the district".

The long established rookery at Heigham Hall, Old Palace Road, was finally abandoned in 1953, although there was an abortive attempt by 8 pairs to start a fresh colony in oaks in Sweetbriar Road. Among earlier casualties was the Prince of Wales Road (Mountergate) site which held 11 nests in 1948, but did not survive much longer, and a small rookery at the junction of Harbour Road/Carrow Road. The Bishopgate (Adam & Eve) site was apparently deserted about 1966.

Most recent observation at Earlham Hall was 10 nests in 1966; the site is now deserted. Among other lost sites are Pound Lane, Thorpe (10 nests 1967) and Earlham Fiveways (11 in 1967). Considerable reductions have occurred at Thorpe Hospital (94 nests 1967) and Markshall (over 40 nests 1967).

The following counts for Yarmouth & Gorleston are supplied by PRA (1961 figures are given in brackets). The site first mentioned 70 years ago at the rear of the Hospital School in the Market Place is now deserted:

St. Nicholas Parish Church	37	(51)
Pier Plain Gorleston	0	(4)
Shrublands Youth Centre	9	(6)
Gorleston Library	0	(5)
Ferry Lane Southtown	1	(0)
Gorleston High Street	0	(19)

Nutcracker: Cringleford Oct. 28th (JSC).

Longtailed Tit: Numerous in N/E Norfolk from Sept. onwards. Observations include 16 in Wells on T.V. aerials Sept. 10th and 50 at Blakeney on 28th. In Oct. 12 east at The Hood, Blakeney Point; on 6th, 10 east Cley on 17th and 10 in Walsey Hills on 31st when 200 at Happisburgh which were later dispersed by strong winds; 51 were ringed at Happisburgh – none re-trapped.

Bearded Tit: Broads: Breeding records from Hickling, Whiteslea, Heigham Sounds, Horsey, Starchgass, Martham and Catfield Fen.

North: Bred at Cley (20–25 pairs) and Titchwell (10 pairs). Following interesting movements during Oct.: 5 in a Sheringham garden moving west on 2nd, one at The Hood, Blakeney Point, moving east with Long-tailed Tits on 6th, 5 west and a few east at Salthouse on 9th, 14 from east at Brancaster on 18th, 20 at Holme on 24th, 2–3 at Weybourne on 26th and 2 in gorse at Morston on 28th.

East: New breeding stations: Stokesby Ferry and Hardley Flood one pair each. In Waveney valley at Belton 20 nesting pairs. Autumn records from Winterton-Horsey (50 Sept. 19th when northerly movement, and Breydon 12 same day), Belton (30 Oct. 1st), eastern end of Breydon (12 Oct. 23rd) and Burgh Castle 2 Nov. 30th).

Winter records from Stokesby, Reedham and Hardley Flood; also Cantley where over 100 in Dec. and 30 were ringed.

Wash: Heacham-Snettisham, bred; 10 March 17th and up to 28 from Oct. 29th to Dec. 5th. Breck: Mickle Mere 2 Dec. 23rd. Central: Guist small party April 5th; Old Buckenham Fen from Nov. 14th onwards.

Fieldfare: Late birds at Hunstanton May 15th and Cranworth on 21st whilst a pair remained at Felbrigg until June 10th. First autumn birds Blakeney Point Aug. 20th and 22nd.

Redwing: Extreme dates May 7th (East Wretham Heath) and Aug. 8th (Roydon Common).



Ring Ouzel: Coastal records between April 9th and Oct. 31st; no party exceeded 5. Broads: Rockland April 12th. Brecks: Langford near Bodney male on 3 occasions from July 27th. Central: Foxley Oct. 13th. Additional 1970 record: Foxley, pair for 2 weeks in April in clearing.

Stonechat: Breeding records: North: Single pairs at Blakeney, Morston, Salthouse Heath and Horsford Heath. East: Horsey Warren, one pair.

Whinchat: Bred in brecks at Sturston and Thorpe Gt. Heath and in Fens at Hilgay.

Black Redstart: *Breeding:* At Yarmouth 5 singing males in early May and 2 pairs bred; a third pair reared young at Riverside, Gorleston.

Migrants: Total of 29 spring/autumn birds between April 2nd and Oct. 31st including inland records at Fakenham, Rockland St. Mary, Stanford, Taverham and West Walton.

Bluethroat: North coast: In *spring* at Cley June 4th–6th; in autumn total of 4 at Cley, Blakeney Point and Holkham Aug. 23rd/24th and Sept. 11th/12th.

Wash: One landed on a ship 4 miles off Hunstanton Sept. 13th departing on arrival at Lynn.

Savi's Warbler: Fens: Wisbech S.F. April 17th (JAWM).

Icterine Warbler: North: Total of 7 at Muckleboro' Hill, Wells, Holkham and Titchwell Aug. 22nd to Sept. 12th. East: Waxham Aug. 22nd.

Blackcap: A wintering female at a Swannington bird-table Jan. 25th. Late Nov. birds at Cley on 20th and at Wells (2) on 21st.

Barred Warbler: North: Total of 20 at Weybourne, Cley, Blakeney, Blakeney Point, Wells/Holkham, Holme and Hunstanton Aug. 15th to Oct. 27th including 5 Blakeney Point Aug. 21st. East: Paston Aug. 22nd and Winterton Sept. 19th.

Greenish Warbler: North: Blakeney Point Aug. 21st–23rd (BWJ, OL *et al*).

Chiffchaff: Winter records from Snettisham Jan. 2nd, West Runton on 16th and Cantley Dec. 24th.

Wood Warbler: Spring arrival from April 27th and breeding season records from 6 localities.

Passage migrants at Blakeney Point, Holkham and Holme, Aug. 21st–24th and at Wells Sept. 18th–20th.

Bonelli's Warbler: North: Holkham, Aug. 22nd (DIMW). Second county record.

Yellow-browed Warbler: North: Holkham/Wells, ones and twos on 12 dates between Sept. 18th and Oct. 30th.

Pallas's Warbler: Norwich, Oct. 30th in observer's garden (JFWB).

Woodchat Shrike: North: Crostwight May 28th (CJL) and Wells June 5th/6th (SCJ, BWJ).

Red-backed Shrike: *Breeding season distribution:* North: 7-8 pairs at 5 sites. East: 4 pairs at 2 sites. Brecks: 4 pairs at 3 sites. County total 15-16 pairs. Additional 1970 breeding record increases Breck total to 5 pairs.

Migrants: Total of 11 at Hunstanton, Old Hunstanton, Holme, Titchwell, Blakeney Point, Weybourne, Breydon and Acle Bridge between Aug. 15th and Sept. 16th.

Rose-coloured Starling: Wash: Snettisham June 2nd (RB). North: Wells Nov. 1st to 23rd (HE, BR).

Siskin: Most abundant in Brecks between April 8th and 18th when 50 at Roudham, 30 at Wretham Heath, 100 at St. Helen's Well and 20 at Fowl Mere (also 30 on Mousehold Heath).

Single pairs nested successfully at East Wretham Heath and on county border at Brandon Park (55 feet up in a Scots Pine). Also nested at St. Helen's Well 1970.

Garden bird tables visited at Cromer, Framingham Earl, Horsey, Northwold and Thorpe St. Andrew.

Redpoll: Mealy Redpoll records include one at Holkham March 27th, 2 at Wells and 5 at Thornham Oct. 10th and 70 Wells Dec. 5th.

Serin: North: Wells, male, May 13th (CAEK).

Crossbill: Most records from north-west with up to 5 at Wolferton, West Newton, Sandringham and Dersingham (where a pair bred).

Brambling: Unusual numbers in Norwich area until mid April including 50 in The Close, 40 at Mousehold, 200 at Taverham and 100 in Earlham Road.

Spring stragglers at Swaffham May 3rd and at Holme June 15th.

Corn Bunting: The county distribution was last summarised in 1958 Report. A further list of localities appears below, but the majority are for the period 1967-71 inclusive. A wintering flock of 70 was discovered in Halvergate Marshes in Feb. 1969 and 60 were again there in Feb. 1971. In 1971 30 singing males estimated along the coast between Holme and Mundesley (HH).

Blackboro' End	Hunstanton	Runcton
Blakeney Point	Kelling Heath	Salthouse Heath
Boughton	Lang Mere	Dersingham
Brancaster	Lessingham	Snettisham
Castle Rising	Lynn Point	Swanton Morley
Cley	Marham	Terrington St. Clement
Didlington	Massingham Heath	Tilney
East Wretham	Methwold	Thompson
Fincham	Morston	Thornham
Halvergate	Mundesley	Waxham
Happisburgh	Narborough	West Runton
Holme	Riddlesworth	Weybourne
Horsey	Ringstead Downs	Yarmouth

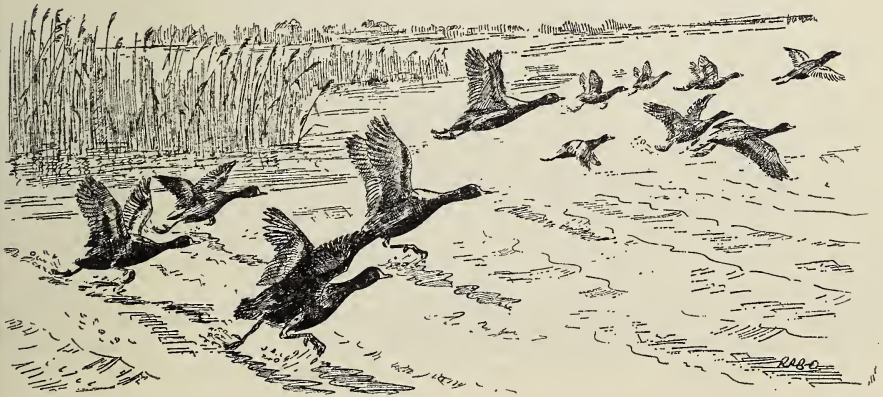
Ortolan Bunting: North: Blakeney May 10th and Aug. 27th; Cley Aug. 22nd; Weybourne Sept. 9th; Holkham on 11th and Kelling Heath on 12th.

Lapland Bunting: North coast: 1-4 at usual localities from Sept. 18th. Wash: Snettisham Feb. 7th. Fens: Wisbech S.F. Nov. 20th. East: Halvergate, 3 Jan. 10th and singles Feb. 7th and Nov. 3rd. Winterton, 3 Oct. 24th.

Snow Bunting: Wash/North/East coasts: Extreme dates March 25th and Sept. 5th. Winter maxima include Breydon 75, Weybourne 45, Cley-Salthouse 100, Blakeney 50, Brancaster 200, Holme 70, Snettisham 300 and Terrington 70. Breck: Sturston Warren Dec. 5th.



The following, not mentioned in the Classified Notes, were also recorded in 1971 (*breeding species in italics*): Black-throated Diver, Great Northern Diver, Red-throated Diver, *Great Crested Grebe*, Shag, *Mallard*, *Teal*, Wigeon, *Pintail*, *Shoveler*, Common Scoter, *Shelduck*, *Canada Goose*, *Mute Swan*, Merlin, *Kestrel*, *Red-legged Partridge*, *Partridge*, *Pheasant*, *Moorhen*, *Coot*, *Lapwing*, Grey Plover, Turnstone, *Snipe*, Jack Snipe, *Woodcock*, Green Sandpiper, Common Sandpiper, *Redshank*, Greenshank, Knot, Dunlin, Sanderling, Lesser Black-backed Gull, Razorbill, Guillemot, Puffin, *Stock Dove*, *Woodpigeon*, *Cuckoo*, *Tawny Owl*, *Nightjar*, *Green Woodpecker*, *Great Spotted Woodpecker*, *Lesser Spotted Woodpecker*, *Skylark*, *Sand Martin*, Hooded Crow, Jackdaw, Magpie, Jay, *Great Tit*, *Blue Tit*, *Coal Tit*, *Marsh Tit*, *Willow Tit*, *Nuthatch*, *Treecreeper*, Wren, *Mistle Thrush*, *Song Thrush*, *Blackbird*, *Wheatear*, *Redstart*, *Nightingale*, Robin, Grasshopper Warbler, Reed Warbler, *Sedge Warbler*, *Garden Warbler*, *Whitethroat*, *Lesser Whitethroat*, *Willow Warbler*, *Goldcrest*, *Spotted Flycatcher*, *Dunnoch*, *Meadow Pipit*, *Tree Pipit*, *Rock Pipit*, *Pied Wagtail*, *White Wagtail*, *Starling*, *Hawfinch*, *Greenfinch*, *Goldfinch*, *Linnet*, *Twite*, *Bullfinch*, *Chaffinch*, *Yellowhammer*, *Reed Bunting*, *House Sparrow* and *Tree Sparrow*.



BEWICK'S SWANS IN SOUTH-EAST NORFOLK

by P. R. Allard

The fresh marshes adjoining Breydon Water and the lower reaches of the rivers Yare, Bure and Waveney together form one of the six regular wintering localities of Bewick's Swans in this country.

Prior to the massive influx in the severe winter of 1956, this swan was an irregular visitor to East Norfolk, small herds staying only for short periods. Between 1957 and 1961 passage herds of up to 24 were regularly recorded. Then in February 1962 a herd of 13 was located between Reedham and Haddiscoe where they remained two weeks, roosting on Breydon estuary. This herd was to become the pioneer wintering one. Severe weather early in 1963 brought another influx when 52 stayed at Breydon for several days in January, 18 remaining until early March on flooded levels just south of the estuary. At the end of the same year, on December 21st a total of 106 Bewick's headed north-west over Breydon bound for the highly attractive Ouse Washes. In 1964 19 birds stayed on the same level until March 1st when the total suddenly increased to 60 and to 164 on 7th/8th. All departed within a few days. During this period up to 94 Bewick's passed through Hickling and 82 lingered at Horsey for over two weeks; in fact, over 1,100 birds passed through the county in the first week of March that year.

A further increase in the size of the wintering herds was noted in 1965, up to 48 being present until March 14th and 60 at the end of the year. Favoured areas were Breydon south wall and Burgh Castle levels with smaller herds visiting Halvergate, Haddiscoe and Reedham. Breydon flats were used for roosting, unless flood water was available. The next year saw herds of up to 45 remaining until early April; 5 birds penetrated the Yare valley to Strumpshaw. The following year, up to 30 were on Burgh Castle levels increasing to 53 on January 22nd. 81 were at Halvergate February 11th and the following day 77 alighted on Breydon. Following heavy rains pools quickly formed on Halvergate marshes and these attracted 108 Bewick's on February 24th, 86 remaining until March 4th. Smaller herds were in the Haddiscoe area.

1968 was another good year with up to 73 between mid-January and the end of February on the lower Bure, Halvergate, Burgh Castle and Haddiscoe levels. 40 returned as early as October 20th, but did not stay; 8 were at Horsey the same day. In 1969 main concentrations were at Norton and Lower Thurlton roosting on flood marshes on the Suffolk side of the Waveney. Counts here included 79 January 25th, 85 February 15th and a maximum of 148 March 1st which were still present a week later. The Norton and Lower Thurlton areas again proved attractive in 1970, but herds soon wandered when flood water disappeared and 91 soon returned to Halvergate. This period saw the desertion of the once favoured Burgh Castle and south Breydon wall levels due to improved drainage and ploughing. Maximum 1971 count was 86 at Lower Thurlton level indicating a decrease in numbers wintering here. At nearby Haddiscoe on March 14th a group of 32 contained a single Bewick's dyed yellow at Slimbridge by the Wildfowl Trust.

Unless part of the Breydon area fresh marshes remain shallowly flooded each winter it seems inevitable that the combination of improved drainage and increased ploughing will force these visitors from the tundras to seek winter quarters elsewhere.



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David and Katie Urry

Despite improved drainage, the extensive marshland levels behind Breydon Water attract Bewick's Swans each year. Peak numbers have included 148 on March 1st 1969 and 164 on March 7th 1964. Flooded marshes are most favoured for roosting, but Breydon is also used from time to time.



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K. P. Bagnall-Oakeley

Part of the wintering herd of Bewick's Swans at Welney Wash with Whooper Swans in the foreground. An all-time record total of 1,278 Bewick's (including 210 juveniles) assembled on the Ouse Washes in mid-February 1971.



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R. P. Bagnall-Oakley

At Welney Wildfowl Refuge on the Ouse Washes excellent views may be obtained of wintering Bewick's Swans which travel here from the Yamal Peninsula and the tundras bordering the Kara Sea. The first herds put in an appearance late in October. Main departure usually takes place in mid-March.



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Eastern Daily Press

This pair of Whooper Swans stayed at Snettisham until March 15th. The cob returned November 10th bringing three young birds, but unfortunately the pen did not reappear.

Reserves

Barton Broad

Norfolk Naturalists Trust

Great Crested Grebes again showed a decrease and although a pair of Common Terns summered they did not nest on the platform provided. Single pairs of Pochard and Gadwall reared young. A pair of Black Terns appeared from time to time between May and August. 18 pairs of Herons nested in Heron Carr.

Blakeney Point

The National Trust

It was a disappointing season for the terns with frequent rain and strong winds during late May and the first half of June. High tides covered parts of the New Ridge and the birds also had to contend with sandstorms and foam.

By mid-June half the breeding colony of Common Terns had deserted their nests. Some fine weather followed, but the birds were beginning to lose interest and after further storms there was an outbreak of egg-eating by gulls and Oystercatchers. Good weather in July resulted in many new clutches of eggs, but heavy predation by gulls continued and high tides in mid-July washed out over 100 nests.

At this time a Short-eared Owl visited the ternery nightly taking both chicks and adult terns. Between 30 and 40 decapitated adult Common Terns were found. Disheartened by bad weather earlier the terns deserted the beaches *en masse* at dusk. Hedgehog tracks were found in the ternery in June and single Fox, Stoat and Rat were also recorded. Some Common Terns laid no less than three clutches before departure.

By mid-August only 20 Common Tern chicks survived to fly with perhaps 50 young Little Terns. The latter were more successful when they abandoned the main ternery and nested again on the beach towards Cley. Here, they avoided high tides, the predator free-for-all and human disturbance. High tides at the end of May deterred Sandwich Terns from nesting on the New Ridge; up to 100 summered increasing to over 1,000 on July 22nd. A summary of nests appears below (the Little Tern total includes nests at The Hood and along the ridge towards Cley):

Mallard	6	Common Gull	1
Shelduck	35	Common Tern	1,200-1,600
Red-legged Partridge	6	Arctic Tern	2
Oystercatcher	120	Little Tern	150-200
Ringed Plover	162	Blackbird	1
Redshank	20	(first time)	

Breydon Water

Local Nature Reserve

Despite a mild winter, considerable numbers of wildfowl assembled in the Breydon area. Maxima included 3,100 Wigeon, 615 Shelduck, 171 Pintail, 100 Goldeneye, 150 White-fronted Geese, 21 Pink-feet, 5 Barnacles and 7 Brents and 150 Bewick's Swans.

Arctic-bound waders provided exciting days in May and 169 Bar-tailed Godwits were present on 5th. Avocets were present on a number of occasions between April 1st and October 6th including a party of 9. Breydon remains the most regular Norfolk locality for Spoonbills – this year 3 put in an appearance. The estuary shared in the large-scale arrival of adult Curlew-sandpipers early in August; 94 were observed on 6th.

Other interesting visitors included Kentish Plover, 21 Blacktailed Godwits, 12 Bearded Tits, Peregrine and Shore-Lark. A Chilean Flamingo (August 22nd) and 3 White Pelicans (August 31st for three days) were also recorded.

Cley Marsh

Norfolk Naturalists Trust

After an absence of eight years, Bitterns bred on the Marsh and young were observed in July. Other nesting birds included a fair number of Bearded Tits. Black-tailed Godwits returned March 22nd, increasing to 8 by the end of April; 2 pairs attempted nesting but no young were raised. Ruffs and Reeves were present all year, including 15 early in December.

The Migration section of this Report contains details of the many migrants passing through Cley. Among 1971 highlights were Black Kite, Sabine's Gull, White-winged Black Tern and Baird's Sandpiper.

Hardley Flood

Norfolk Naturalists Trust

Eighty acres in extent, this unique area adjacent to the river Chet is best known for its Ring-necked Duck which has put in an appearance each spring since 1969. In 1971 it stayed six weeks. Another New World visitor, a Blue-winged Teal, arrived in mid-December.

Bearded Tits were proved to breed for the first time; 5 young fledged. Other nesting species included single pairs of Pochard and Oystercatcher. A pair of Common Terns occupied a raft raising 2 young. A hundred Shelduck had assembled on The Flood in early April and over 60 ducklings were present early in July. 7 Great Crested Grebes spent the summer at Hardley and a Garganey was seen in May. A Little Gull was noted June 30th. In mid-November 25,000 Starlings were roosting in the reedbeds.

East Wretham Heath

Norfolk Naturalists Trust

Up to 10 Bewick's Swans visited Lang Mere at both ends of the year and 2 Whoopers joined them November 21st. Other winter visitors included Hen Harriers (until April 7th) and Great Grey Shrike (in January and November). Among the more interesting passage migrants at Lang Mere were Oystercatcher, Little Ringed Plover, Reeve, Green Sandpiper, Wood Sandpiper (August 25th), Turnstone and 5 Black Terns.

A flock of 30 Siskins was on the heath in early April and a pair stayed to rear 2 young. Other nesting birds included Tufted (brood of 5), Yellow Wagtail, Ringed Plover (2 young reared) and Hawfinches. Up to 23 Hawfinches were resident in hornbeams from the beginning of the year until late April and from October 6th onwards.

Hickling Broad

Norfolk Naturalists Trust

During the opening months of 1971 Ruffs and Reeves and Hen Harriers were frequently observed. A female Marsh Harrier was present all year and was joined from time to time by an immature male. Both Great Grey Shrike and Red-throated Diver appeared March 3rd.

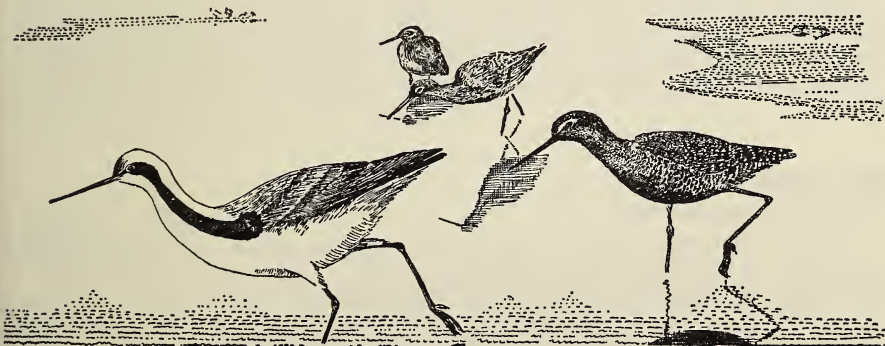
Black-tailed Godwits arrived March 25th and were later watched displaying. Several pairs of Pintail assembled on Rush Hills in mid-April. An Osprey was noted on 14th, Spotted Redshank on 21st, Black Tern next day and Ruffs in breeding plumage on 25th.

The passage of Northern waders continued in May when the flood-grounds attracted Spotted Redshank, Grey Plover, Turnstone, Wood Sandpiper and Little Stint; also Little Gulls (2 on 9th and 4 on 15th/16th) and Black Terns. June was an exciting month with Little Gull on 2nd, Spoonbill on 16th and a Wilson's Phalarope in full breeding plumage between 17th and 25th; at this time 8 Spotted Redshank were also on view.

Single booming Bitterns were recorded at Catfield Dyke, Swimcoots, Rush Hills, McHardy's Plantation, Bethel Marsh, Whiteslea and Perrin's Boathouse; in addition 2 were booming in Starch Grass. Bearded Tits had a successful season with the main colonies between Whiteslea and Deary's Marsh and at Swimcoots and Ling's Mill. Among nesting wildfowl were Tufted, Pochard, 2 pairs of Garganey and 3 pairs of Shelduck. 20 pairs of Herons nested (14 in Sounds Wood and 6 in McHardy's Wood), 5 pairs of Common Terns (all at Rush Hills except one pair on Swimcoots), 2 pairs of Little Terns on Rush Hills and Ringed Plover close to the Observation Hut.

Autumn waders began returning in mid-July and until the end of September the pools and floods attracted such birds as Ruffs, Green, Wood and Common Sandpipers, Spotted Redshank, Greenshank, Little Stint, Black-tailed Godwit; also Little Gulls and a Red-necked Phalarope (August 21st).

Four Whooper Swans appeared November 12th followed a week later by 2 Hen Harriers which stayed until the year end. Bewick's Swans passed through in mid-December.



Wilson's Phalarope and Spotted Redshanks

Holme Nature Reserve

Norfolk Naturalists Trust

The wader pools at Holme again proved attractive and most exciting visitor was a Temminck's Stint which stayed 12 days from July 25th. Visiting wildfowl included large numbers of Brent Geese on the shore in February. The Reserve featured in the mid-November Waxwing influx.

Migratory records are fully recorded on pages 349 to 350.

Horsey Mere

John Buxton

The first Bittern began booming March 15th and by the end of the month there were 4 resident boomers compared with the normal 5 (Brayden Marshes was not occupied in 1971). Bearded Tits had a successful breeding season, particularly on the 90 acres of flood between Steam Mill Corner and Black Fleet. This area also attracted considerable numbers of Snipe and, in spring, both Black-tailed Godwits and Ruffs. Black-headed Gulls colonised the new flood.

A most interesting spring feature was the presence of a pair of Hen Harriers. A cock (and up to 4 ring-tails) had been present since October 1970 and in April he was observed carrying nesting material for a full week. Unfortunately, both birds then departed. Low-flying aircraft over the marshes three days in succession may well have been responsible. On one occasion, the cock Hen Harrier was seen to drop a stick he was carrying in sheer fright as an aircraft roared past at his own level.

Marsh Harriers in ones and twos spent the greater part of the year in the Hickling/Horsey/Marham area but none attempted nesting. Among other breeding birds were 3 pairs of Oystercatchers on the marshes and a pair of Great Crested Grebes on the Mere. 2 pairs of Grasshopper Warblers nested on Horsey Warren where a pair of Stonechats was seen feeding young.

Marham Broad

Norfolk Naturalists Trust

Among winter wildfowl were Shoveler, Pochard, Tufted and Goldeneye; also 16 Whooper Swans on March 16th with Garganey and Gadwall in the spring. A Red-throated Diver made a brief stay in February.

Parties of up to 9 Black Terns passed through in May; on 28th they were joined by a Whiskered Tern. 2 pairs of Great Crested Grebes nested successfully. In August hundreds of Sand Martins roosted nightly in the reedbeds. Marsh and Hen Harriers returned in October followed by Water-rails the following month.

Ranworth Broad

Norfolk Naturalists Trust

Wildfowl numbers were very low; at the end of January only 600 Wigeon were present compared with 1,000 the previous year. Five Scoters arrived April 22nd staying two days. 2 pairs of kingfishers spent the summer round the Broad. Common terns returned April 22nd and a total of 54 pairs nested on the rafts; 42 young reached the flying stage. 29 pairs of herons nested in the usual two colonies.

Roydon Common

Norfolk Naturalists Trust

Most notable winter visitors were Hen Harriers at both ends of the year. On January 17th 3 were observed, including a male, and a Ring-tail was mobbed by a male Merlin. The latter stayed until March 3rd when 3 Hen Harriers (including 2 males) were present. In December 3 were again on view including a fine male. A roost of Carrion Crows was occupied until mid-March and from late November onwards. Peak number was 100 in mid-December when 5 Hooded Crows were also present. Among breeding birds were 12 pairs of Shelduck, Redshank, 3 pairs of Curlew, Nightjar, Grasshopper Warbler and 2 pairs of Yellow Wagtails; also Willow Tits and 7 species of warblers.

Single Short-eared Owls were noted in April and June whilst a Redwing appeared August 8th. May 24th was of particular interest with Ring Ouzel, Great Grey Shrike and Short-eared Owl. A total of 75 species has been recorded on this Common in two years.

Scolt Head Island

The Nature Conservancy

1971 was another record year for Sandwich Terns and 4,400 pairs nested. First eggs were laid May 1st when 500 pairs in the area; the main nesting group arrived on 7th increasing the breeding population to 3,000 pairs and by June 1st it had reached 4,000 pairs. The proportion of two-egg clutches was nearly 14% – the highest percentage known at Scolt. The low total of 160 addled eggs was recorded and less than 200 chicks died. Plentiful supplies of sand eels and white-bait and no predation allowed a minimum of 4,000 fledged chicks.

540 pairs of Common Terns began nesting from May 16th. An abundance of food for the young resulted in 300 chicks reaching the flying stage thus equalling the 1963 and 1969 seasons.

Between 60 and 70 pairs of Little Terns arrived during April, but only 40 pairs stayed to nest (40 chicks fledged) compared with 72 breeding pairs the previous year. This decrease was mainly due to a lowering of beach levels caused by winter high tides. The last chicks fledged August 12th. A single pair of Arctic Terns reared one young.

500 pairs of Black-headed Gulls nested in the Ternery; over 80 nests were destroyed by 2 Stoats early in June; 300 chicks fledged. 40–50 pairs made a late nesting attempt on the saltings east of Beach Point, but failed due to flooding. A pair of Kittiwakes nested, but the single egg was covered by wind-blown sand.

Among breeding waders were 150 pairs each of Oystercatchers and Ringed Plovers, together with 52 pairs of Redshank. Also of interest were 120 pairs of Shelduck and 4 Wood-pigeon's nests.

Stiffkey Binks

Holkham National Nature Reserve

The numbers of breeding birds remained almost identical with those of the previous season. 148 pairs of Common, 20 pairs of Little and one pair of Arctic Terns, 10 pairs of Ringed Plovers, 21 pairs of Oystercatchers and 22 pairs of Black-headed Gulls all nested successfully.

Titchwell Marsh

Norfolk Ornithologists Association

Wintering birds included Short-eared Owls, Bewick's Swans and Snow Buntings. At least 10 pairs of Bearded Tits bred and young were on the wing at the end of May. A pair of Short-eared Owls also nested.

Over 20 pairs of Little Terns bred on the adjoining beach. Among visiting birds of prey were Hobby on June 7th and Merlin for three weeks in July. Both Icterine Warbler and 2 Red-backed Shrikes appeared August 24th.

Weeting Heath

Norfolk Naturalists Trust

The first Stone-curlews arrived in mid-March and by late April 3 or 4 pairs were present in the enclosure. Wheatears were abundant and at least 12 pairs were located.

Welney Wildfowl Refuge

Wildfowl Trust

1971 was a good year at Welney with large numbers of ducks and swans using the refuge area. Wigeon numbers were particularly high in January with about 20,000 present on 30th, out of some 32,000 counted on the whole of the Ouse Washes. Thereafter the total dropped to 8,500 on February 20th, 5,000 on 27th and March 20th and 3,000 on April 3rd. Mallard numbers stayed at the 2,000 level throughout January falling to under 1,000 from mid-February onwards. The highest Teal count was 1,700 on January 16th. Pintail reached a peak of 400 January 23rd while Shoveler reached 350 on 16th.

No less than 1,234 Bewick's Swans were counted on the whole of the Ouse Washes January 18th and even this record was beaten February 15th when 1,278 were present. The number on the refuge during this period fluctuated between 300 and 400. Many of these were fed daily outside the Observatory building. Up to 25 Whooper Swans were frequently with them. Small parties of up to 20 White-fronted Geese appeared during January and 64 paid a brief visit from February 27th for four days.

The breeding season was rather mixed with one pair of Ruffs probably breeding either in or just to the north of the refuge. Only 2 pairs of Black-tailed Godwits bred, compared with 5 in 1970, but both were successful in rearing young to the flying stage. Black Terns called in but did not stay. A pair of Short-eared Owls laid a clutch of 7 eggs rearing 5 young. The male was notable in his defence of the nest; on one occasion almost knocking out the warden with a blow to the head. Most duck species had a good season and 3 broods of Teal and 2 each of Garganey and Tufted Duck were noted. Snipe and Redshank also bred well.

Mallard numbers were high in autumn with 3,500 present throughout September and over 2,000 for most of the remainder of the year. There was little natural flooding until early December and other ducks were not numerous until then, though there were 8,000 Wigeon as early as November 13th. After the Washes flooded numbers rose rapidly and there were 18,000 Wigeon December 31st as well as 1,800 Teal, 400 Shoveler and 150 Pintail. The first Bewick's Swans returned November 6th and by early December there were over 180, with 232 present at the year end. The daily feeding routine in front of the windows of the Observatory quickly got into its swing, providing the spectacle of a great flotilla of swans closely pursuing the warden with his barrow full of grain. Up to 20 Whooper Swans were again with them.



Migration

Cley and Salthouse

The year began well with 14 Barnacle Geese on January 1st in addition to the usual Glaucous Gull. A Merlin passed through on the 6th and on 8th 18 Bewick's Swans were on the sea. 13 Barnacle Geese stayed until the 15th and up to 21 White-fronted Geese were present. Two Great Grey Shrikes were of interest on Salthouse heath on 31st.

February was very quiet. One Barnacle Goose remained till 8th when one Bean, 21 White-fronted Geese and 5 Pink-feet were recorded. Several Ruffs wintered; the Bean Goose was still present on 21st.

Eight more Ruffs arrived on March 18th and the first Black-tailed Godwit (a male) appeared 4 days later. 2 Garganey were noteworthy arrivals on 28th when a Chiffchaff was on East Bank.

In April the first Wheatear came on 4th. The 8th was notable for a Great Grey Shrike and the following day brought a Kentish Plover which remained till 11th. Swallow, Willow Warbler and Sandwich Tern were all noted on 10th. Spotted Crake was new on 12th with Slavonian Grebe offshore next day. The 17th brought in more migrants: Yellow Wagtail, Sedge Warbler and Ring Ouzel. An immature Glaucous Gull appeared on the 19th and up to 8 Black-tailed Godwits were on the marsh. 20 Black Terns lingered briefly on 23rd when 20 Fieldfares and 24 Yellow Wagtails were present. Nightingales and Whinchat arrived on 26th, Reed Warbler and Lesser Whitethroat on 28th, and the first Swifts on 29th.

May was exciting as usual. On 2nd Avocet, Peregrine and 2 Marsh Harriers appeared with Black Redstart on 3rd. The 5th brought 2 Spotted Redshanks, Greenshank, 10 Black Terns with 20 the following day; also Sparrowhawk and Whimbrel. Highlight of the month was a Black Kite between 6th and 10th. Red-backed Shrikes returned on 8th. Southern rarities continued on 9th when a

Purple Heron was detected; it stayed 2 days. Two Kentish Plovers were found on 10th when Montagu's Harrier also appeared. Arrivals were few until the 15th when a Spoonbill was noted, with 4 red Curlew-Sandpipers and Little Gull next day. 3 more Little Gulls appeared on 23rd increasing to 5 on 28th. 4 Ruffs displaying on the 25th were followed by Rough-legged Buzzard on the 27th and Golden Oriole next day. Other highlights at the month end were Red-footed Falcon on 29th and Osprey on 30th.

June was quiet apart from Bluethroat on East Bank for several days from 5th when 6 Black Terns were new and a Dotterel visited Salthouse heath. A Blue-headed Wagtail was singing on 11th and an Osprey returned on 28th.

Waders of interest during July included Wood Sandpipers from 9th and 3 Little Ringed Plovers on 27th. A Little Gull was noted on 12th and 3 young Bitterns were located on 16th. 3 Wood Sandpipers on August 13th were of interest. North-easterly winds from 21st brought a typical "rush" with Pied Flycatchers, 4-5 Barred Warblers, early Fieldfare and Greenish Warbler at Blakeney Point whilst a Balearic Shearwater was at sea. Red-necked Phalarope was also recorded staying until 25th. The 22nd produced Wryneck and Oortolan with Bluethroat, 10 Black Terns and 3 Wrynecks next day. New birds on 24th included Mediterranean Gull and Osprey. The 28th was a red-letter day with White-winged Black Tern, Avocet, 2 Wrynecks and Barred Warbler. 8 immature and 1 adult Little Gull arrived on 29th and 2 Glaucous Gulls visited Arnold's Marsh.

The Avocet remained till September 2nd when another Barred Warbler was noted. Two Balearic Shearwaters were at sea on 5th followed by Pomarine Skua next day and Long-tailed Skua on 11th. Hundreds of Wigeon were moving west on 7th. 1-2 Wrynecks and a Bluethroat were found between 9th and 11th. New on 11th was Red-necked Grebe with Manx Shearwater at sea on 13th. Pride of place on 16th was a Baird's Sandpiper on Arnold's Marsh, perhaps the same bird which appeared in 1970; it stayed until October 10th. 2 Red-necked Grebes were at sea on 18th and a Hobby was a surprise on 19th. 4 Lapland Buntings were found on 26th and a Sabine's Gull was a distinguished visitor on 28th and 30th; also single Glaucous and Little Gulls.

The first Richard's Pipit of the autumn was identified on October 2nd with another on 5th. The first 3 Shorelarks arrived on 4th increasing to 16 by 6th. Peregrine on the 6th and Great Grey Shrike on 9th were followed by 4 Leach's Petrels on 13th. North-easterly winds continued on 14th when Sabine's Gull and Little Gull were at sea. 2 more Richard's Pipits arrived on 17th, Hen Harrier and Iceland Gull on 21st. By 23rd large numbers of Redwings, Fieldfares, Skylarks, Starlings and Meadow Pipits were arriving also a Long-tailed Duck. 50 Shorelarks had assembled by 24th whilst at least 8 Great Grey Shrikes were in the area on 26th. The 26th also brought Whooper Swans, Little Auk and Storm and Leach's Petrels. October ended with 2 Merlins on 28th, Dotterel on 30th and Firecrest on 31st.

The first week in November brought 4 Great Grey Shrikes and a late Barred Warbler, and a Pomarine Skua at sea on 3rd. 2 Barnacle Geese arrived on 6th also 2 Waxwings which heralded a small invasion later in the month. Single Little Auks were identified on the 22nd and 24th and a herd of 42 Bewick's Swans passed west on 29th.

Early December saw the arrival of 2 more Barnacle Geese and 7 White-fronted Geese. 16 Shorelarks were noted on 23rd.

Holme

The year began with 2 Short-eared Owls which remained throughout the month. Up to 23 Snow Buntings, 2 Lapland Buntings, 2 Stonechats and 3 Goldeneye were noted in January with 2 Red-breasted Mergansers and 2 Long-tailed Ducks offshore on 31st. Snow Buntings increased to 60 in February and up to 100 Golden Plover were on the marsh. The 2 Stonechats remained throughout February together with 3 Woodcock on 13th and Bittern on 20th.

March was quiet until the 14th when another Stonechat arrived and up to 250 Brent Geese frequented the shore. The first Wheatear arrived on 20th when 6 Goldcrests, 4 Song Thrushes and 2 Redwing arrived. A single Shorelark was present on 24th; on 26th, Linnets were moving west and a Hen Harrier appeared. 24 Redwings passed through on the 29th with a few Robins, Blackbirds, Fieldfares and Song Thrushes.

April began with two cold weeks of easterly winds and a dearth of spring migrants. However, the first Swallow and 3 Sandwich terns arrived on 2nd with 5 Wheatears and Black Redstart next day and again on 14th and 17th. Common and Little Terns were new on 15th with Tree Pipit, Willow Warbler and Cuckoo next day. 5 Sand Martins arrived on 18th and also of interest were 2 White Wagtails. Sedge Warbler, 5 Yellow Wagtails, 2 Ring Ouzels, 3 Chiffchaffs and 7 Whimbrel all appeared on 19th. Other Ring Ouzels passed through on 22nd, 26th, 27th and 28th. Pied Flycatchers, always scarce in spring, appeared on 24th, 25th/26th (2) and 27th/28th. Swift and Marsh Harrier were new on 30th. Other interesting April visitors included Red-necked Grebe on 6th, Great Grey Shrikes on 7th and 10th, 5 Barnacle Geese west on 16th and 2 Long-tailed Ducks on 19th.

Easterly winds continued during the first 6 days of May bringing a noticeable influx on 4th when 2 Curlew-Sandpipers, 20 Willow Warblers, 20 Blackcaps, 2 Redstarts and 2 Pied Flycatchers were present. 5 Black Terns moved east on 6th when 5 Little Stints were new. Another Black Redstart arrived on 11th and from the 12th small numbers of warblers, Redstarts and Tree Pipits were noted. A late Merlin was seen on 15th; on 18th Swallows were passing west at the rate of up to 300 per hour. 2 Spotted Redshanks and 2 Greenshank were of interest on 19th and 2 late Wigeon appeared on 23rd. A Ring Ouzel came in on 25th with 12 Turtle Doves. A notable arrival on 29th was a Firecrest which remained till the following day singing in buckthorn bushes. Lapwing were already moving west on the 30th when both Little Gull and Marsh Harrier put in an appearance.

June was an interesting month with Marsh Harrier on 1st, Little Gull on 2nd, Black Tern on 6th and Brambling on 15th; also up to 4 Greenshank and a Spotted Redshank. Short-eared Owls and Grasshopper Warblers bred successfully.

July was rather quiet apart from the first returning waders. Three notable records were Sooty Shearwater on 17th, Black Redstart on 19th and Long-tailed Skua on 25th, also the first Arctic Skuas. Whimbrel passage began on 3rd and a Temminck's Stint and Curlew-Sandpipers arrived on 25th. August opened with 1,500 Swifts per hour crossing The Wash and both Wryneck and Pomarine Skua on 3rd; up to 20 Arctic Skuas were a daily feature. 2 Little Gulls passed through on 2nd with another next day, 4 on 4th and another on 15th. 2 Marsh Harriers appeared on 19th with Wood Warblers on 21st and 23rd/24th. Other migrants included up to 6 Wrynecks daily between 22nd and 30th also 25 Whinchats,

12 Pied Flycatchers, 30 Wheatears, 20 Garden Warblers and 15 Willow Warblers/Chiffchaffs with smaller numbers of Redstarts, Whitethroats and Lesser White-throats. A Black Tern on 27th was followed by a White-winged Black Tern next day. August waders included Little Ringed Plover on 17th, 22 Greenshank on 22nd, 5 Little Stints on 5th, the Temminck's Stint till 6th and 28 Curlew-Sandpipers on 4th.

Among September highlights was a Spotted Crake on 3rd (when a Marsh Harrier passed through followed by another 4 days later) and Sabine's Gull on 13th. Osprey was of interest on 9th also 2 Wrynecks and a Richard's Pipit, a second bird being present on 25th. An early Fieldfare appeared on 10th with 11 more on 17th. An Avocet on 3rd and 4 Wood Sandpipers on 10th were the best waders of the month. Wrynecks increased to 4 on 12th and one stayed until 21st. The first Snow Buntings came on 13th with 20 at the month end. 58 Gannets were offshore on 14th, and a Red-backed Shrike appeared next day. A Firecrest stayed 5 days from the 22nd with Merlin and another Wryneck on 25th. Lapland Buntings arrived on 27th when 6 Redwings came in.

October was also rewarding with Barred Warblers appearing on 4th/5th and 27th, Richard's Pipits on 6th and 9th and a late Avocet on 24th. Late outgoing summer visitors included Wheatear on 1st, Garden Warblers till 14th, Redstarts till 8th, Swallow till 27th and House Martin on 31st. Great Skuas were offshore on 3rd and 14th and 60 Gannets on 25th. Great Grey Shrikes featured on 5th, between 9th and 11th and again on 14th/15th. Further Little Gulls passed through on 3rd and 25th when 6 Lapland Buntings arrived. Crossbills were noted on 5th and 15th and 15 Shorelarks on 24th when 4 parties totalling 70 Long-tailed Tits and 20 Bearded Tits were seen. The 26th saw the arrival of 100 Goldcrests; the majority moved on next day. A Hen Harrier returned on 29th when 3 Siskins, 30 Snow Buntings, 2 Stonechats, 2 Short-eared Owls and 3 Hooded Crows were present.

Another Firecrest was noteworthy on November 3rd with a late Blackcap on 6th and 2 Little Gulls next day; a Hen Harrier remained in the area all month. 6 Waxwings were new on 11th. Next day 4 Whoopers bound for Snettisham passed through. 14 Bewick's came in from the sea on 20th. 280 Pink-footed Geese arrived on 17th and 4 Waxwings were in the village on 20th.

December was quiet apart from Woodlark on 12th and Red-necked Grebe on 27th. 10 Bearded Tits, 20 Shorelarks, 100 Brent Geese and 2 Short-eared Owls stayed all month.

A total of 1,706 birds of 63 species was ringed by Holme Bird Observatory in 1971. The grand ringing total since 1962 is of 16,336 birds of 124 species. Among those ringed in 1971 were 2 Little Terns, 5 Swifts, 3 Wrynecks, 93 Blue, 20 Coal, 14 Willow, 75 Long-tailed and 3 Bearded Tits, Barred Warbler, 2 Firecrests, 40 Pied Flycatchers, 4 Kingfishers, 6 Grasshopper, 170 Reed and 120 Sedge Warblers, 65 Blackcaps, 2 Wood Warblers, 68 Goldcrests and 28 Bullfinches.

Snettisham Pits Wildfowl Refuge

R.S.P.B.

Warden: R. Berry

January was an interesting month, the Snow Bunting flock reaching a maximum of 122 on 7th and often feeding with a flock of Twites on the nearby saltings. Pink-footed Geese were regular at flight times reaching a maximum of 1,093 on 20th. Their feeding area for the greater part of the winter was in the Wolferton-

Wootton area, using Snettisham only for a short period in February. Good numbers of wildfowl frequented the Reserve, despite mainly mild conditions. Maximum January numbers were 61 Pochard, 57 Tufted and 42 Goldeneye on 19th, 31 Mergansers on 7th and 41 Scaup on 16th. Very few Scaup used the Reserve, although over 200 were present near the Inner Roads channel throughout January and 285 were counted on 16th. Two Whooper Swans remained on the Reserve throughout the winter until March 15th and became quite tame. Two Bewick's Swans came in on 4th and 12 on 6th; all left during the evening of the 6th. Another party of 4 Bewick's arrived on 16th. Between 150 and 200 Coot wintered with up to 162 Little Grebes. Other interesting January species included Chiff-chaff on 2nd, Hen Harrier and Sparrowhawk.

By early February 176 Snow Buntings were on the Reserve. On 15th a Sparrowhawk killed a Snow Bunting, beheaded it and plucked it on the beach. Next day it repeated the performance by killing another Snow Bunting, taking it to the nearby saltings and plucking it. On the 17th, the Sparrowhawk was seen again, but this time it missed its kill after dashing low across a shingle ridge into the feeding Snow Bunting flock which scattered.

On February 6th 216 Scoters were off the Reserve (undoubtedly the birds that winter off Heacham, but rarely come close inshore). By 20th the Pinkfeet population had dropped to 581, spending most of their time near the Reserve at Snettisham. Four purple Sandpipers and a female Smew brought the month to a close.

March 1st produced the first Bewick's Swans on spring passage. Eleven came on 3rd, departing next day. On the evening of the 4th, 20 came in from the S.W. and 7 more joined them on 9th. Four new birds arrived on 12th bringing the total to 31. All left March 13th. The wintering Whooper Swans became restless at this time and left during the night of the 15th. By March 17th only 31 Pinkfeet remained, also 17 Snow Buntings and the first 2 Garganey. On 31st Hen Harrier, 10 Bearded Tits, Spotted Redshank and 2 Snow Buntings were all noted.

Chiff-chaffs and Wheatears arrived April 1st/2nd. A late Bewick's Swan stayed from 3rd until 12th. Purple Sandpipers were recorded on 3rd and 6th and on 14th the first Sandwich Terns and Common Terns appeared. By 20th, all the common spring migrants had been recorded, including Little Ringed Plover, Greenshank and 59 Fieldfares on 21st. Between 20th and 28th, 283 Yellow Wagtails passed through the Reserve, also several White Wagtails. 8 Black Terns were new on 24th with 7 on 25th.

A Hoopoe spent three days in early May on the Reserve. Little Ringed Plover passed through on 5th and next day 168 Turtle Doves, 5 Whinchats, 6 Black Terns, 4 Whimbrel, Marsh Harrier, 10 Common Sandpipers, Swifts and 2 Black Terns were recorded. Sanderling reached a spring maximum of 744 on 25th. Between May 12th-18th a tame male Red-headed Bunting was in the area, followed by a Rose-coloured Starling that remained on the Reserve for several hours on June 2nd before moving north towards Heacham with Starlings. Twelve pairs of Ringed Plover bred on the Reserve also 31 pairs of Common Terns, but no young were reared. One pair of Oystercatchers bred. Two pairs of Short-eared Owls bred in the area, one was flooded out during incubation, but the other hatched six young rearing five. One of these was found dead at Wolferton September 2nd. Other interesting visitors during June included Montagu's Harrier on 9th and 22nd and Avocet on 12th and 26th. On the morning of June 20th 1,395 Lapwings passed through heading S.W.

Autumn migration was under way by July 20th when the Sanderling population numbered over 400. During that evening 219 Shelduck left the Wash at Wolferton in small groups. On the morning of the 21st, 392 Sanderlings were recorded, increasing to 850 by evening. Next day 21 Little Terns were present and Sanderling numbered 923, peaking at 1,518 on 27th. Spotted Redshank, Whimbrel and Greenshank were regular features; also Little Ringed Plover on 21st and 28th, 8 Black Terns on 30th and 23 Greenshank on 31st.

August 2nd brought 200 Sandwich Terns to the Reserve, also a male Montagu's Harrier, 36 Greenshank, Wood Sandpiper and 2 Black Terns, followed by Little Ringed Plover, 9 Curlew Sandpipers, 4 Little Stints and 8 Arctic Skuas on 4th. 12 Spotted Redshank came into the gravel pits on August 10th to roost. Arctic Skuas were regular features throughout August, also a single Spotted Redshank and another Little Ringed Plover on 16th.

September opened with a male Montagu's Harrier and Little Ringed Plover. A Wryneck was new on 15th, followed by Hobby on 16th, and Snow Bunting on 26th. By this date over 50 Little Grebes had arrived together with Pochard and Tufted.

Two Shore Larks were noted on October 7th and Merlin and Siskin on 9th. October 18th brought 3 Little Gulls with Red-necked Grebe on 20th, 2 Richard's Pipits, 3 Snow Buntings and another Shorelark the following day. 3 Bewick's Swans arrived on 23rd also 13 Scaup and 5 Mergansers. Gt Grey Shrike and Stonechat were noted 26th and next day Rough-legged Buzzard, Stonechat, and Sparrowhawk. The 29th brought 2 Great Grey Shrikes, 28 Bearded Tits and 4 Bewick's which remained several hours; 7 more Bewick's, including 3 juveniles, came in on 30th. The 31st saw the first 15 Pink-footed Geese at Wolferton and during the early hours of the morning more Bewick's were heard passing over. Another Shorelark was recorded.

November began with Hen Harrier, 2 Siskins and a passage of several hundred Fieldfares, followed by another Great Grey Shrike on 5th. The 7th produced the first large-scale migration of Fieldfares this autumn, with over 15,000 passing during the morning. A late Wheatear appeared next day. On the morning of 10th a family of 3 young Whoopers arrived accompanied by an adult male. (This adult was identified as the bird which spent the 1970-71 winter here; it was sad that the pen did not return.) Also recorded that day were Red-necked Phalarope, Merlin and 3 Shorelarks, followed on 11th by 8 Waxwings and Hen Harrier.

A Pomarine Skua remained from November 14th to 19th. 2 more Whoopers came in on 15th but soon departed. November 17th brought a Red-necked Grebe with 2 Waxwings and 7 Brent Geese next day. On 20th 7 Waxwings passed through, also a Purple Sandpiper. On the 21st after gale-force winds all day, the wind increased to storm gusts northerly. This gale wrecked havoc on the Wash shellfish and starfish. The gull population soon discovered this food supply and between 20,000 and 50,000 gulls fed on them for several weeks. Waders were also attracted to this unexpected food supply, notably Oystercatchers, Redshank, Turnstone and even Knot in hundreds. Other November arrivals included 4 Waxwings on 21st and a single on 22nd with Hen Harrier on 26th. By the month-end Pink-feet numbered 223 with 127 Little Grebes.

On December 1st Sparrowhawk and Stonechat were noted, followed by Little Auk on 3rd and 16 Eiders on 4th. Another Waxwing, 3 Shorelarks and Hen Harrier came on 5th. 476 Pink-feet were recorded December 6th increasing to 678 by 11th. Hen Harriers were noted on eight occasions during December and

up to 70 Snow Buntings had assembled. A Storm Petrel was new on 10th also juvenile Bewick's Swan which stayed several days in company with the Whoopers. 8 Bewick's arrived on 19th, 3 on 21st and 4 at the month-end. Diving ducks increased and 19 Mergansers were recorded on 30th, also Goosander and 28 Scaup. Tufted, Pochard and Goldeneye totalled between 150 and 200. By the 31st just over 1,000 Pink-feet were at Wolferton.

During the year 960 birds of 31 species were caught for ringing. Among the more interesting were 33 Wigeon, 76 Snow Buntings, 26 Bearded Tits, 257 Redshank, 23 Grey Plovers and 91 Ringed Plovers.

Walsey Hills, Salthouse

This Ringing Station was manned by the Norfolk Ornithologists Association for a month in the spring and for three months in the autumn. 2,088 birds of 59 species were ringed and selected recoveries appear elsewhere in this Report.

Among species ringed were kingfishers, wryneck, lesser spotted woodpecker, 29 great tits, 128 blue tits, 13 willow tits, 127 long-tailed tits, 4 bearded tits, 8 tree creepers, 88 wrens, 104 song thrushes, ring ouzel, 222 blackbirds, nightingale, 48 robins, 71 reed warblers, 100 blackcaps, barred warbler, 36 garden warblers, 28 lesser whitethroats, 93 goldcrests, 240 hedg sparrows, grey wagtail, 107 bullfinches, 73 yellowhammers and 35 tree sparrows.

Selected Ringing Recoveries

At a first glance there may not appear to be so many remarkable recoveries for 1971. However, a closer look will reveal several examples where ringing and recovery have taken place as birds were on the move: Wigeon to the Netherlands, Great Tit in the reverse direction, Sand Martin from Malta and Starling to Denmark, Long-tailed Tit across Norfolk and Goldcrest into Lincs., Chiffchaff to Kent, each within a matter of days.

It will also be noticed that many movements have come to light when ringers within the British Isles and abroad have controlled birds already carrying rings: the 18 Knot from the Wash to Iceland, Swallow to South Africa, all the listed Sand Martins, the Great Tit and Bearded Tits, the Goldcrests and the Chiffchaff.

The species that takes the limelight this year is the Sanderling, and the recoveries in the following list should be read in conjunction with the articles by C. D. T. Minton and by R. Berry in the 1969 and 1970 Norfolk Bird Reports respectively.

As in the past, some reports relating to 1970 and earlier years are included; these come in the main from the *Wash Wader Ringing Group Report* for 1970, and from "Recoveries in Great Britain and Ireland of birds ringed abroad" published in *British Birds*.

Fulmar

The first Icelandic Fulmar to be found in Britain.

Storhofdi, Vestmannaeyjar, Iceland, Mundesley (dead), 24.6.70
3.4.65

Cormorant

Farne Is., (pullus), 11.8.67 Burgh Castle (dead), 21.1.71

Heron

Wide movement throughout England, the furthest being to Sussex (2), Warwicks and Yorks. The latter indicates the non-return of the bird to its birthplace the following season.

Ranworth Broad (pullus), 31.5.70 Skipton, Yorks. (dead), 1.5.71

Mallard

Foreign recoveries in 1971 were from the usual localities, and all outside the breeding season.

Teal

British ringed Teal are regularly found in S. France, but reports from elsewhere in S. Europe are less normal. There were others from N. France, Denmark and Wales.

Dersingham, 5.9.68 Santander, Spain (shot), 10.1.71
Dersingham, 4.11.69 Marano Lagoon, Venezia, Italy,
22.11.70

Gadwall

There are not many recoveries of the species on record.

Aznalcázar, Sevilla, Spain (juv.), R. Ouse (killed), 24.1.70
25.6.68

Dersingham, 30.7.67 Buckler's Hard, Hants. (shot),
23.12.70

Wigeon

Although the first recovery is far into Russia, it does not indicate the breeding area of the bird. The others represent speedy movements after ringing.

Snettisham, 27.2.70 Voroshilovgrad, Ukraine S.S.R.,
18.10.71

Snettisham, 5.1.71 Noord Holland, Netherlands,
15.1.71

Snettisham, 5.1.71 R. Seine, France, early 1971

Shelduck

Cantley (pullus), 26.7.70 King's Lynn (injured, destroyed),
20.7.71

Cantley (pullus), 26.7.70 Friedrichskoog, N. Germany,
5.9.71

Barnacle Goose

Most Barnacle Geese found in the Netherlands are from Novaya Zemlya; British wintering birds are from Spitzbergen and Greenland.

Oppenhuizen, Netherlands, Horsey (dead), 26.12.70
23.2.66

Coot

Westeinderplassen, Netherlands Holkham (dead), 28.1.70
(pullus), 20.6.69

Vig, Jutland, Denmark, 10.5.70 South Walsham (shot), 30.1.71

Oystercatcher

Ringed birds from the Wash moved to Norway (11 – all between the end of March and early August), to the Netherlands (3), Denmark (1), and France (1). There were other movements within the British Isles including: Snettisham, 24.7.67 Lerwick, Shetland (dead), 4.6.70

Ringed Plover

Wisbech S.F., 29.8.64 Bardsea, Lancs, (control) 29.5.71

Turnstone

Uusikaupunki, Turku ja Pori, Heacham (control), 9.5.70

Finland (pullus), 1.7.66

Snettisham, 15.9.69 Aldingham, Lancs. (control),
4.10.70

Redshank

A high proportion of Wash Redshank are of the Icelandic race, but these are the first recoveries giving proof. The Spanish bird was probably a continental one, and other breeding season recoveries come from Belgium and Aberdeen.

Wolferton, 1.8.69 Reykjavik, Iceland (dead), 20.6.70
Snettisham, 3.9.67 Vorsabaer, Arnessysla, Iceland
(dead), August 1970

Snettisham, 12.2.71 Akureyri, Iceland, 16.5.71

Terrington, 10.8.68 Betanzos, La Coruna, Spain (shot),
27.12.70

Knot

Numerous foreign and other recoveries relate to birds ringed on the Wash in both spring and autumn. 18 from the Norfolk section of the Wash were handled again by a British expedition to Iceland in May 1970. It now seems likely that the bulk of our population originates in Greenland, and not in Siberia as was thought previously.

Dunlin

Many Dunlin ringed on the east shores of the Wash were recovered at home and abroad in usual localities. There was one from Africa.

Terrington, 11.8.68 El Jadida, Morocco (dead), 27.1.70

Sanderling

Increased ringing has led to much new knowledge of the species. Among others mentioned in full is a belated recovery of a Norwegian bird. Space prevents others from N. France (1) and Cheshire (2) being listed.

Snettisham, 13.7.68 Safi, Morocco (dead), 5.5.70

Snettisham, 13.7.68 Laredo, Santander, Spain, 3.12.70

Snettisham, 31.7.69 Casablanca, Morocco (shot), 3.3.70

Heacham, 13.4.68 1. Snettisham, 31.7.69

2. Heacham, 25.4.70

3. Cape Orlov, Murmansk
U.S.S.R. (killed), 19.6.70

Heacham, 17.5.69 El Aiun, Spanish W. Africa,
22.5.70

Heacham, 28.9.69 1. Thornham, 19.9.70

2. Algeciras, Cadiz, Spain (taken),
27.11.70

Revtangen, Norway, 19.9.66 Gt. Yarmouth (dead), 10.1.67

Common Gull

Rackheath, 3.11.66 Hjermitselev, Jutland, Denmark
(shot), 20.8.71

Black-headed Gull

Among recoveries here of this species are single birds from Denmark, the Netherlands and Belgium. Apart from the undermentioned, all foreign recoveries were from Denmark between June and October.

Attlebridge, 29.10.67

Riga, Latvian S.S.R., 26.6.71

Buxton, 4.1.70

Sharkovshchina, Belorussia
S.S.R., 10.8.71

Common Tern

Insel Scharhorn, N. Germany,
17.6.60

Heacham, 18.8.70

Guillemot

Heligoland, Germany (pullus),
10.7.66

Bacton (dead), 31.1.69

Woodpigeon

Bassevelde, Belgium, 24.11.66

Kirby Cane, 12.8.71

Swallow

Boughton, (juv.), 17.7.71

Aldermansville, S. Africa (control),
22.11.71

Sand Martin

The foreign recoveries again suggest a more easterly return route to this country in spring. In addition to those listed, 5 (from Norwich 2, Bawburgh, Sparham and Aldeby 1 each) were controlled at Richard Toll, Senegal, W. Africa between 9.2.71 and 19.2.71. (see Norfolk B.R. 1969 for earlier recoveries in the same area.)

Bawburgh, 15.7.70

Ain Temouchent, Oran, Algeria
(trapped), 8.5.71

Xaghra, Gozo, Malta, 10.4.71

Boughton (control), 27.4.71

Bressolles, Allier, France, 27.7.70

Bawburgh, 31.5.71

Lyng, 28.6.68

Le Clos Buet, Vendee, France,
7.9.71

Great Tit

Proof that some of the coastal tit movement was from the continent.
Westenschouven, Netherlands, 21.10.71

Salthouse, 29.10.71

Long-tailed Tit

Another notable movement of this sedentary species.

Salthouse, 24.10.71

Gt. Yarmouth (hit window),
29.10.71

Bearded Tit

Ringed birds caught at Cantley in January and February 1971, and at Catfield in March 1971 had all been ringed the previous autumn at Minsmere or Walberswick in Suffolk.

Fieldfare

The one foreign recovery is much further north than earlier ones we have had.

Snettisham, 19.10.67

Tromso, Norway, 19.6.71

Song Thrush

Holme, 17.9.69

Bazas, Gironde, France (killed),
10.3.71

Caistor St. Edmunds, 2.5.70

Billesley, Birmingham (remains
found), 14.2.71



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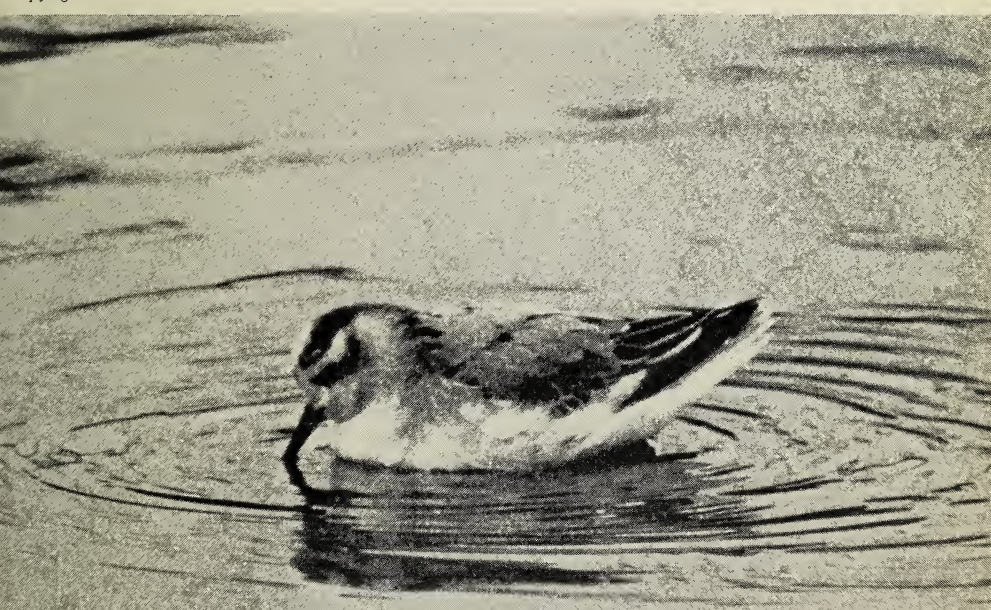
R. P. Bagnall-Oakeley

Above: Exciting arrivals June 5th included this Dotterel on Salthouse Heath, Bluethroat on Cley East Bank and Woodchat at Wells.

Below: This Grey Phalarope from Iceland or Greenland created great interest at Coltishall aerodrome on November 2nd. It spent the afternoon feeding on a static watertank.

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Red-necked Phalaropes are regular autumn passage migrants to Norfolk. Most favoured localities include Cley/Salthouse marshes and Wisbech sewage farm; with less regular occurrences at such sites as Cantley, Barton Broad, Snettisham and Lang Mere. 1965 and 1967 were outstanding years with a total each autumn of six birds.



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R. Jones

Red-backed Shrikes continue nesting in north Norfolk and in Breckland. In 1971 a county total of 15 pairs was recorded. There is a very small scale passage along the coast during August and September; latest occurrence is October 12th.



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Among 1971 vagrants was this Baird's Sandpiper (*above*) from North America which remained at Cley from September 16th until October 10th and a Nutcracker (*below*) from Siberia at Cringleford October 28th.

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Redwing

Salthouse, 14.10.70
Mintlyn, King's Lynn, 24.10.71

Santander, N. Spain, 27.12.70
Saint-Loubes, Gironde, France,
6.12.71

Boughton, 6.11.69

Poitier, France (dead), late 1971

Blackbird

Autumn- or winter-ringed birds were reported from the Netherlands, Denmark, Norway and Finland during April, and others came from Germany and N. France in the winter months.

Blackcap

An individual taking the easterly route.

Holme, 16.10.70

Telese, Benevento, Italy, 29.11.70

Chiffchaff

Boughton, 4.9.71

Dungeness, Kent (control), 28.9.71

Goldcrest

This species has one of the lowest recovery rates, but increased ringing means an increased chance of controls.

Cliffe, Kent, 18.10.69

Holme (control), 7.4.71

Holme, 7.4.71

Andberby Creek, Lincs., (control),
18.4.71

Duncock

Few individuals move far, but some do show a migratory tendency.

Gibraltar Point, Lincs., 16.9.71

Holme (control), 26.10.71

Fleam Dyke, Cambs., 18.10.70

Holme (dead), 3.5.71

Starling

Movements between Norfolk and Finland and the U.S.S.R. were recorded in 1971 as well as the following.

Leziate, 21.2.71

N. Sea, 30 miles off Esbjerg,
Denmark, (on fogbound ship),
9.3.71

Greenfinch

Leziate, 11.2.71

Hornsea Mere, Yorks. (control),
16.9.71

Linnet

Landes, S. France, 24.10.70

Boughton (control), 2.5.71

Redpoll

Three birds ringed at Leziate, near King's Lynn, were taken in Belgium during the hunting season, 1st October to 15th November 1971.

Chaffinch

Brecht, Antwerpen, Belgium
16.10.68

Leziate (control), 16.1.71

Brambling

Success over the past few years at ringing the Brambling is bringing many more recoveries. Note the breeding season control in Sweden.

Mintlyn, 28.12.69

Bilthoven, Utrecht, Netherlands
(traffic), 7.1.71

Mintlyn, 31.1.71

Ammarnas, Vasterbotten, Sweden,
30.6.71

Mintlyn, 24.1.71

Wakefield, Yorks. (control), 28.2.71
Norwich (dead), 11.2.71

Vinkenbaan, Vlieland,
Netherlands, 19.10.69

Klippan, Skane, Sweden, 3.3.70

Croxton, Thetford (traffic), 14.2.71

WASH WADER RECOVERIES

The following summary of recoveries and controls has been extracted from the 1970 annual report of The Wash Wader Ringing Group. Details of some of these recoveries have been published in earlier issues of the *Norfolk Bird Report*. The first column lists birds ringed on The Wash and subsequently recovered abroad; the second column is of birds recovered on The Wash.

Features covering the distribution of waders on The Wash have appeared in the 1969 and 1970 Reports.

	Greenland	Iceland/Faeroes	Norway	Sweden	Finland	U.S.S.R.	Poland	Denmark	Germany	Netherlands	Belgium	France	Spain	Portugal	Italy/Sardinia	Tunisia	Morocco	Spanish W. Africa	Senegal	Liberia	Ghana
Oystercatcher	..	1:0	32:11	0:1		1:0				4:3		11:0					1:0				
Lapwing	..					2:0							2:0				1:0				
Ringed Plover	..					1:0			0:2			3:0	1:0				1:0				
Grey Plover	..					1:0		4:0				4:0					1:0				
Golden Plover	..	0:1	1:0					1:0	0:1	0:2											
Turnstone	..	1:0	0:2		1:2							2:0									
Snipe..	..				0:1	1:0						7:0	4:0	4:0	1:0						
Curlew	..			0:4	2:18	2:0		3:1		0:3	0:3	1:0	1:0	1:0							
Common Sandpiper	..	0:2																			
Redshank	..	4:0						1:0			1:0	9:0	1:0	1:0			1:0				
Knot	..		0:13	0:3			2:0	5:0	1:2	0:2	1:0	8:3	1:0						4:0	1:0	
Dunlin	..	19:4	0:43	34:127	5:18	3:4	4:9	12:16	5:18	1:3	0:1	42:1	4:0	11:0			3:0				
Curlew Sandpiper	..					1:0										1:0					
Sanderling	..		0:1			1:0			1:0			1:0	2:0	1:0			3:0	1:0			1:0
Ruff	..					3:0	1:0					1:0	1:0	1:0	5:0		1:0				

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Norfolk Mammal Report 1971



EDITORIAL

The Editor is pleased to present to members of the Norfolk Naturalists Trust and the Norfolk & Norwich Naturalists Society the eighteenth annual report on the mammals of Norfolk. All species occurring during the year are detailed in the classified notes, but several items are worthy of special comment.

Perhaps the most spectacular event was the dramatic increase in Grey Squirrels, as shown on the maps. They are now to be found in ones and twos over much of the south of Norfolk. The Ministry of Agriculture, Fisheries and Food conducted a special survey of both Red and Grey Squirrels and our records contributed to the survey. The Ministry allowed us to use their data and we are grateful to Arthur Woodhams for assistance. Thanks are also due to Maurice Gosling at the Coypu Laboratory. The Seals Research Unit was again very helpful with estimates of Seal numbers on the Norfolk coast.

Acknowledgements are due to Bob Stebbings for help with Bats; Paul Cobb for extensive notes from Blakeney Point and for collecting observations from the Heacham naturalists; Dennis Avon, Tony Tilford and Eastern Counties Newspapers for photographs and John Last for vignettes. Typing was mainly in the hands of Annette Chatten, but Pam Warminger, Norma Watt and Susan Riches all assisted. To more than a hundred contributors we extend gratitude and trust all will submit notes for the 1972 Report. These notes should be sent to John Goldsmith, Castle Museum, Norwich, NOR 65B **by the end of February.**

This year's feature article is by Vincent Weir and Dr. R. Banister on the food of Otters, a subject on which little local quantitative information was available. Obviously lack of food in polluted rivers could have been a cause of the recent decline, but this study shows the importance of Sticklebacks and Eels in north Norfolk Otter diet. In the next Report we hope to include a history of the introduction and spread of the Coypu in this region.

As has been the custom for several years, two sets of mammal road deaths, each from a five-mile stretch of road are tabulated below. RHH covered the A47 between Gt. Yarmouth and the "Stracey Arms" while RPM examined two stretches of unclassified road to the south of Norwich from January to October inclusive. One often reads estimated sets of figures compiled from inadequate data. It is of interest here to extrapolate the two mammalian road casualty totals on the county's 4,000 miles of road and find it must be in excess of a staggering 130,000 per annum!

ROAD CASUALTIES TABLE

	"Stracey Arms"	"Red Lion"
Hedgehog	5	6
Common Shrew	—	5
Mole	—	7
Pipistrelle Bat	—	2
Long-eared Bat	—	1
Natterer's Bat	—	1
Rabbit	4	71
Hare	38	—
Bank Vole	—	1
Field Vole	—	7
Wood Mouse	—	8
Brown Rat	74	39
Coypu	1	—
Weasel	—	4
Stoat	7	1
Domestic Cat	1	—
Totals	130	153

From the largest mammal recorded during the year – a Lesser Rorqual Whale washed ashore at Horsey – down the scale to our smallest mammals, enthusiastic observers have been sufficiently fascinated to observe and record in detail. Small mammals however continue to be the most neglected group for distribution studies. Only three substantial trapping sessions (using Longworth small mammal traps, which catch animals alive so they may be released) were reported. At Wheatfen 250 trap/days were made during April (JGG and JB); at Hardley Flood 100 trap/days in December (JGG, JB, CRG and MED) and Longworths were set near Feltwell from July to December (MJW). These traps may be borrowed by prior arrangement from the Natural History Department at Norwich Castle Museum for any serious investigations on condition that the results are made available, and lost traps replaced.

All small mammal notes and sample carcasses for identification are welcomed by the Natural History staff who will gladly offer practical help with mammal studies. New contributors are always welcome even with single interesting observations.



Classified notes

INSECTIVORA

Hedgehog (*Erinaceus europaeus*)

The general impression given by observers this year is one of a further, if slight, increase. The mild winter encouraged more unseasonal activity, the earliest dates sent in were Jan. 27th and Feb. 16th. The more general appearance from hibernation was during the second and third weeks of March, when 5 were found in one gibbet and road casualties began to appear. One observer sent in 40 dated road casualty records each with a grid reference, between May 3rd and October 11th.

Two hazards to garden hedgehogs were noted during the year – firstly tennis nets and secondly garden ponds with smooth sides. Hedgehogs can swim well, but when entering a pond with steep smooth sides they are unable to get out again and drown if not quickly discovered. Some large stones or a branch at the side alleviates this problem.

An interesting and surely unusual case of a hedgehog attacking and eating poultry chicks came from Heacham, where on May 31st one tunnelled into a pen and ate one Bantam chick and killed another. Trouble continued until June 11th, when the culprit was caught and identified.

At Foxley an adult came nightly to share supper with 7 cats while one Norwich householder records that he has been feeding hedgehogs in his garden for over 20 years. Although records from gardens are frequent, we have no sightings of litters at all. Especially required for next year's Report are all records of litters of hedgehogs (giving date and place) so we may gain an idea of the average number contained in a litter and the times they are born. Details may be of either nest contents, of family parties seen, or embryo counts.

End of the year activity ended during the first week of December in the editor's garden, but was recorded up to the 15th at Thorpe St. Andrew and a dead one was found on the road at Beetley on 23rd.

Mole (*Talpa europaea*)

"About an average year", sums up the mole population in the county during the year. In a few areas a slight decrease was noted, but in others they were all too frequent for gardeners. A quantity of correspondence in the "E.D.P." concerned cats catching moles, but usually not eating them. While one correspondent thought that cats could be taught to catch them, in many cases it was instinctive, and up to 17 were caught by a single cat in a year.

A few road casualties were reported, and the 5 mile stretch of road at Caistor St. Edmunds produced 7 during the ten months it was covered. Three strings of moles were reported with 3 at Hunstanton in October, 64 at Welney in December and 458 at Kelling in April. There is apparently a strong belief by mole catchers in the county that mole activity is centred around the chime hours of 4, 8 and 12 o'clock. Studies made in the Norfolk Breckland and elsewhere in the 1950's showed that moles were almost continuously active for regular periods of 4½ hours, with periods of 3½ hours asleep in the nest. This rather confirms the generally held opinion that moles travel to and from their nests in a 4-hour cycle.

Two colour variants were noted: the first was trapped at Upton on March 18th and was an unusual orange/yellow colour. The other, cream in colour, was dug out alive and accidentally lost again, near Welney on December 15th.

The distribution map for moles is now almost complete. In recent years moles have been seen in every square except TF 90, 50, 51, TG 12, TM 49, and TL 68 (see squirrel maps in this Report for location of squares), hence reports from these areas would be especially welcome.

Common Shrew (*Sorex araneus*)

A few observers reported that there were fewer this year, and one observer at Taverham noted that the cat brought in no shrews at all during the year. How general this decrease was it is difficult to say, as Barn Owl pellets still had approximately similar numbers (20-30%) as in previous years and several people reported seeing odd ones, while the road casualties showed 5 killed during 1971.

On Blakeney Point singles were seen during later summer two or three times. Dead ones were found at Hardley Floods, and on July 24th one was squashed on a pine forest track at Didlington. The only Longworth trapping to produce this species was near Feltwell, where 27 animals (11.5%) were caught in mixed woodland.

On May 31st in a lane near Morley a Common Shrew was seen to run across the road chased by a male House Sparrow about a foot behind and above with a great deal of flapping.

Pigmy Shrew (*Sorex minutus*)

Several reports of this, our smallest mammal have all helped to fill the distribution maps. On the north coast one was living in the kitchen of a house at Blakeney for several weeks in April, one was seen at Salthouse on June 30th, one at Holme, while a fourth was found dead at Overy Staithe on August 28th. The only new inland localities were of 16 skulls recovered out of Barn Owl pellets at East Ruston, and 15 (6.4%) trapped in Longworths at Feltwell.

Water Shrew (*Neomys fodiens*)

Barn Owl pellets from East Ruston collected on 10th October produced 3 Water Shrew skulls (1.2%) – the only record for this species for the year. An additional 1970 record came from Blickling where 9 skulls were recovered from pellets.

CHIROPTERA

Pipistrelle (*Pipistrellus pipistrellus*)

The first dated sighting was on March 13th, and many pipistrelles were on the move on suitable evenings from the end of the month. Activity continued well into November and the occasionally recorded late autumn day-time activity was observed at How Hill on Nov. 2nd.

The usual infestation of buildings began again in July when the adult females from an area congregated prior to giving birth to their single young. On July 1st a colony of over 40 was found at Swardeston; on the 6th a small colony in a house roof at Thorpe; on the 9th a "large colony" at Thurne and another at Caister-on-Sea, with a fifth reported at Narborough, later in the year.

Most unfortunate of the infestations are those occurring in churches. The numbers inhabiting them are often substantial, but they continue to have a difficult time in the hands of those to whom the buildings are entrusted. May we repeat what has often been said that the mass extermination of hundreds of bats with their helpless young within church buildings is a wanton and needless act of vandalism. Specialist advice is now available to those who request it to help deal with the problem.

Occasionally large groups of bats are observed hunting over a specific area where one presumes a mass hatch of suitable insect food is available. Such a happening was observed in car headlights over a field at Cley on Aug. 29th, where many must have been juveniles, and not so skilled at insect catching, therefore maximising an available food source. One attempt at catching low-flying bats over water was made at Colney in August when 8 were caught, all proving to be pipistrelle. This, along with other evidence recently collected strongly suggests that bats flying low over water are pipistrelle and not Daubenton's as published books lead us to believe.

Long-Eared Bat (*Plecotus auritus*)

Reported at quite a few localities again and in all probability our second most common bat. An examination by R. E. Stebbings of all locally collected material from the past, and ones being found now show a wide range of measurements including some of the largest specimens known. In view of this, it is thought that the recently discovered *Plecotus austriacus* or Grey long-eared bat will not occur in this county, as the Common long-eared bat ranges in size more, so as to fill the available ecological niche that the Grey long-eared would have filled.

An early long-eared bat was seen at Felbrigg Hall on Feb. 5th sunning itself on the roof, while a small colony of 6 male and 3 females were roosting in a house roof at Narborough. A skull of one recovered from a Mousehold Heath Tawny Owl pellet was thought to be over 10 years old (RES). October records included one killed on the road at Poringland on 10th and one dead on a Cromer lawn on 23rd.

A gravid female was picked up dead on another lawn at Ketteringham on June 19th, while the only hibernating record was of a single with up to 7 Daubenton and 3 Natterer's near Attlebridge, at the close of the year.

Daubenton's Bat (*Myotis daubenton*)

Strenuous efforts were made by several conservation work-parties to re-open the Eaton Chalk Caves during the year. This old chalk working which was accidentally filled in 1968 was probably the best known winter roost of Daubenton's bats in the county and is said by some to have contained up to 30 hibernating together in the days when there was no disturbance. It is hoped the task will be completed in 1972 and the entrance grilled over to provide a safe sanctuary for hibernating Daubenton's again.

Only two localities were found for this species in 1971. At a re-discovered winter roosting site near Attlebridge up to 7 were present showing a preponderance of females, and on Sept. 17th a live one was found in a roof at Narborough.

Whiskered Bat (*Myotis mystacinus*)

Grimes Graves has been one of the few sites at which this species has occurred since its discovery there in 1947 when it was an addition to the county fauna.

J.G.G. in company with R.E.S. visited the site on March 25th and produced a report for the Directorate of Ancient Monuments, giving the history of bats in the old chalk workings and their special importance to wintering bats. In view of the coming closure of the "public pit" as it is no longer safe, it was felt that steps ought to be taken to improve the site for bats. On the day the pits were visited all accessible holes were searched in the public pit, and a single Whiskered was found in flight and another possible 3 were seen but could not be approached closely enough for positive identification. In the closed pit a further 2 were found, one of these long dead. It is hoped a sympathetic outlook can be extended to this site for its bats.

Natterer's Bat (*Myotis nattereri*)

Two locations have been reported for this species during 1971. The winter roost referred to under Daubenton's bat contained up to 3, all of which were males, while a road casualty at Caistor St. Edmunds on October 11th was almost certainly the same small bat which had been observed flying up and down that stretch of country lane at dusk a week earlier.

Noctule Bat (*Nyctalus noctua*)

An indication of the period when Noctules emerge from hibernation was obtained this year. On May 1st a female was picked up dead at Cley with no apparent injury, but was considered to have recently come out of hibernation. At Watton another female was hanging on the outside of a brick building on the same day; it was still there three days later when it was collected and identified. It was found to have a badly torn wing which rendered it flightless.

The roost in an old Woodpecker hole at Stoke Holy Cross first discovered in 1968 was occupied by at least one Noctule on July 1st. At Ludham an ash tree, first seen to be occupied by Noctules last year, had over 30 inhabiting it again, while a second group was found living within 100 yards of the first, in a crack in a large branch.

A single Noctule was again seen on July 2nd at Saxthorpe Mill, the usual time for them to be observed there, and 2 were chasing each other along the sandhills at Waxham on Sept. 11th. A remarkable congregation of over 40 was hunting high over Hardley Flood on May 8th.

The Editor is always pleased to examine any bats found dead or alive.

LAGOMORPHA

Rabbit (*Oryctologus cuniculus*)

Undoubtedly the increase in numbers has continued in 1971, though several places reported low numbers at the beginning of the year. Breeding began early, after a mild winter, and young were seen above ground at Merton on March 28th, an Earlham allotment on April 4th, and Roydon Common on April 7th. Peak numbers of young occurred in July again as road casualty figures from south of Norwich show:

JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
3	5	3	3	1	9	23	9	6	9

Dated myxomatosis sightings when plotted, show a brief peak in April – mainly from the north coast and Breck areas while the main peak starts in August reaches its point in the second half of September and fades out in December.

Colour variants included a white individual at East Carleton on October 25th in the same area where a pair of albino pheasants had been seen the previous week. Black ones were noted at Whitlingham in August and 2 "black or very dark" together in a group of 7, "five minutes out of Norwich Thorpe Station on the London line".

Hare (*Lepus europaeus*)

With the exception of Hickling all areas reported a decrease. In the centre of the County this has been noted as specially severe over the last 2 years, while in others the decrease is more recent and attributed to a variety of causes. At Blakeney numbers were increasing slightly and 23 were shot on two shoots. In trying to assess Hare population trends it would be extremely useful to have comparative numbers from shooting estates around the county.

"Mad March" Hares were not much in evidence, but the three observed instances of "boxing" were spread over 4 months. On February 27th seven were scattered in 3 large fields near Attleborough, and 2 of these were seen to start boxing for a short time. On April 5th at Great Snoring two chased each other before boxing in an arable field, and were then joined by a third before all three tore off across the field at a tremendous pace. The latest date was 7th May when "March Hares" were performing near Salthouse, a pair crashing through the bushes within a couple of yards of the observer.

The boundary between Field Dalling and Binham – a dyke about 8 feet across – was jumped by a Hare from a standing start. It has been previously noted that a Hare will jump into a dyke and swim while trying to escape man or dogs.

A pure white Hare was seen on several occasions in fields near Bixley during the early part of the year. A white Hare moving across a field at dusk proved a strange spectacle to the observers!

Hares have been reported on saltings in several places, sometimes even freely running through shallow sea-water and getting quite wet. At Blakeney they were apparently grazing the *Spartina* grass quite heavily in places. (PRC).

RODENTIA

Bank Vole (*Clethrionomys glareolus*)

The impression gained from the year's records is one of Bank Vole abundance, at least in more wooded areas. At Wheatfen it was the most abundant small mammal with 65 out of a total of 75 mammals captured in April. At Feltwell too it was abundant with 81 out of a total of 233 animals caught. At Hardley 9 were captured out of 19 animals and it was particularly noted here that on a transect through the wood, small mammals were absent in the areas devoid of a "herb layer" of vegetation. At Mulbarton on May 3rd bank straightening operations revealed a nest with both parents and 4 young.

Much more county distributional work needs to be carried out on this and many other small mammals.

Short-Tailed Field Vole (*Microtus agrestis*)

Numbers were generally thought to be building up again with the four yearly cycle of abundance and decline. The last autumn with good numbers of voles on the marshlands was 1968, so 1972 should again see a peak. On Breydon marshes numbers were thought to be low, and the wet July and early August may not have helped. At Scarning Fen numbers were high in the autumn when a Kestrel

appeared to be preying on them and one was found as Kestrel prey at Hilgay on June 3rd.

Evidence of breeding well into autumn came from East Wretham Heath where a youngster with a body length of under $1\frac{1}{2}$ in. was caught alive when running across the track, on October 24th.

Water Vole (*Arvicola amphibius*)

There were rather fewer records of the Water Vole this year though no general decrease in numbers has been noted. They were present at Stanford, Happisburgh, Caistor St. Edmunds and Heacham. Black-coloured ones were specifically mentioned at Cley, Stiffkey marshes and around Watton. The most interesting set of Water Vole notes came from Corpusty where a family of 9 invaded the garden. Two of these including one adult were largely brown, but with a fairly well defined band of black guard hairs down the back. Four had the black area extended down the sides turning to brown at a fairly sharp line giving a general appearance of being all black. The remaining 3 were almost all black, only the undersides being brownish white. All were caught and released further downstream during the period May 23rd to June 20th, but not until they had cleared about 15 feet of stream of all its plants which included *Caltha palustris*, *Glyceria maxima variegata*, *Iris pseudoacorus* and what appeared to be their favourite, *Ligularia clivorum*, the large leaves of which were felled then dragged to the edge of the water for consumption. Observations such as these on any of our mammals, giving some very useful ecological observations, are always welcome.

Wood Mouse (*Apodemus sylvaticus*)

The most abundant, cosmopolitan small mammal in the county. It was described as very plentiful to frequent in almost every report. Longworth trapping at Wheatfen produced only 8 (but 65 Bank Voles), at Hardley 10 were trapped (with 9 Bank Voles) while the Feltwell results showed 68 (and 81 Bank Voles). A Taverham cat brought in about 60% Wood Mice during January, but by the end of the year the proportion had risen to over 90%. In a Corpusty garden they were very common and lived on crocus corms – while supplies lasted!

At Blakeney Point during June there were large numbers of small mammals – almost certainly this species – judging by tracks all over the dunes. Chewed Brazil nuts were found under driftwood in the ternery, and since they were probably washed up, might have been carried 50 yards before being eaten. With a little more study of sand-dunes around our coast, we shall probably find that *Apodemus* is the most frequent small mammal and that voles are virtually absent.

At Kelling again this year, 2 quarter bars of soap were eaten from a caravan in January and the mice also helped themselves to stored peanuts and feathers from pillows for their nests. At this site on July 10th a mouse was seen to climb a 3 feet high fir tree five or six times to get at peanuts in a feeding tray and carry them individually to heather at ground level before consuming them.

Harvest Mouse (*Micromys minutus*)

Fewer reports than last year, but some new localities were found. It is still quite common in the Hickling area, while observations at King's Lynn showed it to be locally quite common and at Happisburgh it is seen annually, though the species is not common there. Three specimens were recovered from Barn Owl pellets at East Ruston; on the north coast dead specimens were found at Holme-next-sea and Holkham.

House Mouse (*Mus musculus*)

The somewhat patchy, sporadic House Mice distribution pattern was apparent again in the year's observations. They were present at Norwich, Loddon, Happisburgh, East Ruston and Wells, but at Watton none has been seen for two years by one observer.

At Foxley there is a resident population of many hundreds due, it is thought, to local cats being too well fed! Here, in December, a bag of oats resting on top of two other filled bags was moved resulting in at least 30 House Mice leaving in great haste.

At Corpusty a sudden influx was noted after several years of scarcity. These multiplied and have been eating Warfarin with apparent relish, even chewing through the bags to get at it. Fortunately House Mice are rarely a serious pest problem nowadays.

Brown Rat (*Rattus norvegicus*)

Numbers appear to have been lower in 1971 than in the previous year, which pleased most people. Barn Owl pellet analysis indicated smaller numbers than usual and more than one observer wondered if Foxes as well as poison could be responsible. Rubbish tips, including the site on the south Breydon marshes, again provided an easy living for large numbers. The Acle New Road death toll shows no real decline compared with the previous year, but the figures from the ordinary arable area show a 44% decrease.

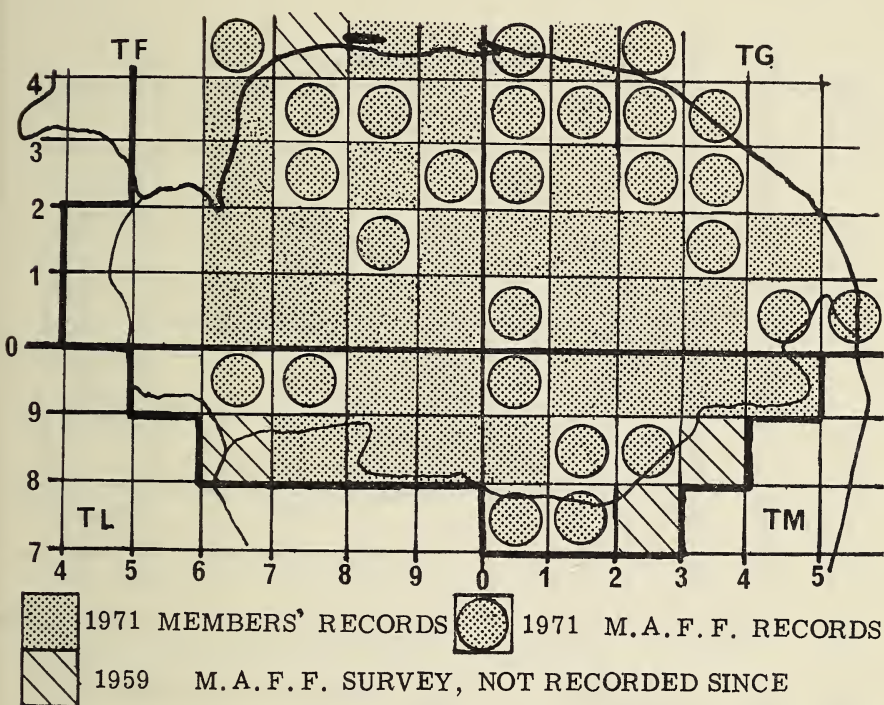
At Scolt Head Brown Rats were absent from mid-April until early September; on Blakeney Point a few were dealt with in the winter and tracks of one were noted July 29th.

Only a single colour variant was reported. At East Harling a half-grown albino was found amongst many poisoned Rats around farm buildings in June.

Red Squirrel (*Sciurus vulgaris*)

Again this year well over 100 individual sightings of our delightful Red Squirrel have been reported, from which the distribution map has been drawn. The maps show how widespread the Red Squirrel is with us, inhabiting many small deciduous woods and belts of trees. Only in the Hickling Broad region is it absent, there being few suitable woods in that area. There are however 4 ten kilometer squares where the red has either been overlooked or has actually disappeared since the Ministry of Agriculture, Fisheries and Food made their last survey in 1959. We are grateful to them for allowing us to use their recorded distribution which has been added to the information submitted from other sources. We trust they are accurate, but would however, be pleased to hear from readers with recent records in TF 74, TL 68, TM 27 and 38.

There was a large-scale reduction in numbers early in the year by "red squirrel disease". It is tentatively suggested that the sudden dramatic increase in grey squirrels might be correlated with the increase in incidence of diseased reds. Perhaps the grey is a "carrier" of the disease managing to transmit it to the red population, without being affected itself. Much more needs to be discovered about the Red Squirrel disease and it is requested that any recent dead or dying squirrels should be sent to Dr. I. F. Keymer (c/o Zoological Society of London, Regents Park, N.W.1) or the editor contacted without delay.



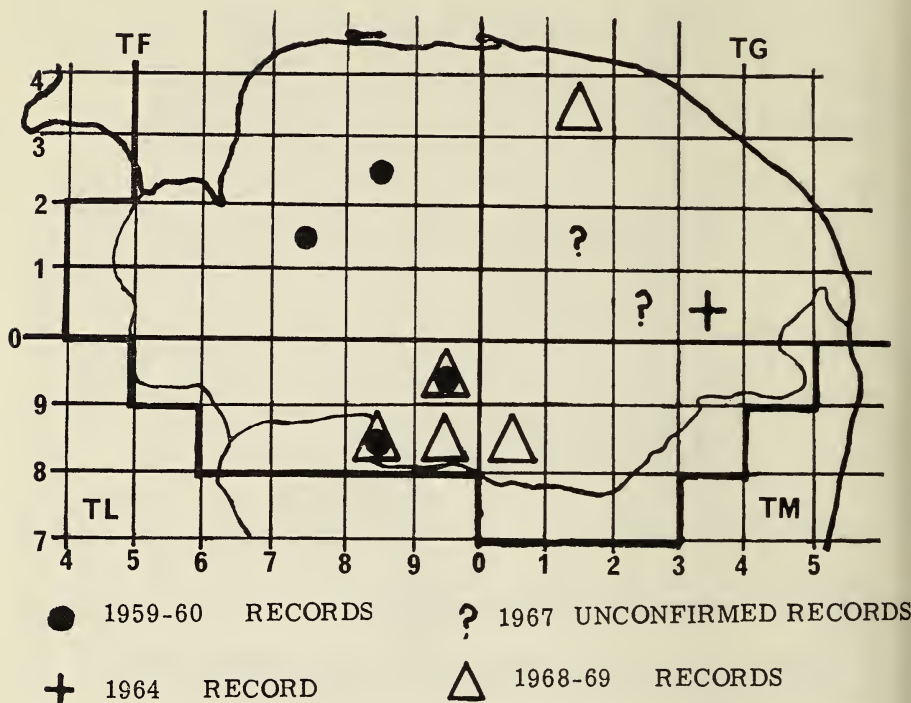
Animals were found in an emaciated condition alive but only able to shuffle along, being apparently blind; many died on the ground, being unable to climb trees. Diseased animals slowly crossing roads were killed in small numbers while the risk of predator taking them on the ground is obviously greater. There was no peak of diseased specimens in any particular month, but it was interesting that in almost every case whenever disease was reported within an "isolated" population, a grey squirrel was reported nearby either shortly before or afterwards. Part of the red population which inhabits Ashwellthorpe wood visited a nearby garden for food until July when numbers were depleted from 7 to 2 by disease. At Gayton 2 were picked up in October/November; 3 near East Harling in February; 1 at Stanford in January and another at Santon Downham in April, with a further 3 in spring at Kelling.

Many reports of garden feeding were received again and most observers seem to have had disease-free animals. Of particular note was one in a Stoke Holy Cross garden which spent an enormous amount of time collecting and burying hazel nuts during September and early October.

Lastly an unusual sighting of a Red Squirrel in the middle of Norwich which freely took to water. It was near Duke's Bridge at about midday on June 16th that the squirrel was seen progressing through some small trees beside the river. It eventually worked its way onto a branch overhanging the river and did a "high-board dive" with feet spread out, landing in the river. After hitting the

1959-1969

NORFOLK GREY SQUIRREL DISTRIBUTION



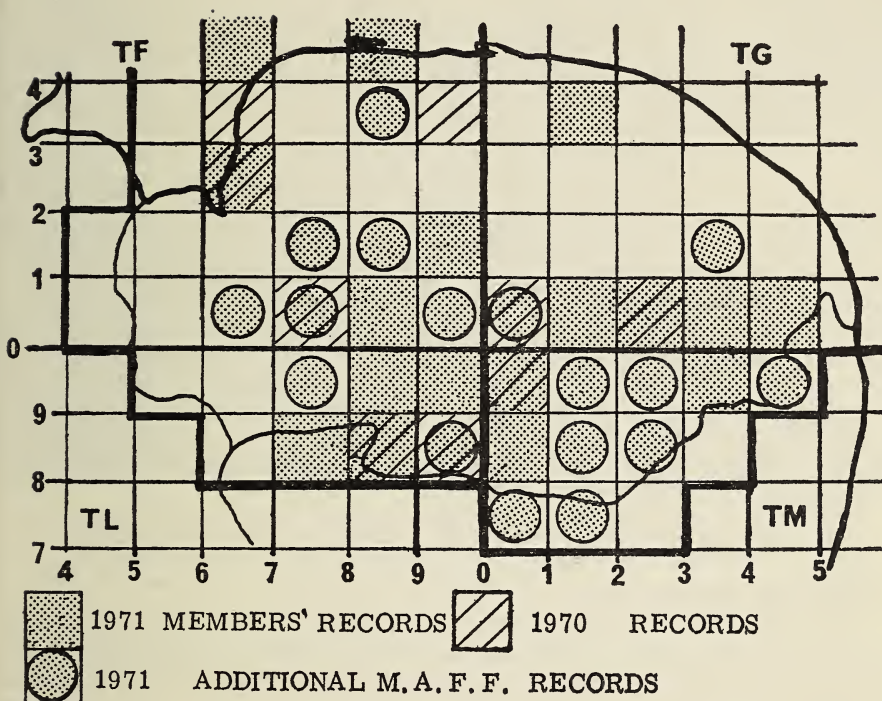
water it began jerkily swimming the remaining 20 feet to the other bank using front and back legs simultaneously, with tail held erect out of the water. On reaching the other side it ran away out of sight of the observer.

Any reports of similar incidents would be most welcome, as would any further observations on diseased squirrels.

Grey Squirrel (*Sciurus carolineusis*)

The 10 kilometer square maps below show infiltration of this destructive animal during the period 1959-69, and its subsequent large-scale spread over much of the south of the county. In the first map the records were infrequent and scattered, many of the animals being singles and frequently shot. By 1968/69 the triangles show the records obtained which are also the chief centres of the breeding population. When looking at the second map it should be appreciated that some squares which have stippling, have only a single record. Again on this map, as for the Red Squirrel Map, Ministry distribution is shown as additional to the records sent to the editor. The Grey Squirrel is now to be found in all but 4 English counties and throughout Wales.

Of the 18 dated live sightings all but four came in the Jan.-March and Sept.-Dec. period suggesting that they remain well hidden and do not move much during the summer. A female killed on the road near Hargham on March 31st was already pregnant. In this area it has been noted that they are frequent



casualties on the railway line. Many were trapped and shot by Breckland Keepers during the year.

Records in the Norwich area have included one in Earlham Park and another on allotments nearby in Sept. and Nov., while others have been reported from the Newmarket Road area. Perhaps the most remarkable observation is of one which turned up in a marshman's cottage garden near Reedham at the end of the year, nearly a mile from the nearest trees and probably having had to swim several stretches of water to reach the site.

Further sightings are still required so that the increase can be documented.

Coypu (*Myocastor coypus*)

The Ministry kindly furnished full details of all Coypu kills in the East Suffolk and Norfolk River Board area. These total 2,099, about double last year's figure. Localities where up to a hundred were killed during the year were Cley, Hickling, Ludham and Surlingham. A reminder of the kind of agricultural food these animals will turn to and cause damage comes from near Feltwell where stomach contents of a December road casualty included sugar beet and carrot.

Undoubtedly part of the cause of numerical increase has been recent mild winters allowing breeding to be continuous without cold-weather losses. Half grown specimens were seen in December at Hardley and near Breydon, while a dog caught and killed a six week old Coypu at Cley on Dec. 3rd.

There have been some experiments with poisoning Coypu as a means of controlling numbers in place of current trapping methods. It is felt by some that widespread use of poison could have serious effects on wildlife locally. Water Voles might be killed while the danger of poisoned Water Voles and Coypu being eaten by Stoats, Weasels, Foxes, Otters, Barn Owls, Water Rails, Marsh Harriers and Bitterns cannot be ruled out as all have been recorded preying on these two aquatic mammals at times. Members' comments would be welcomed, and we hope any more poisoning plans will be laid with great caution.

ARTIODACTYLA

Red Deer (*Cervus elephas*)

Numbers in the Norfolk Brecklands appeared constant again this year, with the most frequently reported site being Great Hockham. They are now spread from the Brecks through the woodland south of Swaffham towards King's Lynn, with reports this year from Tottenhill, Wimbotsham, Hillington, Shouldham and lastly Beachamwell where two hinds and a stag in velvet were seen on March 14th.

There has been increase in the number of wandering Red Deer outside the main areas. On September 26th one was near Brundall, while on May 9th in the late afternoon four crossed the road near Honingham. These are probably the same group which at least three observers subsequently reported on several occasions in the Attlebridge, Taverham and Felthorpe area.

Several were observed in car headlights, while the animals were crossing the road, but fortunately few accidents have been caused by wild deer here.

Fallow Deer (*Dama dama*)

Reports of odd ones in the Horsford area and some in Swanton Novers Woods (being escapes from the Melton Constable herd) constitute the only records from the eastern half of the county. In the west the herd of white Fallow at Houghton Park is still thriving and observations in the South Wootton, Castle Rising, Sandringham, Hillington and Grimston area suggests that there are many more Fallow here than had previously been realised: one observer estimated 200, although the largest group seen together was 15. A single buck also appeared in Old Hunstanton Park on June 28th. More observations in this area, with perhaps some estimate of numbers would be interesting.

Roe Deer (*Capreolus capreolus*)

As abundant as ever in the Breckland forests, though not often seen in daylight, unless flushed from cover. Odd ones occurred outside the usual areas and two were at Sandringham on July 31st. Several instances of grazing winter wheat with animals well out in the open before dusk have been reported, but on the whole damage is slight and numbers are controlled in the Breck forests to an acceptable level.

Chinese Muntjac (*Muntiacus reevesi*)

There is little doubt that the Chinese Water Deer and the Chinese Muntjac have been confused in this county in the past. Most small deer have previously been recorded under "Muntjac". Now, as observations increase and descriptions are submitted we can begin to separate records. Particularly helpful has been the saving of feet and the heads of dead animals from which an identification can be made.

Records come from South Wootton in mid-November, Hillington June 20th,



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Above: Daubenton's Bat is probably quite frequent in the county, but much more information on the distribution of this and all other species of bat is needed. Daubenton's hibernates in underground situations, but is not always associated with watery places.

Below: Red Squirrels suffered a decrease in numbers during the year owing to Red Squirrel virus. Many were found dead or dying, especially in Breckland.

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This 35-foot long Lesser Rorqual Whale was washed ashore north of Horsey Gap on July 16th. Three days earlier it had been spotted off the Lincolnshire coast, and had been dead for about a month. Smallburgh R.D.C. buried it on the beach where it was cast up.

Cranwich May 31st, Gt. Hockham in November and December and Drayton in October while several sightings in the Sparham and Billingford area may well be of this species.

Chinese Water Deer (*Hydropotes inermis*)

As suggested in previous reports this introduced species must now be a breeding resident, chiefly in the Broads area. It can produce between 3 and 6 young at a time usually during May or June, so it could spread and become common. Fortunately there is little chance of them causing damage since they seem to be living in dense reed-beds feeding chiefly by grazing low growing plants.

The small deer previously thought to be Muntjac at Hickling have now been established as Chinese Water Deer. They have been observed throughout the year mainly to the south of the broad. One unfortunate animal was killed on the road at Catfield on February 22nd, and one other sighting was made at Sutton where one was grazing in a reed-bed on March 30th (JW).

The single specimen reported at Cley in 1970 was still present having been seen on several occasions and its tracks found in mud.

CARNIVORA

Fox (*Vulpes vulpes*)

With over 40 individual reports of Foxes from almost all parts of the county, the population might be considered to be still expanding. The figure of 70 quoted in the 1969 Report has been challenged so we must perhaps look at this in the same light as "fishermen's tales".

On May 5th a dead Fox cub was found outside its earth at Swanton Morley. When the other 3 cubs emerged at dusk they tried to play with their dead brother; another 2 cubs were seen from the train near Wymondham on May 23rd. A family with 6 young was reported at St. Faiths and another litter of cubs was raised in Thursford Woods.

On five separate occasions a Fox was seen to emerge from what was thought to be an occupied Badger sett (AEV). The number of Foxes seen in car headlights as well as animals appearing as road casualties has increased. Strangest amongst these was one found dead in Cathedral Street, Norwich, on October 4th. This adult male had every appearance of having been hit by a car until it was skinned when it proved to have quite a lot of shot-gun pellets lodged in its front legs and head. Who could have brought it into the city and left it, and for what reason remains a mystery.

One observer was successful in keeping some Foxes under observation using a spot-light. In this way he has discovered that besides the more usual food that is taken, large moths are sometimes caught in flight.

Badger (*Meles meles*)

Very little new information has come to light since A. E. Vine's excellent article in the 1970 Report.

One sett near King's Lynn was reliably reported to be re-occupied, and an adult Badger crossing the railway line at Keswick near the end of the year indicates there is an occupied sett in the area. One sett which was formerly occupied in TG 02 disappeared after one animal was accidentally snared in 1968.

Small-scale re-introductions have been tried, but it is too early to know how successful these have been. Certainly a number of land-owners and game-keepers have expressed a willingness to have Badgers.

Otter (*Lutra lutra*)

Even fewer reports have been forthcoming than in 1970 which is obviously disturbing. Since the ten-kilometre square distribution of observations given in last year's Report appeared to receive general approval, this is repeated:

- TF 61 A road casualty on the A47, Aug. 16th, between King's Lynn and Middleton.
- TF 63 Spraints on the River Babingley, June 19th.
- TF 74 Tracks found at the Ternery on Scolt Head Island in March.
- TL 89 March 27th on the River Wissey in the "Battle Area" a fleeting glimpse was obtained of an Otter as it shot into the water from a sand-bank at the approach of the observer. Two miles away at Stanford Water on July 25th one obligingly spent ten minutes duck-watching, playing and eventually scrambling out of the water to scratch on a platform of reeds.
- TL 98 Present during the year. The Eastern Counties Otterhounds paid a visit in August.
- TG 01 Probably present in this area.
- TG 04 Tracks and spraints frequent, animals more rarely seen, but bred successfully.
- TG 11 Present and presumed breeding, also seen in the Wensum quite near Norwich on June 9th. At least one land-owner in this area wishes to afford the Otters on his land protection but his wish has been disregarded by the Otter hunters.
- TG 31 Present during the year.
- TG 32 Seen not infrequently in parts of this square with footprint evidence in August.
- TG 42 The Horsey Otters were definitely about all year but there was again no proof of breeding. On Hickling there were a number of sightings and it was considered that they had increased.

Newspaper pictures of the Eastern Counties Otterhounds provoked another round of "letters to the Editor" objecting to the hunting of otters (E.D.P., 16th Sept. 1971). Certainly the land-owner in TG 11 ought to be allowed to protect his Otters as he wishes. It would be pleasant to be able to report in future years that riparian land owners, who feel they have any affinities with nature conservation, have afforded complete protection to the now rare Otter and to be able to say that the Eastern Counties Otterhounds have respected their wishes.

Studies of insecticide residues in Otters are being undertaken in an attempt to correlate Otter decline with these poisonous substances. All dead Otters are urgently needed and any corpses should be notified to the Editor or direct to Monkswood Experimental Station, Abbots Ripton, Huntingdon. A national Otter survey is being launched in 1973 to monitor and evaluate the alarming decline in Britain and volunteers are required for field observations.

Stoat (*Mustela erminea*)

Only 19 localities were noted for Stoats during the year, which is a drop in numbers of records. In the Brecklands however an increase was noted and here 12 stoats appeared on one gibbet by the end of June, while at Rushford 123 were accounted for in a single year. At East Wretham a family of 7 was seen during the summer.

On Scolt Head 2 were destroyed after preying mainly on the nests of Black-headed Gulls. At Blakeney 2 were dealt with during the winter and on May 7th one was playing amongst Skylarks near the Lifeboat House and a further individual was living in the higher dunes, but not entering the ternery.

Weasel (*Mustela nivalis*)

Increases were noted again in Breckland and at Happisburgh; most areas reported that numbers were steady, though one observer felt they had declined in his part of central Norfolk. Many localities were noted.

At Wheatfen on March 15th a Weasel carrying a freshly killed Long-tailed Field Mouse was surprised on the drive. It dropped its prey and ran to cover in a grassy ditch-bank. When all was quiet again it returned to retrieve the still warm prey.

Two instances of Weasels fighting were noted. The first was on the Lynn by-pass in early April amongst the morning rush hour traffic, while another two were engaged in a fight at Beetley on December 29th.

Several observers mentioned Weasels in their gardens. One at Blakeney in April was hunting Sparrows in and out of the roof tiles of a cottage; a Stoke Holy Cross specimen was hunted and killed by a cat on October 24th.

There were more road casualties noted than gibbeted animals and these were chiefly during the period March to June.

Mink (*Mustela vison*)

No reports of Mink during 1971, so fears that it might colonise the county are allayed for another year.

Ferret (*Putorius furio*)

Although no escaped Polecat/Ferrets were recorded in 1970, this year has produced two. On June 4th one was found dead on the A11 where it crosses Bridgeham Heath and an animal resembling a Ferret was found on a gibbet at Hunstanton in October.

Common Seal (*Phoca vitulina*)

1971 was the first year in which the Common Seal had any legal protection, the "Conservation of Seals Bill 1970" giving a close season from June 1st to August 31st. 5 licences were issued by the Home Office to hunters operating in The Wash where the N.E.R.C. Seals Division estimate there might be up to 5,000 Common Seals which would be the largest colony of this species in Europe. 75 pups were to be taken by each hunter for their pelts, under licence. Only 4 hunters in fact operated, and the total number taken was 300 during the July 12th-22nd period. Another tagging programme was carried out by the Seals Research Division in late June and early July. By a calculation involving the numbers tagged and the numbers later shot, an estimated total of 1,900 pups was born in 1971.

Seals continue to thrive on Blakeney Point and numbers were higher than in previous years, the resident herd numbering about 85-110, though one high count of 215 on August 14th included pups and probably a number disturbed from the Wash. That pups will move from the Wash along the North Coast was proved this year with the recovery of number 20846 on July 27th freshly dead on The Point. It had been tagged July 3rd at Long Sands. Although the exact number of pups born at Blakeney is not known 20 were counted August 18th.

*Grey Seal
and Pup*



The North Coast attracted attention in the late summer and autumn by the number of dead and dying seals washed up. At the end of August four wounded ones were found at Sheringham, 2 more with shot gun wounds on September 12th near Cley and another on December 22nd on Morston Saltings. Obviously these casualties are not the result of pelt hunters' activities.

On Scroby Sands numbers remained at about 200+ as in 1970. Further sand continues to build up – leaving a small area completely dry on most tides which probably improved the breeding success; between 20–30 pups were born. The colony in the summer is a holiday attraction and regular trips are run by Yarmouth fishermen. However, they still tend to grumble a little about the adverse effect the seals have on their livelihood!

One Common Seal spent a week or so in the river Yare during November being seen near the Haven Bridge devouring a small flat fish. On the 21st it reached Breydon Water.

Grey Seal (*Halichoerus grypus*)

The main concentration of Grey Seals in the county is on Scroby Sands where up to 100 can be seen at times. At least a dozen pups were born there, though counting them during the late November/early December pupping period is not easy. Numbers on the sands are often less in the summer – on June 7th a count of 10 was made, but by September 9th there were 47. The first pup was washed ashore at Yarmouth November 19th, another appeared on December 2nd and a third on about 16th was eventually persuaded to leave by being flown back to sea in a helicopter! One pup was actually born on Hopton beach about December 11th; at the same time on Scroby Sands there were three new born pups, one about two weeks' old and a fifth one swimming in the sea beside its mother.

On Dogshead Sands in The Wash live another small colony of 20 to 30, but they apparently do not breed there. All other records refer to ones and twos both dead and alive at many places along the remainder of the coastline.

CETACEA

Only 4 animals reported again this year, and one suspects some winter specimens may be overlooked and not reported. All records of strandings are needed with details, also any sea sightings even if the species is not definitely known.

Porpoise (*Phocaena phocaena*)

On February 7th a dead young one was washed ashore at Winterton and on September 3rd at Cley 2 were swimming westward. These are the only records received.

Lesser Rorqual (*Balaenoptera acutorostrata*)

The 35-foot long whale washed up at Horsey on July 16th caused quite a stir. Several hundred people must have visited this Lesser Rorqual in the first few days it was on the beach, inspecting it from a safe distance as it had been dead for perhaps a month. The creature had been seen on the 14th off the Lincolnshire coast near the Dudgeon Lightship and the next day five miles south of the Haisbro' Lightship, eventually being washed ashore and mis-reported as a "white" whale, from its pale colouration. It was buried on the beach by Smallburgh R.D.C.; each local council being responsible for the hygienic disposal of any dead cetaceans stranded in their area.

The last positive Norfolk Lesser Rorqual washed ashore was in May 1959, though there was an unconfirmed report in 1962.

THE FOOD OF THE

OTTER

IN THE BLAKENEY AREA



Vincent Weir and K. E. Banister

SINCE the beginning of 1969 a study has been made of the life of the Otters inhabiting the coastal strip between the Salthouse Marshes and the Stiffkey River, Norfolk, though the majority of the observations have been made on Salthouse and Cley Marshes and the Glaven River. These notes describe what we have been able to discover about the food of the Otters in this region during the years 1969 and 1970.

Methods

Information has been gained by recording remains of Otter meals found on regular visits to the area during the day, by observing the animals while they were feeding and by collecting spraints and analysing the food remains found therein.

It was noted by one of us (vw) that the Otters usually deposited their spraints on regular sprainting sites. Particularly favoured places were on the bank of a river or drain close to sluice gates at a spot where the animals habitually entered and left the water, and on or beside the Otter paths which run over the banks above these sluices, more often than not the highest point on the path being chosen. Other regular sites were at the end of land spits at the confluence of two drains, on certain tufts of grass close to well-trodden Otter routes through the marshes, and a few of the many small grass tussocks found along the edge of most of the drains in the area were singled out by the animals for continuous use. Occasionally grass or mud was scraped up into little piles by the Otters and spraint deposited on the top.

During 1969 spraints were collected each weekend, mostly from Salthouse and Cley Marshes. Four collections were also made during 1970, two in January and one each in February and March. We stress here that we would have liked to have employed this method over a much longer period, but there are definite indications that Otters use their spraints to communicate with one another.

We therefore felt obliged to confine the greater majority of the work in this area to one year only. The size of the weekly spraint collections was small at the start of our study but gradually increased as we became more knowledgeable about the movements of the Otters, but obviously some of the deposits were never found. A total of 1,200 single spraints was collected. The spraints were washed through a fine sieve and the residue analysed. The fish bones present were compared with material in the collections of the British Museum (Nat. Hist.) by one of us (KEB). Other material was identified by the appropriate authorities in the British Museum (Nat. Hist) to whom we should like to offer our grateful thanks.

Results

The majority of the results are expressed in tabular form below:

FOOD OCCURRENCE IN THE DIET OF THE OTTER THROUGHTOUT THE YEAR SHOWN BY SPAINT ANALYSIS

	1969 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	1970 JAN	FEB	MAR
STICKLEBACK															
EEL															
CYPRINID															
CRAWFISH															
PERCH															
MAMMALS															
TEAL															
MALLARD															
MOORHEN															
LITTLE GREBE															
DIVER															

As the year progressed it became apparent that one food item was predominant and that was the Three-spined Stickleback. This species was present in the spraints throughout the year and in many instances was easily the dominant food item. In two collections the entire contents of the spraints were attributable to this fish (April, 1969, March, 1970); the bones have a distinctive reticulate pattern and are not easily overlooked nor confused with any other fish remains likely to be found in the spraints. The Three-spined Stickleback is extremely common in the area under consideration and their shoaling habits make them easy prey for the Otters. One of us (vw) has several times observed the animals catching these fish on their journeys through the marshes.

The Common Eel formed a large proportion of the diet of the Otters especially during the summer months. They were not only a significant item of food but also a popular play-thing and young animals in particular enjoyed gambolling with them in the water before eventually eating them.

Remains of fish of the family Cyprinidae were found fairly regularly in the spraint collections but in small quantities. They were mainly present from January to July and then again from November until the end of the year. It was usually easy to identify the remains as Cyprinid but unless certain critical bones were present intact and not too digested the species could not be determined. Roach was the most common. Rudd was positively identified twice and on one occasion a Roach x Rudd hybrid was also found.

Fish of other families found in the spraints included Perch, identified on three occasions (January, October and November 1969), Trout once (February, 1969)

and a Marine Goby once (April, 1969). Four instances were recorded of Otters taking Pike from the road drain on Salthouse and Cley Marshes; in two of them the head and some scales of the fish were all that was left on the bank. In another, scales, a few bones and the lower jaw were found and in the fourth case only the rear half of the fish had been eaten. It was estimated that the Pike were between 12 in. and 18 in. in length. There were no physical signs of these fish having been caught by an angler.

The commonest Crustaceans encountered in the spraint collections were Crayfish which the Otters find in the Glaven River. Their remains were found from late June to mid November, a period which coincided with the absence of Cyprinids (see Table). Crayfish remains were also noticed in a few of the spraints in 1970 during the same period of the year. Freshwater Shrimps were identified in the spraints on one occasion (February, 1969) as were the remains of an Isopod (April, 1969), and evidence that Shore Crabs had been eaten was found on seven occasions while visiting the area during the day. Remains of other Arthropods were seen in four of the weekly collections during May and June. In two of these, Arthropods were present in some quantity but unfortunately were too broken up to be identified. In the others some remains of the beetle *Donacia clavipes* were found (June, 1969) and also a dragonfly larva (June, 1969).

The only indication of molluscs being taken were the remains of Water Snails in one collection of spraints (April, 1969) and the evidence for amphibians being eaten was confined to the remains of one Common Toad found on the marshes.

Mammal fur, bones and teeth were present in two of the weekly collections (April and May, 1969). In one of these we identified the remains of a Water Vole, a Short-tailed Vole, a Common Shrew and four limb bones which were possibly from a Harvest Mouse. In the second collection a single unidentified mammal tooth was found. Two partly eaten Brown Rats were found during the course of the study, but there was not enough evidence to be certain that Otters were responsible.

Birds, mostly Moorhens, were taken by the Otters at various times during the study period, but they did not form a large part of the animals' food in the area. Moorhen remains were found in fourteen of the spraint collections and two other lots contained a few small feathers which were probably from this species. In four other collections remains of the following birds were identified: 2 Mallard, a Teal, a Little Grebe and some feathers probably from a Diver. During the two-year period fifteen dead birds were found which without much doubt had been killed by Otters, six of these being Moorhens. The other species comprised: 2 Shelduck, one a duckling; 3 Mallard; a Teal; a Coot and 2 Black-headed Gulls, one of the latter known to have been injured. In the case of the Coot and one of the Mallard the head had been neatly bitten off but the bird not eaten. On another occasion the head of a Mallard was found in the area and in all probability an Otter had been responsible for this too. Likewise the Shelduck duckling had not been eaten but the head and one leg had been removed. Of the fresh kills found only the flesh from the breast and belly, mostly the former, had been consumed except in one case where most of the flesh had been eaten. The birds were otherwise mainly intact, Otters evidently not pulling their prey apart like Foxes do. All of the dead Moorhens except one were found during 1969 and it was probable that feathers from four of these birds had been found in the spraint collections. The Mallard and Teal corpses were not connected with the feathers of these species found in the spraints.

To our knowledge birds' eggs were not taken nor carrion eaten. A little grass and weed was often found in the spraint collections but was almost certainly swallowed incidentally while the Otters were eating other foods.

The results of this short study indicate that two species of fish, the Three-spined Stickleback and the Common Eel constitute the bulk of the Otters' diet in this area, with Sticklebacks comprising about 55% of the animals' food and Eels 25%. We estimate that a further 10% is made up from other fish species mostly Cyprinids. These percentages are estimates based on the volume of the material recovered from the spraints.

Discussion

When considering the diet of an animal in a given area the availability of food must be the vital factor influencing its choice. Although this study was based only on a two-year survey and the results must therefore be treated with caution, certain interesting phenomena are shown by the distribution, throughout the year, of the fish eaten by the Otters.

The numbers of Three-spined Sticklebacks taken by the animals is enormous. As already stated the Stickleback is extremely common in the area and is available to the Otters at all times of the year. Admittedly it takes many small Sticklebacks to equal the volume of a Roach but it certainly seems likely that the Otters seek out shoals of Sticklebacks and consume large quantities of them.

No Eel remains were found in the spraints from the start of our work until April, 1969. They were then present throughout the summer, and oddly enough were still found, although not as frequently as during the summer, in many of the collections of the winter of 1969/70. Bertin (1956), referring to France, states that cold inhibits the reflexes of Eels and that they are active only from about March to about November. During the winter Eels remain torpid and immobile in the mud. It is not easy to account for the absence of these fish in the spraints during the first quarter of 1969 and their presence the following year. We must remember here however that the amount of spraint collected during the early part of 1969 was less than that taken in the same period the following year. The winters were fairly similar except that there was a much colder period of about three weeks in February, 1969. Whether this made a difference or not cannot be decided. Otters have been observed (by vw) grubbing in the mud for Eels, so it is possible that unless the fish are buried deep in the mud they can be hunted out and eaten by the Otters even during the winter.

It is odd that if Otters search in the mud for Eels they do not eat the Flounders that are common in parts of the area under investigation including the main drain through Salthouse and Cley Marshes. The camouflage of Flounders is efficient when they are immobile but if disturbed by the Otters they would be conspicuous and could theoretically easily be caught. We are unable to suggest reasons why the Otters do not eat Flounders.

Trout are fairly common in the Glaven and Stiffkey Rivers yet only once were their bones found in the spraints. It is suggested here that Otters will concentrate on catching slower moving fish when readily available in preference to faster swimming species like the Trout.

Examination of the Table shows that during the summer Cyprinid fishes cease to be an important part of the Otters' diet and that Crayfish take their place. Two points should be noted in connection with this. The first, and more important, concerns the yearly cycle of the Crayfish. During the winter months Crayfish are relatively inactive. However, by July the young have hatched and

are about in large numbers and the adults too become very active during August and September especially at dusk and during the night, prior to copulation in October. After copulation, activity decreases rapidly. The second point is that the road drain through Salthouse and Cley Marshes where the Otters find the Cyprinids becomes heavily choked with various species of weed during July, August and September which may possibly deter the animals from using it. It was noted that signs of Otter activity on the banks of this drain were almost entirely lacking during August and September in both 1969 and 1970.

Marine fish are apparently only infrequently eaten within the study area. The only evidence we have are the remains of one Goby. The Otters have easy access to a comparatively unpopulated shore line but do not seem to take advantage of the food available. Fish such as Sprats, Dabs and the Flounders already mentioned are common in the Blakeney Harbour area, as are shoals of young clupeoid fishes (Whitebait). This region is travelled over fairly regularly by the Otters but we have no evidence to show that any of these fish are taken. Sticklebacks and particularly Eels are common in Blakeney Harbour and it is possible that some of the remains of these species found in the spraint collections could have come from fish caught in this area. Crabs too abound in this region and are probably eaten more frequently than the evidence we have would suggest. Only a few visits were made to these truly marine habitats and much more observation is required both during the day and the night to fill the gaps in our knowledge.

A large number of duck frequent the area and it is surprising that so few of them are killed by Otters. Many also nest and rear their young there, but there was no evidence to show that sitting females were taken nor that broods were attacked except for the duckling mentioned above. Likewise a Black-headed Gull colony on Salthouse Marsh was not molested by the animals. Signs of Otter activity were often noticed around the wire fence of a waterfowl collection at Salthouse and it is certain that if an Otter was intent on entering it could easily do so, but this has not been the case. There were no signs of the many unfenced duck resident on the road drain at Salthouse having been killed. It seems likely that more birds would be taken by the Otters during periods of prolonged cold weather and that pricked birds would be easy prey, though one or two of the latter were noticed in the area well after the shooting season had ended. One evening on Cley Marsh an Otter was watched by one of us (vw) chasing a pricked Mallard along a drain but it was soon realised that the animal was only playing with the bird and, after tormenting it for about 100 yards, the Otter grew tired of the game and swam off in the opposite direction. vw also observed the reaction of a number of ducks to the close proximity of an Otter. A certain pool measuring 100 yards x 60 yards on Cley Marsh is a popular resting place for duck, mainly Mallard, and over a period of a few weeks a single Otter was seen there in the evening on a number of occasions. Usually the animal was in the water for only a short time crossing from one side of the pool to the other at the start of its nightly travels but sometimes it would pause to dig about on the bottom probably looking for Eels. The duck showed little fear of it and only occasionally did any take to wing in fright. Normally the procedure was for the birds nearest to the Otter to swim slowly away from it, with their necks stretched up, watching the animal's progress across the pool, while the remainder of the duck seldom took any notice of it at all.

The Shrimps, Isopod, Water Snails, Beetles and the Dragonfly larva found

in the spraints are just as likely to have been the food of the Otters' prey as they are to have been adventitiously swallowed by the animals.

We hope to continue the study in this and other areas in an attempt to fill the many gaps that remain. Special attention will be paid to the Otters' littoral activities. Work will continue on the intriguing problem set by the presence or absence of Eels in the Otter's diet in winter. It is intended that water temperatures will be taken in an attempt to establish any correlation between this and the presence of Eel remains in the spraints.

Reference

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Norfolk Naturalists Trust Properties

Date Acquired		Acreage		Status*
On the Coast				
1926	Cley Marshes	435	Gift	S.S.S.I.†
1937	Duchess's Pightle, Burnham Overy ..	1	Gift	—
1937	Great and Little Eye, Salhouse ..	10	Purchased	S.S.S.I.
1945	East End of Scolt Island	76	Purchased	N.N.R.
1955	The Eye, Salhouse	21	Purchased	S.S.S.I.
1965	Holme	400	Purchased, Gift & Agreement	S.S.S.I.
1971	Salhouse Marshes	200	Agreement	S.S.S.I.
Broadland				
1928	Starch Grass, (Martham)	26	Purchased	S.S.S.I.
1930	Alderfen Broad	72	Purchased	S.S.S.I.
1945	Hickling Broad	816	Purchased	N.N.R.
and 1969				
1945	" "	500	Leased	N.N.R.
1945	Barton Broad	351	Half Gift &	S.S.S.I.
1952	" "		Half Purchased	S.S.S.I.
1948	Surlingham Broad	253	Purchased	S.S.S.I.
1949	Ranworth Broad	124	Gift	N.N.R.
1949	Cockshoot Broad	12	Gift	N.N.R.
1964	Firs Marsh, Burgh St .Peter ..	2½	Leased	—
1971	Martham Broad	103	Leased	S.S.S.I.
1972	Hardley Flood	80	Leased	—
1972	Chedgrave Common	10	Leased	—
Breckland				
1938	East Wretham Heath	362	Purchased & Gift	S.S.S.I.
1942	Weeting Heath	343	Gift	N.N.R.
1949	Thetford Heath	250	Gift	N.N.R.
Other Areas				
1957	Thursford Woods	25	Gift	—
1960	Hethel Old Thorn	½	Gift	—
1961	Scarning Fen	10½	Gift	S.S.S.I.
1962	Hockham Fen (Cranberry Rough) ..	20	Purchased	S.S.S.I.
1963	Roydon Common	140	Purchased	S.S.S.I.
1966	Stoke Ferry Fen	25	Agreement	S.S.S.I.
1968	Lenwade Water	37	Agreement	—
1968	Dickleburgh Pightle	1	Agreement	—
1972	Smallburgh Fen	19	Leased	S.S.S.I.
1972	Ringstead Downs	26	Agreement	S.S.S.I.

In addition, the Trust shares with the National Trust in the management of the coastal reserve at Blakeney Point (1,335 acres), and it manages Arnold's Marsh, Cley (29 acres) on behalf of the National Trust.

By agreement with the Nature Conservancy, Scolt Head Island, Ranworth Broad, Hickling Broad, and the Breckland Heaths now form part of the National Nature Reserves.

*Status: N.N.R. denotes National Nature Reserve
S.S.S.I. „ Site of Special Scientific Interest

†In 1966 Cley Reserve was established as a Bird Sanctuary under the Protection of Birds Act, 1954.

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