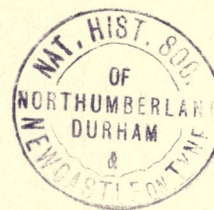


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TRANSVALE
 OF THE
 NATURAL HISTORY OF THE
 DISTRICT OF THE
 NORTHERN CAPE
 AND
 NEWCASTLE

BY
 GEORGE DICKSON

THE NATURAL HISTORY OF THE
 DISTRICT OF THE
 NORTHERN CAPE
 AND
 NEWCASTLE

TRANSACTIONS
OF THE
NATURAL HISTORY SOCIETY
OF
NORTHUMBERLAND, DURHAM
AND
NEWCASTLE UPON TYNE

Editor :
GRACE HICKLING

(New Series)

Vol. XIV

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NEWCASTLE UPON TYNE

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All statements of fact and expressions of opinion in the following papers are the sole responsibility of the authors and must in no way be taken to represent the opinions of the Natural History Society



MARSDEN ROCK, a breeding place of sea-birds near South Shields

Photograph by J. C. Coulson, B.Sc., Ph.D.

ORNITHOLOGICAL REPORT FOR NORTHUMBERLAND AND DURHAM FOR 1960

Compiled from the notes and records of members
of the Natural History Society of Northumberland,
Durham and Newcastle upon Tyne and of other
observers

by

J. C. COULSON, B.Sc., PH.D.

FOREWORD

In January, 1961, Mr. F. G. Grey decided, for personal reasons, that he was unable to continue as secretary of the ornithological section and compiler of the annual report and the sectional committee accepted his resignation with great regret. Much preliminary work had already been carried out on the record cards by Mrs. Lamb, but no one was available to write the actual report and the committee is, accordingly, most grateful to Dr. J. C. Coulson for his invaluable help in this emergency. Certain changes have been made in lay-out and it is hoped that some of these may stimulate increased observations. It must be stressed, however, that the basis of a good report is a collection of clear, carefully completed record cards. Unfortunately, many of the cards received are not of a high standard and it is hoped that the card reproduced in Fig. 1 (an actual card submitted by R. M. Palmer) will serve as a model for other observers.

Record cards, and any other information of ornithological interest, should be sent to Mrs. E. M. Lamb, Records Secretary, The Hancock Museum, Newcastle upon Tyne 2.

GRACE HICKLING.

ORNITHOLOGICAL COMMITTEE

C. M. Adamson (field secretary), J. Alder, E. L. Arnold, H. D. Briggs, J. C. Coulson, Miss C. Greenwell, R. G. Grey, J. Grierson, Mrs. G. Hickling (chairman), Mrs. E. M. Lamb (records and meetings secretary), J. D. Parrack, Hon. M. W. Ridley, I. M. Telfer, G. W. Temperley, A. M. Tynan, R. P. Winter, T. Winter.

INTRODUCTION

The names of the many observers who have contributed to this report are listed after the classified notes and the committee of the ornithological section is grateful for their co-operation. Wherever necessary, details of identification have been considered by this committee, which is responsible for the acceptance or rejection of records published. A detailed account of the birds of the Farne Islands is published in the Farne Islands ornithological report for 1960.

The classified notes are in the Wetmore order, as listed and numbered in the *Check-list of the birds of Great Britain and Ireland* published by the British Ornithologists' Union.

Regrettably, the committee has had to reject a number of records because the recorder has failed to give information relating to the characters observed, and used to make the identification. It is impossible for the committee to accept for publication a record of a rare species *unless full field notes are supplied*. It should be stressed that these rejections do not reflect upon the integrity of the observer—it should be the aim of every observer to collect enough information about a rare bird to convince other people. In addition, the field notes are intended to be a source of reference for future workers on that species, or to aid in the preparation of future works on the birds of the counties.

Occasionally, certain criteria which are accepted as diagnostic of a particular species are shown to be unreliable. Should this happen, then the description will be valuable in deciding whether such a record is still valid. A hundred years ago, it was the skin of the bird which was preserved, to-day a fully detailed field description should be kept.

MID-SEPTEMBER MIGRATION

A large influx of migrants took place on the coast of Northumberland and Durham on September 16th, 17th and 18th. F. G. Grey compiled a report on this movement on behalf of the Northumberland and Durham Natural History Society and the details given below draw extensively from this compilation, although the species list and numbers of individuals have been modified in the light of further information.

On September 16th the wind was S.E. rising to a strong breeze, on September 17th it was E.N.E. with low cloud and fog, and on the following day it was light, and fog cleared as the day progressed. By September 19th the wind had veered to S.S.W.

FIG. 1
MODEL RECORD CARD

DO NOT FOLD		
SPECIES. Wetmore No. <u>584</u>	Observer's Name <u>R. Marsdon Palmer</u> 1960	
STARLING	Address <u>7, Clark Terr, Stanley, Co. Durham</u>	
Return to The Natural History Society, Hancock Museum, Newcastle upon Tyne 2.		
Date	Place	Notes
Dec 31 st 1960.	near Sherburn-Village, Co. Durham	1960/61 winter roost : The very large Starling roost near Sherburn Village, D., was again occupied during the 1960/61 winter and on Dec. 31 st was estimated to consist of half-a-million/to one million birds. The roost consists of 15 acres of tall hawthorn bushes which are all full of Starlings. I first came across this roost in 1951 and at that time, (P.T.O.)

The local residents informed me that this roost had been in occupation for many years previously. (see O.R. for 1951, 1952, 1953; *The Vasculum* for July 1960; Tyneside Bird bulletin for Jan & May 1960.)

The first evidence of an influx came from the Bamburgh-Seahouses-Newton area where E. A. R. Ennion recorded three red-spotted bluethroats, small numbers of pied and spotted flycatchers, some garden-warblers, and fairly large numbers of redstarts during the morning of September 16th; siskins appeared early in the afternoon and by 1600 hours were very numerous. Despite several observers, no comparable influx was seen at St. Mary's Island, but numbers of birds arrived on the Yorkshire side of Teesmouth. Here, on the

THE NUMBERS OF MIGRANTS REPORTED AT VARIOUS PARTS OF THE
COAST OF NORTHUMBERLAND AND DURHAM ON SEPTEMBER 17TH

		Holy Island- Seahouses area	Tyne area (Blyth to Sunderland)	Teesmouth area (Crimdon Dene to North Gare)
Honey-buzzard	...	0	0	1
Marsh-harrier	...	0	1	0
Osprey	...	0	0	3
Kestrel	...	6	8	6
Peregrine	...	0	0	1
Little stint	...	130	9	200+
Wryneck	...	1	0	2
Redwing	...	0	5	0
Wheatear	...	—	300+	200+
Whinchat	...	—	30	57
Redstart	...	numerous	400+	230+
Bluethroat	...	0	5	9
Robin	...	—	250+	23
Sedge-warbler	...	0	3	0
Icterine/Melodious warbler	...	0	2	1 probable
Blackcap	...	a few	6	4
Barred-warbler	...	0	2	0
Garden-warbler	...	present	20	23
Whitethroat	...	0	20	20
Lesser whitethroat	...	0	10	2
Willow-warbler/ Chiffchaff	...	0	50+	100+
Wood-warbler	...	0	1	0
Spotted flycatcher	...	present	48	5
Pied flycatcher	...	present	150+	15
Red-breasted flycatcher	...	1	1	0
Meadow-pipit	...	0	many	many
Tree-pipit	...	present	common	2
Red-backed shrike	...	1	5	2
Siskin	...	many	300	40

evening of the 16th, P. J. Stead recorded a bluethroat, 30 redstarts, two whinchats, 20 wheatears, two song-thrushes, two spotted flycatchers, 20 willow-warblers or chiffchaffs, five garden-warblers, six tree-pipits and one robin.

On the following day, September 17th, birds were everywhere along the coast and J. D. Parrack reported an increase in numbers at St. Mary's Island as the morning progressed and similar observations were made by C. Watson at Seaton Sluice.

Estimates of the numbers of birds recorded on various parts of the coast on September 17th are shown in the Table. The intensity of this movement appears to have been less in the extreme north of Northumberland and A. Blackett reported only a small movement at Fenwick while J. P. Deacon made comparable observations on Holy Island. Birds were, however, numerous in the Seahouses area. Data from the Isle of May Bird Observatory will confirm or disprove this suggestion that the movement was not as intense to the north.

Reports of little stints have been included in the Table since exceptional numbers occurred at the time of this passage. Other waders may have taken part in this movement, but if they did so, it was probably in small numbers and was not distinguishable from the regular passage.

On September 18th, many birds were still present on the coast but, in general, the numbers had decreased considerably and very few remained after September 19th.

Further information concerning this movement has been published in *Bird Migration*, Vol. 1, No. 5.

BIRD-RINGING

Birds ringed in 1960 totalled 7,801, of which 6,354 were on the Farne Islands. This latter ringing is dealt with more fully elsewhere in these *Transactions*, but the details of the 66 species that make up the Society's total are as follows:—

Fulmar 10; cormorant 25; shag 267; eider 58; merlin 3; oystercatcher 2; lapwing 16; ringed plover 6; woodcock 1; curlew 4; lesser black-backed gull 300; kittiwake 1,228; common tern 303; arctic tern 2,120; roseate tern 89; Sandwich tern 1,654; razorbill 2; guillemot 164; puffin 180; stock dove 2; wood-pigeon 5; short-eared owl 2; swift 2; skylark 2; swallow 104; house-martin 14; sand-martin 2; carrion-crow 3; great tit 129; blue tit 120; coal-tit 48;

willow-tit 7; long-tailed tit 8; treecreeper 4; wren 3; dipper 72; mistle-thrush 1; song-thrush 30; redwing 92; blackbird 163; redstart 60; robin 17; sedge-warbler 1; blackcap 2; whitethroat 16; willow-warbler 40; wood-warbler 3; goldcrest 14; spotted flycatcher 11; pied flycatcher 74; dunnock 38; meadow-pipit 5; rock-pipit 10; pied wagtail 5; grey wagtail 8; great grey shrike 1; starling 72; greenfinch 31; linnet 75; lesser redpoll 2; bullfinch 9; chaffinch 27; yellowhammer 8; reed-bunting 9; house-sparrow 5; tree-sparrow 13.

During the year there have been 38 recoveries of birds ringed at places other than the Farne Islands. These comprised a kittiwake, a woodcock, six blackbirds (three found locally) and 22 starlings (ten found locally) in addition to local recoveries of a kestrel, house-martin, two blue tits, a song-thrush, a robin and two greenfinches. Details of birds recovered more than 10 miles from the place of ringing are given below. Local recoveries include a blackbird, three starlings and a robin, all ringed as adults, and found dead or dying four years later, and a blue tit, a blackbird, four starlings and a greenfinch found three years after ringing.

RECOVERIES OF RINGED BIRDS

(a) RINGED BY NORTHUMBERLAND AND DURHAM N.H.S.

Date and place ringed	Place recovered	Date recovered
WOODCOCK		
15.6.58 Hamsterley S.F., Co. Durham	Lepertown, nr. Dunmore East, Co. Waterford, Eire (shot)	31.1.60
KITTIWAKE		
17-25.6.59 North Shields	Heads of Ayr, Ayrshire	29.12.60
BLACKBIRD		
8.2.59 *Kylloe, nr. Beal, Northd.	Frisbeek, nr. Nörre Snede, Jutland, Denmark (killed striking telephone wires)	5.1.60
26.12.58 *Buckton, nr. Beal	Quigleys' Point, Inishowen Peninsula, Donegal, Eire (found in hen house)	19.2.60
10.10.59 *Fenwick, nr. Beal	St. Vivien du Medoc, Gironde, France (killed)	27.2.60

Date and place ringed	Place recovered	Date recovered
STARLING		
13.1.58 *North Shields	Puxton, nr. Congresbury, Somerset (shot)	ca.12.1.60
11.1.59 *Fenwick, nr. Beal	Nr. Vraa, Jutland, Denmark	(6.4.60)
8.11.58 (w)Beal	Gourock, Renfrewshire	9.4.60
1.2.56 *North Shields	Frederikshavn, Jutland, Denmark	9.5.60
19.12.58 *Stagshaw, Northd.	Skaerbaek, Jutland, Denmark	10.5.60
1.2.56 *North Shields	Zapadnaya-Dvina, Kalinin, U.S.S.R.	20.5.60
11.1.59 *Fenwick, nr. Beal	Swanland, nr. Hull, Yorks.	(6.6.60)
16.12.56 *Newcastle upon Tyne	Duns, Berwickshire (killed by cat)	(8.6.60)
18.3.56 *Newcastle upon Tyne	Meløy, Nordland, Norway	1.9.60
20.12.58 *Beal	Brugge, W. Flanders, Belgium (caught)	20.12.60

(b) OTHER INTERESTING RECOVERIES

GANNET

July, 1960	Bass Rock	(1) Nr. Durham City (found alive—released at Mars- den Rock)	12.10.60
		(2) Lancaster (J.C.C.)	15.10.60

LAPWING

22.5.55	Stannington (J.S.A.)	Limerick, Eire (shot)	10.2.60
1.6.57	Nr. Consett	Sokol, U.S.S.R. (59°28'N, 40°10'E)	6.5.60

GOLDEN PLOVER

18.6.57	Allenheads (J.S.A.)	Nr. Wakefield, Yorks. (shot— movement of 80 m. S.S.E.)	12.1.60
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CURLEW

3.6.59	Töysä, W. Finland	Holy Island (shot)	1.9.60
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GREATER BLACK-BACKED GULL

10.7.60	Nigg, Ross and Cromarty	Beadnell (W.J.)	22.9.60
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BLACK-HEADED GULL

21.5.58	Madla, nr. Stavanger, Norway	Ashington (caught and released) (R.C.)	2.8.60
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Date and place ringed	Place recovered	Date recovered
REDWING		
16.4.60	*Signilskär, Åland Islands (60°12'N, 19°22'E)	Nr. Newcastle upon Tyne (J.A.) 27.12.60
STARLING		
6.6.58	(j) Tillan, Estonia, U.S.S.R.	Sherburn starling roost (R.M.P.) 2.1.60
SISKIN		
17.9.60	Newton-by-the-Sea (E.A.R.E.)	Zulte, East Flanders, Belgium 1.10.60

- NOTES: 1. * Indicates bird ringed as adult.
2. (j) Indicates bird ringed as juvenile.
3. (w) Indicates bird ringed as 1st winter.
4. Unless otherwise stated all birds have been ringed as pullus and are either known, or presumed to have been found dying or dead.
5. Where the date of recovery is unknown, the date of the reporting letter is given in brackets.
6. In (b) initials indicate either ringer or person reporting the recovery.

CLASSIFIED NOTES

1. BLACK-THROATED DIVER *Colymbus arcticus* One on Hart Reservoir on January 27th (A.L.C.); one on the sea off Marsden on February 26th (P.H.); one found dead in Budle Bay on March 27th (C.B.); one in summer plumage off Beadnell on July 26th (J.S.A.); two off Bamburgh on November 19th (D.T.P.).

2. GREAT NORTHERN DIVER *Colymbus immer* There is considerable overlap in the field characteristics of the great northern and black-throated diver in winter plumage and all records of both species should be supported by a detailed field description.

Divers, in winter plumage, and probably of this species, reported from Seaton Sluice (C.B.), Bamburgh (D.T.P.), Cullernose and Embleton (W.S.C.) and Teesmouth (A.L.C.), between January and April 22nd, and between October 30th and the end of the year.

One in partial summer plumage at Hartlepool on July 15th (P.R.).

4. RED-THROATED DIVER *Colymbus stellatus* Many reports received: one (oiled) at Teesmouth on March 13th; an inland record of one in summer plumage on a pond at Billingham on April 12th (A.L.C.);

last spring records on May 5th and 21st at Hartlepool (E.S.); three off Hartlepool on July 16th and 19th (R.A.McK., R.T.McA., E.S.); next record at St. Mary's Island on October 16th (D.T.P., P.H.).

5. GREAT CRESTED GREBE *Podiceps cristatus* One on February 6th, and two during the second half of March, on the sea at Hartlepool (P.R., R.T.McA.).

Single pairs bred at two localities in County Durham, but only one reared young. Two pairs seen on a lake in Northumberland during the breeding season, but no evidence of attempted breeding.

6. RED-NECKED GREBE *Podiceps grisegena* Single birds at Seaton Carew between February 27th and March 6th (A.B., P.J.S.), at Hartlepool on March 2nd (P.J.S.), at Cullernose on October 30th (W.S.C.) and at Bamburgh on December 31st (D.T.P.).

7. SLAVONIAN GREBE *Podiceps auritus* One off Seaton Sluice on January 17th (R.M.W.).

8. BLACK-NECKED GREBE *Podiceps caspicus* One at Whittledene Reservoir on February 22nd (R.M.W., S.R.S.).

9. LITTLE GREBE *Podiceps ruficollis* An unusual record of one on the sea off Seaton Carew on May 16th (E.S.).

There is some evidence that this species bred unusually late in 1960. On July 31st, there were two pairs on Bolam Lake and both had small chicks (C.M.A.). Near Fishburn, one pair was seen with "downy" young in October (E.S.) (See note on late breeding of moorhen).

12. LEACH'S PETREL *Oceanodroma leucorhoa* One, almost certainly of this species, off Hartlepool on October 27th (K.B.).

16. MANX SHEARWATER *Procellaria puffinus* Relatively few reports: early records include one off Hartlepool on April 11th and two at the Farnes on April 17th; passage movements, involving several hundred birds, off Hartlepool between June and August; 63 passing Hartley Point in 75 minutes on August 4th and 22 in five hours on August 6th (D.T.P.); a flock of 80 on the sea off Bamburgh on August 28th (E.L.A.).

19. GREAT SHEARWATER *Procellaria gravis* One off the Farne Islands on September 6th (E.L.A.).

21. SOOTY SHEARWATER *Procellaria grisea* Single birds at Whitburn on August 5th and September 28th (J.A.B.), at Seaton Sluice on August 17th, at Bamburgh (with a flock of Manx shearwaters)

on August 28th (E.L.A.), off Hartlepool on September 4th (R.A.McK., P.J.S.) and October 10th (B.J.C.), and off Tynemouth on October 9th (R.M.W.).

26. FULMAR *Fulmarus glacialis* Three young seen on the cliffs between Cullernose and Howick on August 21st. Fulmars were still present at Cullernose on September 11th, but subsequently left and had returned for the following breeding season by October 30th (W.S.C.).

27. GANNET *Sula bassana* Passage of small parties along the coast recorded frequently between April 16th and December 31st.

— PINK-BACKED PELICAN *Pelicanus rufescens* A pelican, identified by P.J.S. as belonging to this species, was present near Witton-le-Wear throughout July (E.H.T., P.J.S.) and may have been the bird reported shortly before on the Isle of May. Although there were no reports of escapes in Great Britain, the possibility that it had come from a continental zoo cannot be excluded.

28. CORMORANT *Phalacrocorax carbo* Continues to breed on Marsden Rock where it bred successfully for the first time in 1958. At least seven nests built in 1960 (J.C.C.). There is considerable competition for space on the top of Marsden Rock and it seems possible that, in time, cormorants may force the herring-gulls out of the areas on which they now breed. Continued observations should, therefore, be made on the numbers of nesting pairs of the two species.

29. SHAG *Phalacrocorax aristotelis* Continues to breed on the Farne Islands and at Dunstanburgh, but only two pairs nested at the latter site. A pair of adults was present on a rock ledge at Marsden Rock during June, but no nest was built (J.C.C.).

30. HERON *Ardea cinerea* A further decline in the breeding population. On April 20th four occupied nests in the North Tyne heronry; the nests had apparently been robbed earlier (A.J.C.). Only three additional nests at two other Northumberland sites and the long-established Chillingham heronry completely deserted (E.L.A.). Five occupied nests on April 25th at the colony in south Durham and up to 12 adults seen in flight at one time. [Correction to O.R. for 1959: eight nests at this last colony, making County Durham's total 11, not three (V.F.B.)].

38. BITTERN *Botaurus stellaris* A bird heard "booming" at a locality in Northumberland during the spring.

45. MALLARD *Anas platyrhynchos* A flock of 300-500 on Gosforth Park Lake in January and February (V.F.B., D.T.P.). No other large flocks reported, but some undoubtedly occurred.

No breeding records received.

46. TEAL *Anas crecca* Two records of successful breeding from north-west Durham.

47. GARGANEY *Anas querquedula* Single pairs at Cowpen Marsh, Teesmouth, on April 3rd (V.F.B.), at Hurworth Burn Reservoir on May 2nd (E.S.) and at Newton Bog on April 30th (W.S.C.).

A flock of seven seen at Teesmouth on July 25th may represent a family party, but no certain breeding records received.

49. GADWALL *Anas strepera* One male at Grindon Lough between April 2nd and 16th, and two males and a female on 17th (A.J.C.).

50. WIGEON *Anas penelope* A pair remained at Teesmouth until May 16th and a drake was seen on June 5th (E.S.). Six at Teesmouth on July 20th (E.S.), three flying past Beadnell on July 28th (J.S.A.), and seven at Teesmouth on August 7th, indicate the early reappearance of this duck in the counties.

52. PINTAIL *Anas acuta* A pair on Gosforth Park Lake from January 6th to February 27th (S.R.S. *et al.*). First recorded at Teesmouth on March 14th when one drake was present; 19 seen here on March 18th were reduced to six in early April (E.S., A.L.C., V.F.B.); two drakes at Grindon Lough on April 2nd (A.J.C.); two drakes and a duck at Newton Bog on April 30th (W.S.C.).

53. SHOVELER *Spatula clypeata* Successful breeding proved at three localities in the two counties and at least 35 ducklings seen.

55. SCAUP *Aythya marila* Inland: two near Billingham from November 9th, 1959, until February 10th, 1960 (E.S.); one drake near Wooler on March 22nd (E.L.A.); one drake on Smiddyshaw Reservoir on April 19th (E.S.); one drake near Stanley on September 18th (R.M.P.); eight at Crookfoot Reservoir on November 14th (A.L.C.); at least one at Hurworth Burn Reservoir from November 10th to December 1st with a maximum of nine on November 13th (E.S., A.L.C.).

In contrast, very few observed on the coast, with the exception of 67 flying past Seaton Sluice on October 16th (P.H.).

56. TUFTED DUCK *Aythya fuligula* Largest winter flocks were about 150 on Gosforth Park Lake on January 23rd (V.F.B.) and 119 at Seaton Burn ponds on March 29th (R.M.P.).

Bred successfully at three localities.

57. POCHARD *Aythya ferina* A total of 80 on Broomlee Lough on February 6th (P.H.); 55 at Whittle Dene Reservoirs on February 24th (E.L.A.); a very large flock of about 245 birds at Seaton Burn ponds on March 22nd had decreased to 138 on March 29th, and 28 on April 8th (R.M.P.).

Successful breeding from one locality in County Durham; none from Northumberland.

58. FERRUGINOUS DUCK (WHITE-EYED POCHARD) *Aythya nyroca* Two reported on Gosforth Park Lake on February 13th by R.M.W. who supplied the following description: smaller than tufted duck or wigeon; head, neck, breast and sides deep reddish-brown and the wings even darker; underparts white. The most distinctive feature was the white under-tail coverts, visible to the naked eye at a considerable distance.

60. GOLDEN-EYE *Bucephala clangula* Present only in small numbers: maximum of 16 recorded on Bolam Lake on March 13th (C.M.A., A.M.) and at Hurworth Burn Reservoir on November 6th (E.S.); two on a pond near Durham City on July 16th and 23rd (R.M.P.) and one immature on August 5th (E.S.).

On November 26th, a drake was mobbed and harried by black-headed gulls at Wallsend Swallow; they sometimes landed on the drake's back, forcing it to dive (D.T.P.).

61. LONG-TAILED DUCK *Clangula hyemalis* Last spring record: one immature at Seaton Sluice on March 19th (V.F.B.).

First autumn record: a single drake off Hartlepool on September 27th. Large flocks totalling about 500 birds, but containing very few drakes, off Bamburgh on October 18th (J.H.A., G.W.T.).

Inland: up to three on Whittle Dene Reservoir between October 12th and November 30th; one immature on Hurworth Burn Reservoir from October 13th to 20th (E.S.); a drake at Hallington Reservoir on October 16th (E.M.L.).

62. VELVET SCOTER *Melanitta fusca* Very few recorded in early months of the year: up to three at Seaton Carew in January and February (E.S.); two at Cullernose on March 6th (W.S.C.); one at Bamburgh on April 4th (R.M.W.).

Only three summer records: two at Beadnell on July 25th (J.S.A.); one at Seaton Sluice on August 1st (D.T.P.); one at St. Mary's Island on September 17th (R.M.W.).

A flock of 25 off Sunderland on October 22nd in company with common scoters (S.H.).

64. COMMON SCOTER *Melanitta nigra* Inland: one drake at Hurworth Burn Reservoir on April 3rd (E.S.) and a duck on Grindon Lough on November 20th (A.J.C.). Up to 90 present at Seaton Carew in the first three months of the year (E.S.). About 1,000 passed Bamburgh in an hour on November 19th (D.T.P.).

67. EIDER-DUCK *Somateria mollissima* A maximum of 33 at the regular wintering station at Seaton Sluice on February 22nd (D.T.P.); up to ten at Seaton Carew in February; others (probably only two) between Hartlepool and Teesmouth from March 13th to 21st.

Now breeds in Northumberland at two localities south of the Farne Islands (J.C.C.). One duckling, marked on the Inner Farne when about a day old, was reported eight miles south only seven days later.

69. RED-BREASTED MERGANSER *Mergus serrator* A small flock present off Crimdon Dene, near Hartlepool, from January until March (maximum 11) and again in November and December (maximum 15). An inland record: one "redhead" at Hurworth Burn Reservoir between October 25th and 28th (E.S.).

70. GOOSANDER *Mergus merganser* Reported in small numbers from several inland localities with maximum of 23 at Whittle Dene Reservoirs on February 24th (E.L.A.), and of 20 at Greenlee Lough on February 6th (P.H.).

A pair present during the breeding season on the Tyne and one successful breeding record from the South Tyne.

71. SMEW *Mergus albellus* Only two records: a pair at Killingworth pond on February 6th and 12th (G.F.A.M.); a single bird at Tanfield ponds, Stanley, on October 16th (R.M.P.).

73. SHELD-DUCK *Tadorna tadorna* Between 1,000 and 1,300 in Teesmouth estuary on January 23rd and 24th (D.G.B., J.H.); 900 on February 13th (P.J.S.); about 400 at the end of March (R.T.McA.), but only seven pairs on May 23rd (V.F.B.) and not more than 20 ducklings reared. A total of 99 adults and one brood of nine ducklings in Budle Bay on July 2nd (C.M.A., J.C.C.); at least five ducklings near Embleton (W.S.C.) and three near Warkworth (C.M.A.).

GEESE *sp.* Very few reported at the beginning of the year. The first autumn record was on October 26th, when 24 flew north over Alnwick (E.M.), while flocks of "over 70" and 150 were seen over Craster and Norton respectively on October 31st (W.S.C., A.L.C.).

78A. BEAN GOOSE *Anser arvensis* Reports of eight seen at Greenlee and Grindon Loughs between February 6th and March 5th may refer to the same birds (P.H., G.S.A.).

80. BRENT GOOSE *Branta bernicla* Two records, both for Fenham Flats: about 400, mainly pale-breasted, on February 15th (E.L.A.); about 450 on December 31st (S.R.S., R.M.W.).

81. BARNACLE-GOOSE *Branta leucopsis* One flew past St. Mary's Island on February 20th (R.M.W.) and seven past Berwick-on-Tweed on September 29th (E.L.A.).

82. CANADA GOOSE *Branta canadensis* For the fourth successive year small parties recorded during the summer months: 12 at Blaydon on May 27th (J.S.B.); about 30 flying south off Bamburgh on June 4th (E.A.R.E.); one at Tanfield ponds, Stanley, on June 6th (R.M.P.); two flying along the coast at Cullernose on July 3rd (W.S.C.); seven flying south over South Shields on July 31st (S.H.).

84. MUTE SWAN *Cygnus olor* Breeding records incomplete. At Wallsend Swallow successful breeding reported (D.T.P.) and unsuccessful at Capheaton Lake (C.M.A.); no information about final success of pairs nesting at Warkworth (J.C.C.), Dorman's Pool, Teesmouth (V.F.B.), and Brasside ponds (J.C.C.).

A large flock at Berwick-on-Tweed and a maximum of 69 in Budle Bay (C.M.A.).

85. WHOOPER-SWAN *Cygnus cygnus* Some evidence that the number of wintering whoopers has increased in recent years. Many 1960 records, but usually only of small parties. Largest herds: 24 at Holywell ponds on February 21st (D.T.P.); 25 on Bolam Lake on December 18th (C.M.A.).

An exceptional occurrence: eight on the River Tweed between June 26th and July 3rd (C.H.B., E.A.R.E.).

86. BEWICK'S SWAN *Cygnus bewickii* An unusually large herd at Teesmouth: nine seen on January 20th, with a maximum of 33 in late March and early April (E.S., A.L.C., V.F.B.). Two at Brasside on March 26th (C.M.A.).

An adult and a first winter bird at Killingworth on October 30th and two additional adults on November 26th; two at Broomlee Lough

on November 27th (R.M.W.); three at Smiddyshaw Reservoir on December 30th (E.S.).

98. HONEY-BUZZARD *Pernis apivorus* One present at Hartlepool on September 17th. A good view obtained and full description supplied (J.H., G.P., R.T.McA., R.J.L.).

HARRIER *sp.* Single harriers, which could not be specifically identified, at Teesmouth on April 3rd (V.F.B.), Shiremoor on May 27th (J.R.P.) and Seaton Burn ponds on September 25th (E.R.).

99. MARSH-HARRIER *Circus aeruginosus* A female at Holywell ponds between May 17th and 20th (A.J., M.G.R. *et al.*); an adult male at St. Mary's Island on September 17th (R.M.W., D.T.P. *et al.*).

100. HEN-HARRIER *Circus cyaneus* One seen under good conditions at Budle Bay on September 18th (C.M.A., W.S.C., R.M.W.); a female at Grindon Lough on October 2nd (A.J.C.).

103. OSPREY *Pandion haliaetus* One seen eating a fish at Teesmouth on July 24th (P.R., P.J.S. *et al.*); three reported at Hartlepool on September 17th; four at Hartlepool on September 29th (R.S.).

105. PEREGRINE FALCON *Falco peregrinus* One (not necessarily the same bird) seen at Teesmouth in each month from March to July; a very tired immature at Hartlepool on September 17th (J.S.B.); one at Dunstanburgh on December 3rd (W.S.C.); one over South Shields on December 26th (S.H.).

107. MERLIN *Falco columbarius* Few records except during the breeding season; a nest containing four eggs in Weardale on May 31st.

110. KESTREL *Falco tinnunculus* Passage observed on September 16th and 17th: eight near Seaton Sluice and St. Mary's Island (D.T.P.); six flying round the priory on Holy Island (J.P.D.); at least five still on the Farne Islands on September 19th (E.A.R.E.).

113. BLACK GROUSE *Lyrurus tetrix* No reports of breeding, but a number of records from south-west Northumberland and west Durham, including the Haltwhistle area (M.P.), Whitfield district (A.J.C.), Langdon Beck area (C.M.A.), Allen's Green (W.J.), Bollihope Common, Wolsingham Park Moor and Warden Law (J.A.B.).

117. QUAIL *Coturnix coturnix* One breeding record at Featherstone, Northumberland. Call first heard on August 6th, and on August 14th and 20th two adults and three nearly fully-grown young flushed. "I have seen quail in this locality only on other three occasions in fifty years" (M.P.).

120. WATER-RAIL *Rallus aquaticus* Only four records: single birds at Gosforth Park on January 23rd and May 7th (V.F.B., S.R.S.), at Holywell ponds on April 7th (S.R.S.) and on the sand-dunes at Bamburgh on April 15th (R.M.W.).

125. CORNCRAKE *Crex crex* A bird was heard calling on three successive days, May 19th to 21st, near Middle Brunton, where one was seen in August, 1959 (E.R.). Another was heard near Stocksfield on May 18th and 19th (C.S.R.).

There are two unconfirmed reports of breeding at Christon Bank and Warrenford in north Northumberland (per J.H.N.).

126. MOORHEN *Gallinula chloropus* Two nests at Tanfield ponds, Stanley, were situated in completely exposed positions on the mud and at least five yards from any vegetation—one was on top of a car tyre and the other on a plank of wood. This may have been due to the lowering of the water level after the nest sites were selected. Two nests with warm eggs were found here on September 5th (R.M.P.). Late breeding was reported also for the little grebe (page 10).

On June 1st a nest (with three eggs) was found at 1,600 ft. on the edge of a reservoir on Middleton Common (J.A.B.).

127. COOT *Fulica atra* A series of monthly counts made over the last four years (see below) suggests that there is a definite immigration of coots into Northumberland during the winter (A.M., C.M.A.). Results obtained from ringing show that there is a considerable migration of coots into this country from the continent.

NUMBER OF COOTS ON BOLAM LAKE AND CAPHEATON LAKE IN EACH MONTH
FROM 1957 TO 1960

Winter maxima shown in bold type										
	Jan.	Feb.	Mar.	Apr.	May	June & July	Aug.	Sept.	Oct.	Nov. Dec.
Bolam Lake										
1957...	21	31	11	18	11	14	15	26	36	28 39
1958...	46	43	31	14	—	13	—	—	21	— 51
1959...	60	70	20	—	5	—	—	24	25	37 71
1960...	73	72	33	17	—	10	—	16*	19	35 101
Capheaton Lake										
1957...	33	59	41	31	20	20	18	100*	233	316 234
1958...	288	142	116	51	—	20	—	—	60*	— 338
1959...	—	—	74	—	32	—	48	65	96	102 110
1960...	65	73	28	—	—	50*	—	80	100	65 11

* Indicates count includes young

It is interesting to note the gradual increase of wintering coots at Bolam Lake from 1957 to 1960; there has tended to be a complementary decrease in the numbers wintering on Capheaton Lake.

Large winter flocks have also been reported from Seaton Burn ponds, where 280 were counted in January, 1960 (R.M.P.), and Holywell ponds, where over 150 were present in February (D.T.P.).

131. OYSTERCATCHER *Haematopus ostralegus* Inland breeding of one pair reported from Teesdale (H.W.).

133. LAPWING *Vanellus vanellus* Three newly-hatched young were found at Haltwhistle on April 23rd (M.P.). This is a very early date for Northumberland and laying must have started in March. Two other early nests containing eggs were found near Cauldron Snout on April 10th (C.M.A.).

134. RINGED PLOVER *Charadrius hiaticula* Two pairs bred near Northumberland reservoirs in 1959, but no nests reported in 1960.

A flock of about 250 at Teesmouth on May 23rd (V.F.B.) had increased to over 300 by May 27th, when courtship display was observed (A.L.C.). It seems likely that these were birds on passage to more northern regions, since from their behaviour some, at least, were adults and most British birds had started breeding by this date.

139. GREY PLOVER *Charadrius squatarola* Inland records: one in summer plumage near Coxhoe on May 17th; an immature at Wallsend Swallow on September 15th (E.L.A.); two at Crookfoot Reservoir from September 25th to October 6th (E.S.); one at Whittle-dene Reservoirs on September 28th (E.L.A.).

Eleven seen at Teesmouth on June 5th, four still present on June 10th, and two remained until June 17th (A.L.C., E.S.); a flock of 20 in summer plumage at the same locality on July 25th (D.T.P.) and a further 20 birds remained from September 19th until the end of October (A.L.C.); 60 in Budle Bay on September 4th (E.L.A.).

140. GOLDEN PLOVER *Charadrius apricarius* Several records of large flocks during the winter months. Flocks, where the majority, if not all, of the birds had the characteristics of the northern race *altifrons*, reported from Craster on April 3rd and 26th (J.M.C., W.S.C.) and at Otterburn on April 25th (J.C.C.).

Present during late September and early October in "greater numbers than at any time since the last war" around Craster and Embleton (J.M.C.).

143. TURNSTONE *Arenaria interpres* Inland: one at Tanfield ponds, Stanley, on August 15th (R.M.P.).

In November and December, several seen scavenging among fish boxes on Seahouses harbour; others flew onto fishing boats as they came into the inner harbour, apparently to take the fishing waste left on the deck (J.C.C.). At the Farne Islands flocks of up to 12 birds seen feeding among the grey seals, well above the high tide line on Staple Island and the North Wamses. Similar behaviour has been noted on North Rona where turnstones are found among the seals breeding high up on the island.

147. JACK SNIFE *Lymnocyptes minimus* Only three spring records, the latest on April 24th, when one seen at Teesmouth (R.M., R.A.McK., P.R.).

Autumn immigration started much earlier than that of common snipe or woodcock. One at Teesmouth on August 7th (R.A.McK.). Several recorded in September: one at Blyth on 4th (R.M.W.); one at Holywell ponds on 12th (D.T.P.); one near Stanley on 18th and 25th (R.M.P.); one at Hurworth Burn and two at Teesmouth on 25th; one near Coxhoe on 28th (E.S.).

151. WHIMBREL *Numenius phaeopus* The only spring record: one at Teesmouth on April 10th (A.L.C.). Appeared at Teesmouth on July 14th and over 100 present by July 31st (E.S.). Inland records: one at Crookfoot Reservoir on July 21st; heard over Darlington on August 28th (E.S.).

154. BLACK-TAILED GODWIT *Limosa limosa* Five records: one at Teesmouth on April 4th (E.S.) and another on September 30th (R.S.); one at Holywell ponds on April 27th (D.T.P.); one at Grindon Lough on May 14th (A.J.C.); one at Budle Bay on July 20th (E.A.R.E.).

155. BAR-TAILED GODWIT *Limosa lapponica* No large flocks reported.

156. GREEN SANDPIPER *Tringa ochrophus* No winter or spring records.

First birds seen on autumn passage were two at Hurworth Reservoir on June 28th (E.S.). Several records in July, August and September, with the last on October 27th.

157. WOOD-SANDPIPER *Tringa glareola* Reports refer to seven or eight individuals. One at Hurworth Burn Reservoir on June 19th and August 2nd (E.S.); one at Annfield Plain on July 14th (R.M.P.); one at Teesmouth on July 21st (J.A.B.); one near Washington on September 4th (A.H.B., R.S.A.); one or two at a sewage farm near Coxhoe between August 5th and October 11th—a very late date (E.S.).

161. COMMON REDSHANK *Tringa totanus* A large increase in numbers at Teesmouth on April 3rd, when at least 500 were estimated to be present (V.F.B.). Resident birds had already taken up their breeding areas by this date and these were probably on passage northward.

162. SPOTTED REDSHANK *Tringa erythropus* One, possibly two, at Teesmouth on spring passage (A.L.C., E.S.).

Only single birds reported on autumn passage; the earliest at Hurworth Burn Reservoir on July 17th (J.H.B.) and the last at a sewage farm near Coxhoe on October 10th (E.S.). A bird at Colt Crag Reservoir on September 15th, 18th and 19th was far inland (A.J.C., E.M.L. *et al.*).

165. GREENSHANK *Tringa nebularia* The only spring record: one at Smiddyshaw Reservoir on March 26th (C.M.A.). Most autumn records refer to single birds, but a group of seven was at Hurworth Burn Reservoir (E.S.).

169. KNOT *Calidris canutus* About 6,000 at Teesmouth on January 9th (P.J.S.) and 6,000 at Fenham Flats on February 21st (largest count of winter) (F.B.). Inland: one at Crookfoot Reservoir between September 4th and 8th (E.S.).

170. PURPLE SANDPIPER *Calidris maritima* Largest flocks recorded: 50 in the St. Mary's Island area on January 3rd (D.T.P.); 56 at Hartlepool on March 12th (R.T.McA.) rising to 70 on April 16th (B.J.C.). A total of 31 at St. Mary's Island on October 31st (R.M.W.).

171. LITTLE STINT *Calidris minuta* One seen at Teesmouth on several occasions between April 27th and June 1st and again on July 9th (E.S., J.C.N.).

An unprecedented influx occurred in mid-September and the numbers below indicate the extent of this immigration.

NUMBER OF LITTLE STINTS RECORDED AT DIFFERENT AREAS OF NORTHUMBERLAND AND DURHAM, 1960.

	Holy Island area	Tyne and Wear area	Teesmouth	Inland
Aug. 18—Sept. 7 ...	3	0	12	6
Sept. 8—14 ...	6+	0	30	0
Sept. 15—21 ...	130	9	200+	88
Sept. 22—28 ...	5	3	200+	8
After Sept. 28 ...	0	0	20	4

The largest flocks consisted of about 75 at a sewage farm near Coxhoe on September 17th (E.S.) and 120 at Teesmouth on September 25th. It is interesting to note that this species was already present in the two counties before the large influx on September 17th and 18th.

178. DUNLIN *Calidris alpina* No breeding records received. Estimated numbers at Teesmouth were over 2,000 on July 25th and about 3,000 on September 25th (R.T.McA.).

179. CURLEW-SANDPIPER *Calidris testacea* The only record on spring passage: one at Teesmouth on June 6th (R.A.McK., P.J.S. *et al.*). In August and September single birds reported at Berwick-on-Tweed, Beal, Fenham, Budle Bay and Cresswell (V.F.B., A.L.C. *et al.*) and small flocks (monthly maxima respectively five and 20) at Teesmouth. An inland record: two near Stanley on August 31st and September 1st (R.M.P.).

181. SANDERLING *Crocethia alba* A large flock of between 400 and 500 at Teesmouth on May 22nd (J.A.B., P.J.S.).

184. RUFF *Philomachus pugnax* Reported in every month of the year except May: one at a sewage farm near Coxhoe on January 22nd remained until February 22nd (E.S.L.); two at Teesmouth on March 20th (R.J.L., G.P.); at least four (including two males in breeding plumage) in April (R.M.P., D.T.P., E.S.); a pair at Teesmouth on June 25th, the male remaining until June 29th (E.S., R.A.McK., P.J.S.); 20 (the largest autumn flock) at Teesmouth on September 21st (V.F.B.); two at Teesmouth on November 3rd (J.G.); two near Coxhoe on December 5th, one remaining until the end of the year (E.S.).

185. AVOCET *Recurvirostra avosetta* One on Inner Farne on May 12th (C.N.R.); one at Teesmouth on May 21st and two on May 24th (E.S., G.T., A.L.C., V.F.B.); one on the Farne Islands on July 5th (E.A.R.E.).

187. GREY PHALAROPE *Phalaropus fulicarius* One on the sea at Seaham Harbour on November 2nd (E.S.).

193. ARCTIC SKUA *Stercorarius parasiticus* Inland: one adult at Hurworth Burn Reservoir on June 26th (E.S.).

A skua, probably of this species, flew past Hartlepool on February 13th, a very early date. Reported from the coast from April 16th to December 21st, with a maximum of 70 passing off Hartlepool on August 11th.

194. GREAT SKUA *Stercorarius skua* Recorded off the coast from July to October: one at Hartlepool on July 7th (R.J.L.); at least six in August; 11 in September and a minimum of 34 in October (J.H.C., W.S.C., J.A.B., S.H.).

196. LONG-TAILED SKUA *Stercorarius longicaudus* One adult at Hartlepool on October 8th and 9th (R.T.M., G.P. *et al.*).

198. GREATER BLACK-BACKED GULL *Larus marinus* Large influx, including many apparently mature individuals, around the Farne Islands throughout July when over 1,000 counted resting on the islands (J.C.C.).

199. LESSER BLACK-BACKED GULL *Larus fuscus* Three on the Tyne at Newcastle on February 27th (V.F.B.); first seen at Teesmouth on March 7th (E.S.); one (apparently *L.f.graellsii*) at Dunstanburgh on November 19th (W.S.C.).

202. GLAUCOUS GULL *Larus hyperboreus* At least three at Hartlepool in February, March and April and one in May; one on the Tyne at Newcastle on April 26th; one (or, possibly, an Iceland gull) at Holywell ponds on April 27th (D.T.P.).

205. MEDITERRANEAN BLACK-HEADED GULL *Larus melanocephalus* The Hartlepool bird completed its fourth consecutive winter stay and was last seen on March 20th when it was in full breeding plumage. What was presumably the same bird had returned by August 6th, but was not seen after September 18th.

207. LITTLE GULL *Larus minutus* One at Hartlepool from July 17th to 31st (E.S.); up to four at Hart Reservoir during August (D.G.B.) and possibly two others at Hartlepool; one at Hart Reservoir and one at St. Mary's Island in September (R.A.McK., D.T.P.); three at Teesmouth and Hartlepool in early October (A.L.C. *et al.*).

208. BLACK-HEADED GULL *Larus ridibundus* One pair nested on Coquet Island (J.C.C.) and about ten pairs attempted to breed near Coxhoe (where they have apparently bred regularly in the past) (E.S.).

None nested on Holborn Moss where, for no apparent reason, the breeding colony has died out in last two years (F.B.).

209. SABINE'S GULL *Xema sabini* One, found among a flock of arctic terns at Seaton Snook, Teesmouth, on July 24th, was seen by at least 11 observers, including J.A.B. and P.J.S. It was in adult

plumage, with a dusky grey nape and hind part of the neck, but had a darkish extremity to its bill. One (probably the same bird) was seen at Hartlepool on August 2nd by R.T.McA., R.A.McK., R.J.L. and K.B.

210. ROSS'S GULL *Rhodostethia rosea* On April 30th, an adult male was found dead near Holywell ponds, Seaton Delaval, Northumberland, by A.J., who presented it to the Hancock Museum.

Measurements: wing 268 mm., bill from feathers 19 mm., tarsus 27 mm., tail 130 mm. Soft parts: bill black, inside of bill and tongue orange-pink, eye dark hazel, orbital ring orange-red, legs orange-red, claws black (S.E.C.).

This record comprises the third for Great Britain and the fifteenth in Europe.

211. KITTIWAKE *Rissa tridactyla* Eleven nests counted at Tyne-mouth Castle cliffs, but only one contained young on July 28th, when some 60 birds, mainly immature, seen resting on the cliffs (A.J.). Breeding first proved at this colony in 1957 when five nests built (J.C.C.). 3,200 nests counted at Marsden, a large increase on the 1952 figure of 1,350 nests (*O.R. for 1952*).

A recent change in the behaviour of the kittiwake has resulted in birds being regularly seen up the Tyne as far as Newcastle during the spring and summer (A.M., J.C.C.). Other inland records were three adults near Forest Hall on August 5th (R.M.P.) and two immatures at Hurworth Burn Reservoir on September 13th (E.S.).

212. BLACK TERN *Chilidonias niger* Spring records probably refer to nine birds. One at Hurworth Burn Reservoir on May 10th, 12th and 17th (T.W., E.S.); one near Coxhoe on May 20th; five at Hartburn Grange Lake on June 4th (M.G.R.); two at Teesmouth on June 4th and 5th (E.S., J.A.B.).

On autumn passage, four or five seen at Teesmouth in late July; 41 reported in August, including 39 which passed Hartlepool on August 28th (J.A.B.); about ten during September.

217, 218. COMMON TERN *Sterna hirundo* and ARCTIC TERN *Sterna macrura* Breeding: arctic terns only on the Farne Islands; common terns at three coastal localities, but success probably nil at Teesmouth.

Inland: one (arctic) ringed on the Farne Islands in 1957 found dead at Crookfoot Reservoir on May 6th (G.H.) and an immature seen here on October 1st (E.S.); two at Hurworth Burn Reservoir

on June 21st (E.S.); two (arctic) at Smiddyshaw Reservoir on August 29th; two at Haydon Bridge on October 1st (W.J.); one adult (arctic) near Coxhoe on October 10th (E.S.).

219. ROSEATE TERN *Sterna dougallii* Bred successfully at two coastal localities in Northumberland, but total numbers less than 100 pairs.

222. LITTLE TERN *Sterna albifrons* Unsuccessful attempts to nest at one locality in Northumberland and at Teesmouth.

224. RAZORBILL *Alca torda* Razorbills (including many birds of the year) made up the greater part of a flock of 235 auks seen off Cullernose on August 7th (W.S.C.). Few razorbills nest on the Farne Islands and St. Abb's Head is the next nearest breeding colony.

226. LITTLE AUK *Plautus alle* Reported as follows: Hartlepool, one on January 1st and February 13th, two on January 16th (P.H., J.H., R.T.McA., M.Pa.), one on October 24th (R.A.McK.); Seaton Sluice, one on January 7th and February 17th (D.T.P., A.L.C.); Cullernose, one (in summer plumage) on April 17th (R.M.W.); Farne Islands, four on January 4th, three on January 5th, one on January 25th and October 29th (G.H.). An unusual record was one (in summer plumage) off the Farne Islands on June 22nd (E.A.R.E.).

229. BLACK GUILLEMOT *Uria grylle* Single birds seen off the Farne Islands on January 4th, February 5th, April 30th (G.H.) and September 6th (E.L.A.).

235. TURTLE DOVE *Streptopelia turtur* Breeding proved near Embleton (J.H.N.).

Up to eight seen about Hurworth Burn in early June and single birds reported subsequently (E.S.); one near Alnwick on May 7th (W.M.B.); two at Detchant on May 14th; one heard calling at Neasham on July 2nd (M.G.R.); one at Twizel Bridge on July 4th (E.M.L.).

— COLLARED DOVE *Streptopelia decaocto* No proof of breeding, but several present during the breeding season at two localities in Northumberland. At one locality six reported, but three later alleged to have been shot. Single birds seen near Embleton on May 14th and 26th (W.S.C.).

248. LONG-EARED OWL *Asio otus* One at Tynemouth on October 22nd (M.G.R.).

249. SHORT-EARED OWL *Asio flammeus* Single birds reported at Teesmouth from February to April; one at Seahouses on April 6th (R.M.W.); a tired bird on the cliff top near St. Mary's Island on August 17th (D.T.P.); at least three on Holy Island on September 5th (C.E.D.); one at Teesmouth on September 8th and October 17th (A.L.C.); one at Seahouses on September 30th (E.A.R.E.); single birds arrived from the sea at Hartlepool on October 2nd, 16th, 22nd and 24th.

252. NIGHTJAR *Caprimulgus europaeus* One on passage at Fenwick on May 14th (A.B.). None heard near Dipton Wood on June 1st, but two heard "reeling" on July 12th and August 8th (R.M.T.G., W.M.B.).

255. SWIFT *Apus apus* Spring arrival well reported: first seen over the Tyne at Howford on April 26th (W.M.B., R.M.T.G.) and birds recorded at Teesmouth and Newcastle on the following day (D.T.P., E.S.).

Breeding birds left Haltwhistle on the evening of August 14th (M.P.).

258. KINGFISHER *Alcedo atthis* Two single birds reported outside their usual breeding range: one at Teesmouth in November and one at Holywell Dene in December (R.M.W.).

261. HOOPOE *Upupa epops* One reported by P.J. Short at Norham in north Northumberland on May 9th; no description was given, but Mr. Short has had twenty years experience of bird keeping and is unlikely to have confused this species. Another at Ravensworth on May 29th (G.D.S.).

262. GREEN WOODPECKER *Picus viridis* "Noticeable increase in the numbers of green woodpeckers in the Haltwhistle and South Tyne area." (M.P.).

263. GREATER SPOTTED WOODPECKER *Dendrocopos major* A pair regularly visited a bird trap at Durham City to feed on suet (J.C.C.); from February 4th one bird made similar regular visits to a hanging food-cage at Craster (J.M.C.).

264. LESSER SPOTTED WOODPECKER *Dendrocopos minor* One drumming near Wylam on April 10th and 24th (J.S.B.); one at Hurworth Burn on November 27th (F.W.).

265. WRYNECK *Jynx torquilla* One on Holy Island on August 29th (E.L.A.); one at Hartlepool on September 17th (J.S.B.).

273. SHORE-LARK *Eremophila alpestris* Two seen at close range at Marsden on November 5th (J.G.).

274. SWALLOW *Hirundo rustica* First records of spring arrival: a single bird at Haltwhistle on April 5th, but none seen for a further ten days (M.P.); one near Ponteland on April 9th (G.F.A.M.); one at Whittledene Reservoirs on April 10th (C.E.M.). The first major influx took place between April 15th and 17th.

One pair nested under the eaves of a house at Stockton (A.L.C.).

Late autumn records: five at Crimdon Dene on November 4th (E.S.); one at Whitley Bay on November 6th (S.R.S.); a juvenile at Seaham on November 23rd (E.S.); a juvenile at Cullernose on November 27th (W.S.C.).

276. HOUSE-MARTIN *Delichon urbica* First recorded at Seaton Sluice on April 9th when a single bird seen (C.J.G.).

277. SAND-MARTIN *Riparia riparia* First record of spring arrival on April 4th at Hurworth Burn (E.S.); eight near Stanley on April 8th (R.M.P.); 30 at Bolam Lake (G.F.A.M.) and one at Seaton Sluice on April 9th (C.J.G.).

279. RAVEN *Corvus corax* A visit to a number of breeding sites known from previous years proved negative (R.C., D.A.R.); three pairs nested in north Northumberland, one of which was robbed (A.J.C.).

281. HOODED CROW *Corvus cornix* The number of records in 1960 shows an increase on most previous years. Because of a possible change in status, all records are given. *Gosforth Park area*: one on January 12th (E.L.A.); up to six seen at one time between February 12th and 19th (R.M.W., G.F.A.M., N.J.A., J.H.N.); seven on April 6th (E.R.). *North Northumberland*: three at Embleton on January 2nd (W.S.C.); five at Druridge Bay on January 3rd (H.T.); one at Scremerston on February 6th (F.B.); one at Craster on February 28th (W.S.C.); one at Meldon Station on March 13th (H.T.); two at Seahouses and three at Embleton on April 2nd (R.M.W., W.S.C.); three at Craster on April 10th; one at Howick and one at Embleton on April 24th and 30th respectively (W.S.C.). *Durham*: a maximum of four near Rowlands Gill between March 1st and 12th (J.R.); two near Coxhoe on March 4th (A.L.C.). *Teesmouth*: one on February 5th and 6th (P.J.S., J.H.); one on March 26th (P.J.S.); two on April 15th and 23rd and one on April 30th.

In autumn first noted on October 21st when 25 to 30 came in off the sea near Embleton (J.M.C.) and 12 seen near Hartlepool (E.S.); on October 22nd birds were coming in off the sea all day in the St. Mary's Island area (R.M.W.); five at Cullernose on October 30th (W.S.C.); four on the sands at Beal on November 12th (E.L.A.); three at Stanley on December 8th (R.M.P.); two at Seaton Sluice on December 11th (R.M.W.); two near Blagdon on December 27th (E.L.A.); three on Fenham Flats on December 31st (F.B.).

294. LONG-TAILED TIT *Aegithalos caudatus* A large flock of 40 at Rowlands Gill on February 20th (J.R.).

296. NUTHATCH *Sitta europaea* Five pairs estimated to be present at Eggleston, near Barnard Castle, in late April (D.T.P.) is the largest number reported from one locality in County Durham. One was seen in July and September at Middleton-in-Teesdale (H.W.). Two were seen on the banks at Durham City, where one or two have been recorded repeatedly for the last ten years. These nuthatches are remarkably quiet and the loud whistle which is so common in the south of England has not been heard here (J.C.C.).

302. FIELDFARE *Turdus pilaris* On April 27th late flocks of 33 at Holywell and about 100 at Seghill (D.T.P.).

First autumn record at Teesmouth on October 2nd; a considerable immigration on October 18th when flocks were seen flying south almost continuously, while the observers travelled from the Tyne to Holy Island (J.H.A., G.W.T.); a westerly movement observed on October 22nd (R.M.P., E.M.) and large passages seen on October 24th, 28th, 29th and 31st (W.S.C., R.M.P.).

303. SONG-THRUSH *Turdus philomelos* Immigration observed from St. Mary's Island on the afternoon of September 17th (D.T.P.).

304. REDWING *Turdus musicus* Many corpses found along the banks of the River Tweed at Berwick on March 1st, apparently as a result of the severe cold weather (E.L.A.).

Autumn passage: six birds at St. Mary's Island on September 17th (R.M.W., D.T.P.); a considerable influx at Seahouses on September 29th and 30th, and at Craster on the night of October 1st/2nd; numbers seen with fieldfares in the large movements of late October (W.S.C., G.W.T., J.H.A. *et al.*); marked southward passage at Berwick on night of October 3rd; continuous passage inland at Holborn Moss between 0630 and 0730 hours on November 12th (F.B.).

305. DUSKY THRUSH *Turdus eunomus* Fully reported in 1959 (*O.R. for 1959*). Last seen at Hartlepool on February 7th (G.F.A.M.).

308. BLACKBIRD *Turdus merula* A roost containing about 150 birds (the majority males) found in a cemetery at Darlington on January 16th (V.F.B.). About 50 on Holy Island on March 22nd after a large overnight passage (J.C.C.). Large numbers coming in from the sea at Craster on October 17th (J.M.C.).

311. WHEATEAR *Oenanthe oenanthe* One at Teesmouth on the unusual dates of January 2nd, 7th, 9th and 10th (E.S., P.J.S., J.H.); one at Holy Island on March 22nd (J.C.C.); one at Howick on March 23rd (W.S.C.).

About 200 in the St. Mary's Island area, and over 150 between Crimdon Dene and Teesmouth on September 17th, a day of exceptional passage; late birds at St. Mary's Island on November 13th (D.T.P., R.Cl.) and at Teesmouth on November 7th and 26th.

317. STONECHAT *Saxicola torquata* No breeding records received. At least four at Crimdon Dene in January and three in February (R.A.McK., E.S.); one in the St. Mary's Island area in February (A.L.C., S.R.S.); a pair at Holborn in January and single birds at Scremerston, Fenham Mill and Cheswick in February (F.B.); a pair on passage near Seahouses on April 6th (R.M.W.).

Autumn and winter records are from Budle Bay (two birds) (C.M.A., S.R.S.); Seaton Sluice (three birds) and Bamburgh (six birds) (R.M.W.); Embleton (one bird) (W.S.C.); Billingham (one bird) (A.L.C.) and Crimdon Dene (two birds).

— "SIBERIAN" or "ASIAN" STONECHAT A bird, seen at Hartlepool by A.V. and R.A.McK., on October 26th differed from the typical stonechat and was first thought to be a juvenile whinchat. It was, however, considerably smaller, lacked the white eye-stripe and showed a conspicuous pale, buff-pink rump, which was oval in shape and contrasted with the black tail. Its head and back were medium brown with the head slightly darker than the back.

This description fits the Siberian Stonechat *Saxicola torquata maura* (c.f. *Handbook*), a geographical sub-species of the stonechat, and the bird was provisionally identified as such. The *British Birds* Rare Birds Committee considered the record and was "in general agreement that the bird must have been one of six or so races of

S. torquata from Asia." Most of these cannot be separated in the field, and this record cannot, therefore, be ascribed to one particular race.

318. WHINCHAT *Saxicola rubetra* An exceptional record of a single bird feeding with a great tit and two goldfinches at Seaton Sluice on January 3rd (D.T.P.).

A passage observed on the coast on September 17th and 18th and several birds seen at Budle Bay, Whitley Bay and Sunderland (R.H.L., C.M.A., D.T.P.) and at least 57 recorded between Crimdon Dene and Teesmouth. Late records: one at Whitley Bay on October 22nd (R.M.K.) and one at Crimdon Dene on November 4th (E.S.).

— . RED-FLANKED BLUETAIL *Tarsiger cyanurus* A bird of this species was seen near St. Mary's Island between 1400 and 1630 hours on October 16th by D.T.P. and B.G., and subsequently by several other observers.

The following field notes were obtained by D.T.P.: approached to within six feet; quite tame; about the size of a stonechat; flicked tail up and down; wings grey-brown; head greenish with pale buff eye-stripe and a suspicion of a blue-grey tuft on the back of the head; underparts cream-grey with a dark greenish-brown chest patch; flanks with orange patches; tail and lower rump cobalt-blue and forked; under tail coverts white; legs longish and dark; fed on insects taken from the ground but failed at "flycatching."

This is the first record from Northumberland and the third* from Great Britain (see *Scot. Nat.* 60, 6-7, *British Birds* 47, 28-30, 51, 37 and 54, 73).

320. REDSTART *Phoenicurus phoenicurus* First arrivals recorded on April 19th at Whalton (H.T.).

A very large passage on September 16th and 17th: about 40 on Holy Island (J.P.D.); fairly large numbers near Seahouses (E.A.R.E.); 17 at Craster (J.M.C.); about 200 in the St. Mary's Island area (D.T.P., R.M.W.); a similar number between Crimdon Dene and Teesmouth. Some still present on September 18th, but a marked decrease at Hartlepool and Teesmouth. Last recorded on October 22nd at Hartlepool.

321. BLACK REDSTART *Phoenicurus ochruros* Only one spring record, a female on Inner Farne on May 16th to 18th (G.H.).

* There is an additional "probable" record in Lincolnshire in 1903.

All but two of the autumn records refer to October: a total of 12 birds reported from Holy Island, St. Mary's Island and Hartlepool. One at Teesmouth on December 10th.

324. BLUETHROAT *Cyanosylvia svecica* A male red-spotted blue-throat in full breeding plumage on Inner Farne on May 21st (E.A.R.E.). All other records refer to the large movement of migrants which occurred on September 16th and 17th—on the 16th, one at Bamburgh and a pair at Newton (E.A.R.E.), and on the 17th, three (possibly four) at St. Mary's Island (D.T.P., S.R.S.) and probably not less than nine at Hartlepool (V.F.B., J.S.B.).

325. ROBIN *Erithacus rubecula* About 100 between St. Mary's Island and Seaton Sluice on September 17th (D.T.P.); and "numbers" on Farne Islands on September 19th (E.A.R.E.). An influx reported at Hartlepool on October 23rd and at South Shields on October 26th (S.H.).

327. GRASSHOPPER-WARBLER *Locustella naevia* First record on April 26th near Dipton Wood (W.M.B.); one singing in Gosforth Park on May 4th (R.M.W.) and a pair near Stanley on May 5th (R.M.P.).

333. REED-WARBLER *Acrocephalus scirpaceus* One at Gosforth Park Lake on May 4th and breeding proved (R.M.W.).

337. SEDGE-WARBLER *Acrocephalus schoenobaenus* A survey of Tanfield ponds showed 16 males singing on May 5th (R.M.P.). A single male singing in the same place on September 26th (R.M.P.). One at Seaton Sluice during the passage of September 17th (D.T.P.).

339, 340. MELODIOUS WARBLER *Hippolais polyglotta* and ICTERINE WARBLER *Hippolais icterina* A warbler, about the size of a white-throat, was seen amongst the rocks around St. Mary's Island on September 17th by R.M.R. and S.R.S. and approached to within four feet. In general shape it resembled a whitethroat with a pronounced steep forehead; wings and back were olive-green, breast yellow; legs dark bluish-grey; bill dark; head coloured as back with a light eye-stripe. Its flight was low and rapid and it tended to hide under rocks.

The committee considers that this description is a valid field identification of an icterine or melodious warbler.

On the same day, a possible icterine/melodious warbler was reported from Hartlepool.

The British Birds Rare Birds Committee has accepted a record of an icterine/melodious warbler seen near Blyth on September 18th. No information concerning this bird has been received by the compiler.

344. BARRED WARBLER *Sylvia nisoria* One on the Farne Islands on August 29th (E.A.R.E.); one near St. Mary's Island (D.T.P.) and one (probable) at Blyth on September 17th.

346. GARDEN-WARBLER *Sylvia borin* Included in the movement of September 16th and 17th: several at Seahouses (E.A.R.E.), and at St. Mary's Island (D.T.P.) and at least 23 between Crimdon Dene and Teesmouth. Two late birds at Hartlepool on October 23rd.

347. WHITETHROAT *Sylvia communis* About six near St. Mary's Island on September 17th (D.T.P.) and at least 20 between Crimdon Dene and Teesmouth.

348. LESSER WHITETHROAT *Sylvia curruca* Spring records: one at Fenwick on May 6th and 7th (A.Bl.); one on Inner Farne on May 9th and 13th (C.N.R.).

One at Hurworth Burn on August 12th (E.S.); one at Craster on September 8th (W.S.C.); four between Seaton Sluice and St. Mary's Island on September 17th (D.T.P., R.M.W.) and two in the same place on the following day; two at Hartlepool on September 17th (J.S.B.).

354. WILLOW-WARBLER *Phylloscopus trochilus* Spring arrival: two singing on April 6th at Teesmouth (E.S.) and one at Eggleston and one at Morpeth on April 11th (D.T.P., R.M.P.). Numbers arrived between April 14th and 16th.

During the passage of September 17th, about 50 seen between St. Mary's Island and Seaton Sluice (D.T.P.) and about 100 between Crimdon Dene and Teesmouth. An albino leaf-warbler (*sp.?*) seen at Craster on September 19th (W.S.C.).

356. CHIFFCHAFF *Phylloscopus collybita* A few recorded, mainly singing on passage: one at West Hartlepool on March 22nd (R.J.L., R.T.McA.); three singing near Hexham on April 4th (S.F.); one near Morpeth on April 11th (R.M.P.); one at Netherwitton on April 17th (H.T.); one at Durham City on April 18th and again on May 4th (C.T.L.H.); at least six singing in Hulne Park, Alnwick, on May 7th (C.J.G.).

357. WOOD-WARBLER *Phylloscopus sibilatrix* No breeding records received.

One ringed on Inner Farne on August 27th (E.A.R.E.) and one at St. Mary's Island on September 17th (D.T.P.).

364. GOLDCREST *Regulus regulus* Considerable numbers recorded from the Seahouses area on April 7th (E.A.R.E.) and birds also reported from fishing boats around the Farne Islands.

Autumn passage: six at St. Mary's Island (R.M.W.) and 15 at Hartlepool on October 10th; at least six at Whitley Bay on October 16th and 23rd (D.T.P.); 25 at Hartlepool on October 22nd and others recorded until the end of the month.

366. SPOTTED FLYCATCHER *Muscicapa striata* First recorded on May 14th and 15th (E.M., A.L.C.).

A "few" at St. Mary's Island on August 17th (D.T.P.); "small numbers" at Newton on September 16th and 17th (E.A.R.E.); five at Hartlepool on September 17th; at least six near Budle Bay on September 18th (C.M.A.).

368. PIED FLYCATCHER *Muscicapa hypoleuca* Arrival on coast started about 1200 hours on August 17th and movement continued until nightfall (D.T.P.). A "number" at Beadnell harbour (W.J.) and "small numbers" at Newton (E.A.R.E.) on September 16th; 23 on Holy Island (J.P.D.), about 40 between St. Mary's Island (R.M.W.) and 15 between Crimdon Dene and Teesmouth on September 17th.

370. RED-BREASTED FLYCATCHER *Muscicapa parva* One at Holy Island (J.P.D.) and a female at Seaton Sluice (D.T.P.) on September 17th; a juvenile at Hartley Point on September 25th (D.T.P.); one at Hartlepool between October 1st and 3rd (B.J.C., R.A.McK.) and another on October 22nd (K.S., P.J.S.).

373. MEADOW-PIBIT *Anthus pratensis* Marked increase in numbers noted at Teesmouth between September 10th and 18th, the peak occurring on the last date (V.F.B.).

376. TREE-PIBIT *Anthus trivialis* First recorded on April 9th near Corbridge (W.M.B.).

Included in the movement of September 17th and reported to be "very common in small flocks" at St. Mary's Island (D.T.P.); also reported from Inner Farne on September 19th (E.A.R.E.).

379. ROCK-PIBIT *Anthus spinoletta* At least two pairs bred in the South Shields area (J.C.C.), but there is no information about its breeding status on the rest of the Durham coast.

Inland: one at a pond near Stanley on September 24th (R.M.P.).

380. PIED and WHITE WAGTAIL *Motacilla alba* Eight at Teesmouth on April 10th (J.A.B.); an adult male white wagtail at Killingworth on April 27th (D.T.P.).

381. GREY WAGTAIL *Motacilla cinerea* Only a few winter records outside the usual breeding areas: single birds at Norton on March 1st (A.L.C.), at Seahouses on March 20th and April 3rd (J.C.C., R.M.W.), at Seaton Sluice on October 15th (R.M.W.) and in a main street in Newcastle on November 26th (R.M.P.).

382. YELLOW WAGTAIL *Motacilla flava* First records: one at Teesmouth on April 12th (A.L.C.) and one at Eggleston on April 17th (D.T.P.).

Breeding reported in County Durham from Stanley, Durham City, Derwenthaugh, and in Northumberland at Holywell ponds, Seaton Burn, Wallsend Swallow, Killingworth pond, Allenheads, near Corbridge, and in the valley of the East Allen.

383. WAXWING *Bombicilla garrulus* A few reported from the 1959 invasion, but none in the autumn and winter of 1960.

Three at Gateshead on January 1st and 2nd (D.T.P.); one at Darlington from January 7th to 17th was joined by a second bird on January 10th (V.F.B.); two at Ponteland on February 7th (S.H.); three at Seaton Burn on February 14th (R.M.P.); one near Morpeth on February 18th; three at Gosforth on March 8th (C.J.A.); one at Rowlands Gill on March 14th (J.R.).

384. GREAT GREY SHRIKE *Lanius excubitor* An influx of this species produced several records in late October: one near Coxhoe on October 3rd (E.S.); three together at Stanley on October 22nd (R.M.P.); one at Whitley Bay on October 23rd (C.E.D., D.T.P., R.M.W., S.R.S.); one at Hartlepool on October 21st and two on October 23rd; one (ringed) at Fenwick on October 30th (A.Bl.).

Others reported: one near Embleton on November 20th; one near Cambo on December 11th (E.L.A.); one (perhaps the same bird) at Craster on several days in late December (W.S.C., J.C.); one near Hurworth Burn Reservoir on December 27th (I.S.).

385. LESSER GREY SHRIKE *Lanius minor* One at Coxhoe on October 25th (E.S.). A record of one at Embleton on October 29th, which has already appeared in "Recent notes and records" in *British Birds*, cannot be accepted because the description does not exclude the possibility that it was a great grey shrike.

388. RED-BACKED SHRIKE *Lanius collurio* One at West Hartlepool on May 13th (F.W.); one at Shiremoor on May 24th (J.R.P.); one at Holy Island on September 17th (J.P.D.); a juvenile female at Craster on September 18th (E.A.R.E.); five (probably different birds) between St. Mary's Island and Seaton Sluice on September 17th and 18th (D.T.P., R.M.W., S.R.S.); two at Teesmouth on September 18th (V.F.B.).

389. STARLING *Sturnus vulgaris* Roosts: a roost containing about 40,000 at Consett Iron Works in January; a large roost (estimated at 500,000-1,000,000* at Sherburn, near Durham City, in January, and again in December (R.M.P.); a summer roost in bushes at Tanfield ponds, Stanley, in mid-June, numbered about 3,500 (mainly juveniles) on June 24th, but was deserted soon after (R.M.P.).

391. HAWFINCH *Coccothraustes coccothraustes* Only two records: one at Ravensworth Park on May 2nd (D.T.P.) and two juveniles and an adult at Chester-le-Street between June 22nd and July 3rd (J.A.B.).

394. SISKIN *Carduelis spinus* Three seen feeding in alders near Norton on January 26th (A.L.C.). "A great many" in larch and birch woods around Haltwhistle between April 10th and 23rd (M.P.).

A very large influx in mid-September: birds appeared in the Seahouses area on 16th and were still plentiful in north Northumberland on 19th (E.A.R.E., W.S.C. *et al.*); between 45 and 60 flew in off the sea at St. Mary's Island on 17th and next day about ten were present (D.T.P.); on 18th a flock of 90-100 at Whitburn (R.H.L.) and 39 at Hartlepool. Numbers on the coast soon decreased and birds apparently made their way inland; many were seen in alder woods at Haltwhistle on November 7th (M.P.).

396. TWITE *Carduelis flavirostris* Only one record giving reliable evidence of identification: a flock of 40 seen at Haltwhistle on October 12th (M.P.).

401. BULLFINCH *Pyrrhula pyrrhula* Two reports suggest this species may be increasing: in late February, ten pairs counted within one square mile near Rowlands Gill (J.R.); many more broods of young than usual seen in July around Craster (J.M.C.).

404. CROSSBILL *Loxia curvirostra* Single males seen at Craster on March 7th and April 3rd (J.M.C., W.S.C.); several heard calling in Dipton Wood on April 23rd (A.J.C.).

* It should be borne in mind that any estimate of the size of such a large roost is liable to considerable error.

Birds were seen and heard throughout July in the Middleton-in-Teesdale area and on July 21st three birds were seen, one of which fed the other two, suggesting that this was a family party (H.W.). This is the only evidence of breeding in 1960.

408. BRAMBLING *Fringilla montifringilla* Very few reported. Recorded in January at Hart Dene (J.H.), Rowlands Gill (J.R.), Team Valley, Gateshead (D.T.P.) and Stamfordham (B.C.). A flock of up to 180 at East Ord, near Berwick, in February (F.B.).

Two autumn records: one at Whitley Bay on October 16th (D.T.P.); three at Hartlepool on October 25th (A.L.C.).

410. CORN-BUNTING *Emberiza calandra* Up to three birds seen in the Craster-Embleton area from mid-March to early July and males heard singing, but breeding not proved (J.M.C., W.S.C.). According to J.E.R. it formerly bred in this area.

422. LAPLAND BUNTING *Calcarius lapponicus* One near St. Mary's Island on April 18th (J.D.P.) is the only substantiated record. Detailed notes received on plumage, including black moustache-stripe, brown crescent-shaped mark on breast, pale yellow bill and yellow-brown rump. Crouching stance on ground noted.

423. SNOW-BUNTING *Plectrophenax nivalis* Flocks of 120 and 180 seen in Haydon Bridge area in February (A.J.C.). Early record: an adult male at St. Mary's Island on August 16th (D.T.P.). Very few autumn and winter flocks reported, the laigest being 40 at Bamburgh on November 12th (E.L.A.).

Key to the initials of those contributing to this report:—

C. M. Adamson, J. Alder, G. S. Anderson, R. St. Andrew, N. J. Armstrong, E. L. Arnold, J. H. Arthur, J. S. Ash, J. A. Bailey, A. Baldrige, K. Baldrige, A. H. Banks, D. G. Bell, Miss D. N. Bell, M. Bell, A. Blackett, J. S. Booth, C. Bower, C. H. Brackenbury, F. Brady, Miss W. M. Brady, V. F. Brown, B. Campbell, R. J. Clayton, R. Clementson, A. J. Clissold, B. J. Coates, F. Colley, R. Cook, S. E. Cook, Mrs. A. L. Cooper, J. C. Coulson, Sir John Craster, W. S. Craster, J. P. Deacon, C. E. Douglas, E. A. R. Ennion, S. Finderley, B. Galloway, C. J. Gent, Miss C. Greenwell, F. G. Grey, R. G. Grey, Miss R. M. T. Grey, J. Grierson, A. Jobling, W. Johnson, C. T. L. Harrison, S. Hayes, J. Henderson, Mrs. G. Hickling, L. P. Hird, P. Hogg, Mrs. E. M. Lamb, R. J. Lightfoot, Miss E. M. Lobley, R. H. Lowe, A. MacDonald, C. E.

Marshall, R. T. McAndrew, R. A. McKinlay, E. Miller, G. F. A. Munns, J. H. Neesham, A. W. B. Nelson, P. New, J. C. Nicholson, R. M. Palmer, D. T. Parkin, J. D. Parrack, M. Passman, M. Philipson, J. R. Potts, G. Proctor, D. A. Ratcliffe, J. Ratcliffe, B. G. Redhead, P. Reid, C. S. Richardson, Hon. M. W. Ridley, M. G. Robinson, E. Robson, C. N. Rollin, J. E. Ruxton, D. R. Seaward, Mrs. P. Seaward, E. Shearer, G. D. Sinclair, K. Smith, R. Smith, P. J. Stead, I. Stewart, S. R. Stobart, E. H. Taylor, H. Tegner, I. M. Telfer, G. W. Temperley, G. Tuffnell, A. M. Tynan, A. Vittery, C. Watson, H. Watson, T. Winter, R. M. Wood, F. Wrigglesworth.

In addition records have been taken from the Teesmouth Bird Bulletin where, in the case of common species, the recorder was not specified.

BLUE-WINGED TEAL ON COWPEN MARSH IN 1881

Additional information about the note on this bird in *A history of the birds of Durham* by G. W. Temperley (*Trans. Nat. Hist. Soc. Northumb.* 9, 177-178) has come to light as a result of the researches of P. J. Stead, who writes:—

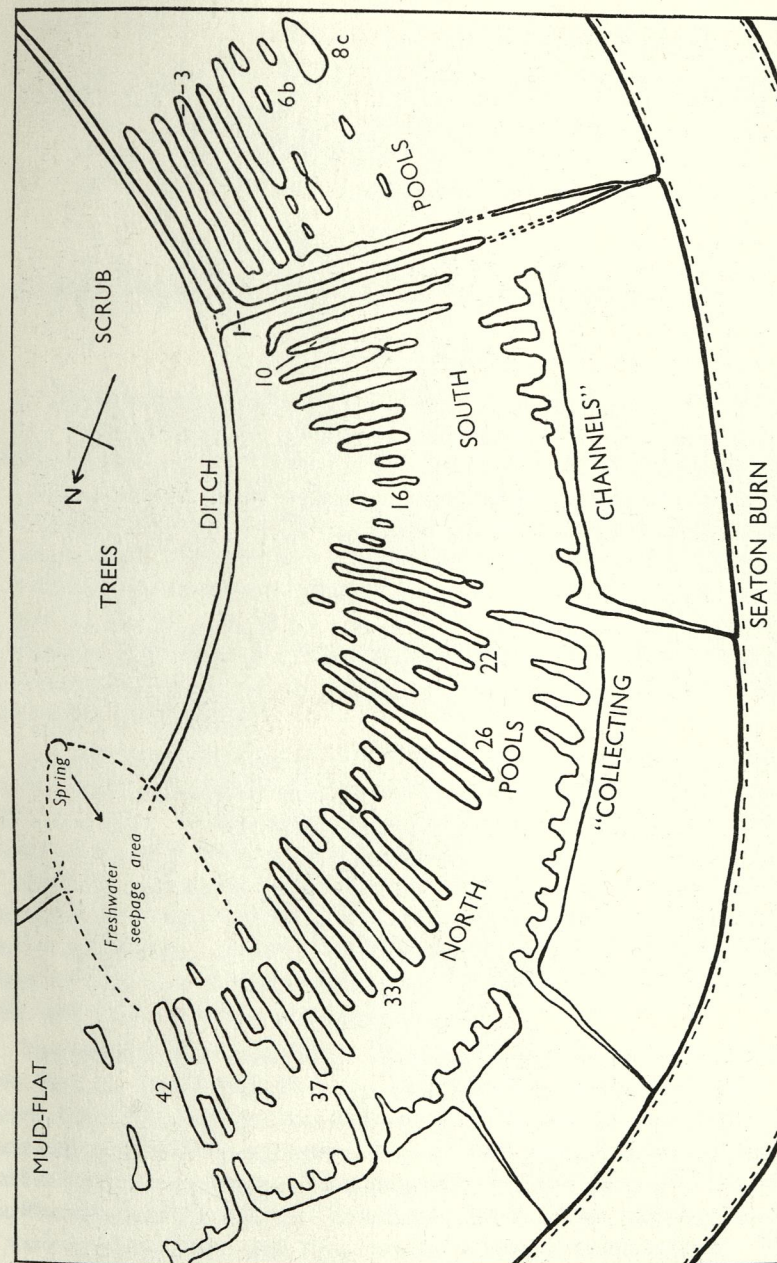
“..... it is in actual fact an immature garganey. The specimen is almost certainly that in the Nelson collection at the Middlesbrough Museum. Nelson's library is in this museum and checking on this record in his own copy of the *Zoologist*, I found the following note alongside the entry 'examined by Howard Saunders, February 1885 and proved to be immature drake garganey.' Later I came across a note in the *Zoologist* 1885, p. 113, where Nelson withdraws the record.”



A SALT MARSH at Seaton Sluice, Northumberland

Photograph by D. W. Sutcliffe, B.Sc., Ph.D.

FIG. 1



The distribution of pools in the salt marsh at Seaton Sluice (semi-diagrammatic).

SALINITY FLUCTUATIONS AND THE FAUNA IN
A SALT MARSH, WITH SPECIAL REFERENCE
TO AQUATIC INSECTS

by

D. W. SUTCLIFFE, B.Sc., PH.D.

Zoology Department, King's College, University of Durham

INTRODUCTION

It has long been known that at least one Trichopteran, *Philanisus plebeius* Walker (Hudson, 1904), and numerous Diptera can live in the sea, but little is known concerning the range of salinities tolerated by the majority of aquatic insects. In particular, although there are many records of insects in salt marshes and associated brackish-water habitats, regular observations of salinity in relation to the fauna of these habitats have not been made, with one exception (Nicol, 1935). The presence of a small salt marsh at Seaton Sluice, Northumberland, provided an ideal opportunity to begin such a study, and it is hoped that the results presented here may provide a stimulus to continue observations of this kind.

The salt marsh is situated in a wide bend of Seaton Burn, on its southern bank, approximately half-a-mile inland from the old harbour of Seaton Sluice. It lies at the head of a small tidal mud flat, and consists of a narrow strip of rough pasture, about one acre in extent, in which the dominant species is *Festuca rubra*. The pasture is intersected by a very regular series of shallow channels cut out of the muddy substratum. These channels are aligned in two directions (Figure 1) and are interconnected by "collecting channels" which drain into the burn at several points.

The origin of the channels is obscure. They certainly appear to have had no connection with the salt industry which flourished at Seaton Sluice (formerly known as Hartley) in the seventeenth century. Three salt pans were in operation before 1690, and Greenville Collins' chart in the Coasting Pilot of 1693 indicates that the pans were situated near the mouth of the estuary (Tomlinson, 1902). The salt pans ceased to work in about 1820, and there are no traces of them to-day. The channels lie in so regular a pattern that the work of man is indicated.

Originally they may well have been smaller channels cut in order to drain the area and allow the formation of a pasture for cattle. It seems unlikely that the channels have been formed solely by the action of tidal water moving across a mud bank, and the appearance of the salt marsh does not conform to the description of salt marshes which have evolved naturally (e.g. Steers, 1934).

Each channel is approximately 30 feet long and 3-5 feet wide, with vertical sides which are stabilised by grass roots. The bottom is composed of thick black mud, overlain by a layer of fine coal dust swept down the burn from a colliery. This coal dust has penetrated the entire salt marsh and the mud flat, clouding the water whenever the bottom is disturbed. Early in 1959 a screen was put into operation at the colliery, preventing further discharge of coal dust into the burn.

Seaton Burn and its estuary are confined within a steep-sided valley lined with deciduous trees, chiefly sycamore, elm, beech and birch. During the autumn falling leaves are blown on to the salt marsh, and many of the channels contain considerable quantities of decaying leaves during the winter months. The channels are bare of vegetation, but *Chaetomorpha*¹, a green, filamentous brackish-water alga, appears occasionally during the summer and grows abundantly in some channels during the autumn. The alga did not occur in the salt marsh between January and June.

SALINITY

During periods of high spring tides, and after very heavy rainfall, many of the channels were confluent with the "collecting channels." Usually, however, the channels were isolated from one another and formed a series of independent pools, as shown in Figure 1. Consequently the salinity of the water could vary considerably in different parts of the salt marsh, depending on the extent to which high tides inundated the pools. The extreme northern pools, nearest to the mud flat, lie eight feet about Ordnance Datum whereas the inland end of the salt marsh is slightly more than nine feet above Ordnance Datum.

Methods.—The salt marsh was visited at fairly regular intervals from October 1956 to June 1959. During each visit water samples were taken from eight pools which were selected as representative of the salinity conditions in the salt marsh. Samples were withdrawn from immediately above the bottom mud, using a long glass tube, and care was taken not to include the mud itself. Regular records

¹ Kindly identified by Dr. Betty Moss

of the depth of the pools were also obtained, but these are not included in the presented data; it should be sufficient to note that in most instances the salinity of the pools did not increase appreciably when the water level dropped. The pools were completely filled only after periods of heavy rain and after spring tides.

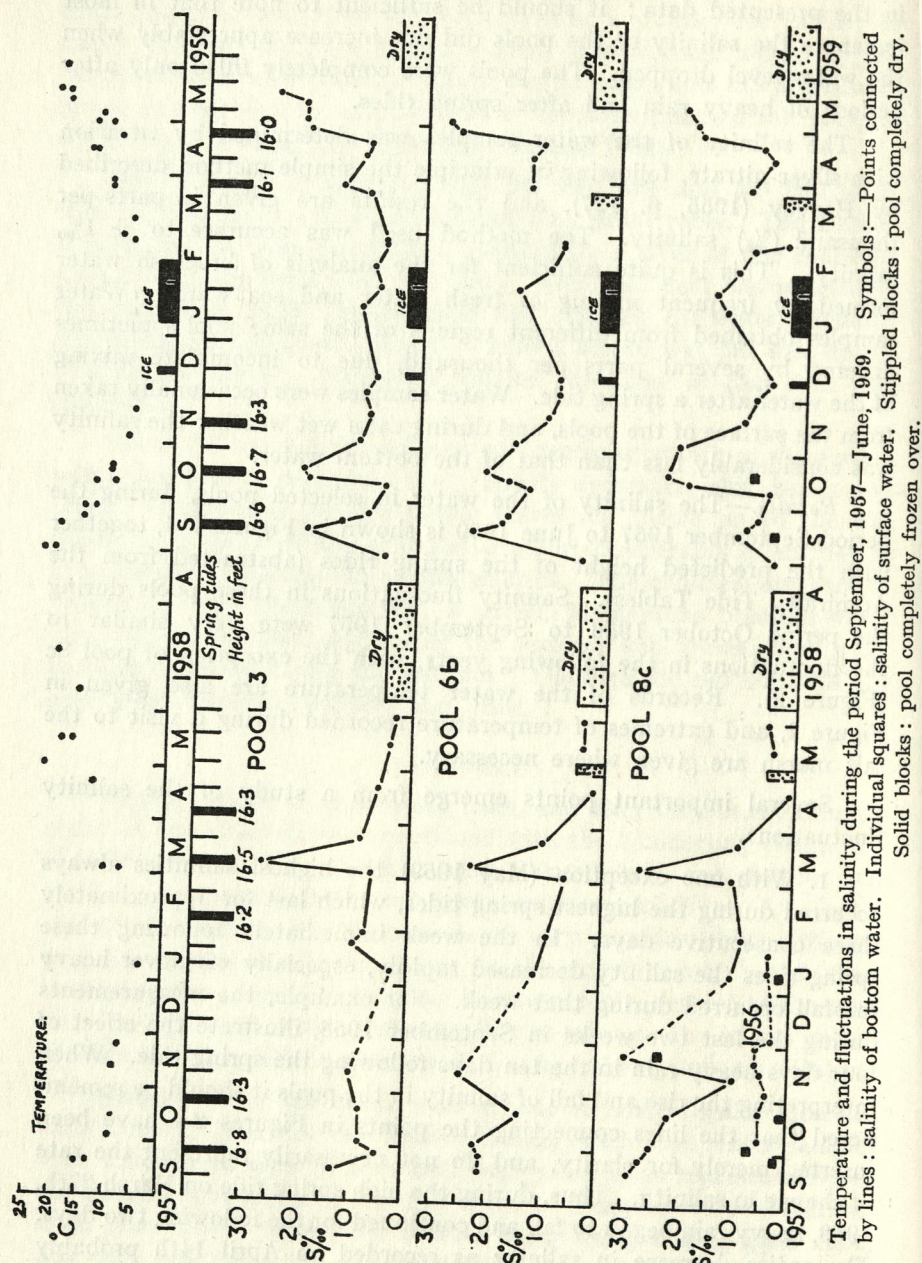
The salinity of the water samples was determined by titration with silver nitrate, following in principle the simple method described by Harvey (1955, p. 127), and the results are given in parts per thousand (‰) salinity. The method used was accurate to $\pm 1\%$ salinity. This is quite sufficient for the analysis of brackish water formed by frequent mixing of fresh water and sea water. Water samples obtained from different regions of the same pool sometimes differed by several parts per thousand, due to incomplete mixing of the water after a spring tide. Water samples were occasionally taken from the surface of the pools, and during calm wet weather the salinity was considerably less than that of the bottom water.

Results.—The salinity of the water in selected pools, during the period September 1957 to June 1959 is shown in Figures 2-4, together with the predicted height of the spring tides (abstracted from the Admiralty Tide Tables). Salinity fluctuations in these pools during the period October 1956 to September 1957 were very similar to the fluctuations in the following years, with the exception of pool 8c (Figure 2). Records of the water temperature are also given in Figure 2, and extremes of temperature recorded during a visit to the salt marsh are given where necessary.

Several important points emerge from a study of the salinity fluctuations.

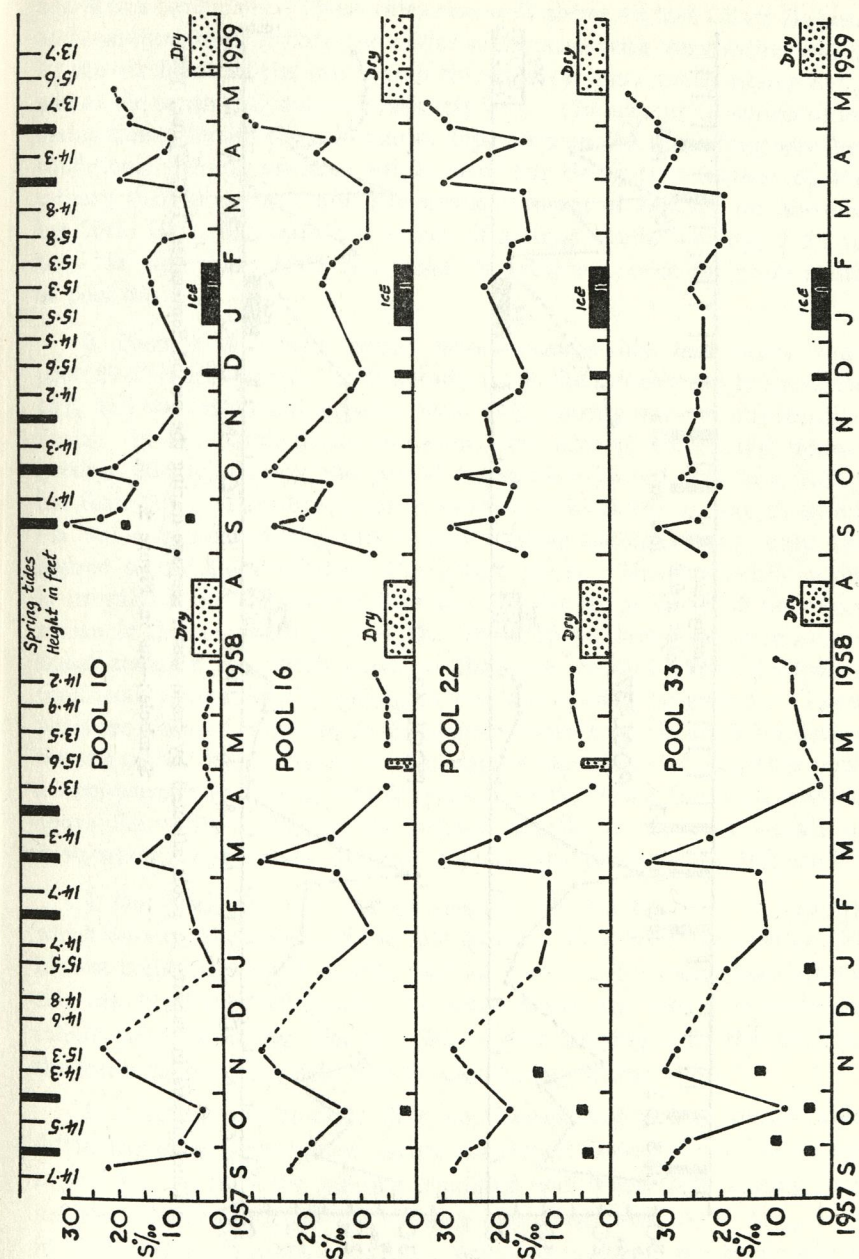
1. With one exception (May 1959) the highest salinities always occurred during the highest spring tides, which last for approximately three consecutive days. In the week immediately following these spring tides the salinity decreased rapidly, especially whenever heavy rainfall occurred during that week. For example, the measurements during the last two weeks in September 1958, illustrate the effect of four days heavy rain in the ten days following the spring tide. When interpreting the rise and fall of salinity in the pools it should be remembered that the lines connecting the points in Figures 2-4 have been inserted merely for clarity, and do not necessarily represent the rate of change in salinity. Thus, during the high spring tide on March 27th, 1959, heavy rain began to fall and continued for the following two days. The entire decrease in salinity as recorded on April 14th probably occurred during the period of heavy rain.

FIG. 2



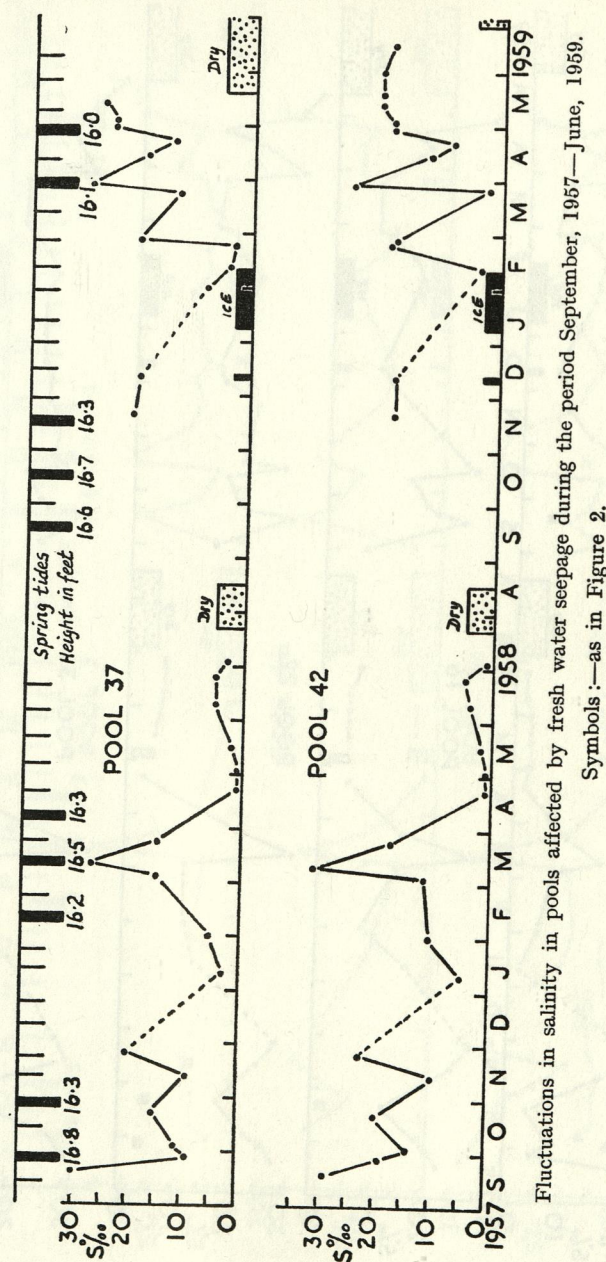
Temperature and fluctuations in salinity during the period September, 1957—June, 1959. Symbols:—Points connected by lines: salinity of bottom water. Individual squares: salinity of surface water. Stippled blocks: pool completely dry. Solid blocks: pool completely frozen over.

FIG. 3



Fluctuations in salinity during the period September, 1957—June, 1959. Symbols:—as in Figure 2.

FIG. 4



2. The most important spring tides were those of the September and March equinoxes. These tides rise well above 16 feet Chart Datum, and consequently inundate the entire salt marsh with very saline water. At the north end of the salt marsh the salinity was usually about 33‰, and at the south end was only slightly less. The extent to which other spring tides affected the salt marsh depended on the prevailing weather conditions. Strong onshore winds force the rising tide further up the estuary than is normal, and the measurements of salinity on November 25th, 1957, illustrate the effect of strong winds backing a 15 ft. tide. In November 1958 the same tide did not reach the pools south of pool 30.

3. Pools 1-16 (south pools) were considerably less saline than pools 20-42 (north pools). In the south pools the salinity rarely exceeded 15‰ and was often not greater than 10‰ during several consecutive weeks. In the north pools, however, the salinity fluctuated mainly between 20-30‰ during the period September-March, and was rarely less than 15‰. This difference in salinity reflects the extent to which sea water inundated the salt marsh during spring tides; only the highest spring tides affected the south pools. Measurements taken at irregular intervals showed that the salinity in pools 23-32 was very similar to that recorded in pool 33. Pools 36-42, however, were exceptional amongst the north pools in that the salinity often fluctuated considerably, occasionally falling to well below 10‰ (Figure 4). These pools are situated opposite to the point where a small ditch bordering the salt marsh discharges on to the edge of the mud flat, together with a semi-permanent spring which collects water from the high ground above the valley. During the winter months a constant trickle of fresh water seeps across the salt marsh into pools 36-42 (Figure 1).

4. One pool did not always display the fluctuations in salinity which were characteristic of the salt marsh. Pool 8c is isolated on the highest point in the salt marsh, and only an exceptionally high spring tide can flood into the pool. At other times the small increases in salinity were probably due to saline water seeping into the pool as the water table of the salt marsh rose during spring tides.

It is interesting to note that, in consecutive years, considerable differences in salinity existed during the period September to December in pool 8c. In 1956 the salinity remained well below 10‰ during four months, whereas in 1957 the salinity remained well above 10‰ and, in 1958, the fluctuations in salinity followed more closely those which occurred in the other pools.

5. In 1957 and 1958, from April until the high spring tides in early September, the salinity in practically all of the pools was consistently below 10‰ and, in the south pools at least, the water was derived mostly from heavy rainfall. Many of the north pools, however, were periodically filled with water of low salinity when spring tides came over the mud flat. During prolonged periods of fine weather all of the pools completely dried out, and this first occurred in late May or early June in 1957, 1958 and 1959.

6. During nearly three years of observation the salinity of the pools exceeded 33‰ only on one occasion. On April 24th, 1959, a high spring tide raised the salinity to approximately 30‰ in most of the pools. During the following six weeks the weather remained fine and warm and, as the water gradually evaporated, the salinity approached that of normal sea water. On May 12th the salinity in pool 26 was 35‰, and in pool 33 was 34‰, where several larvae of *Limnephilus affinis* Curtis were still alive. On May 17th the salinity was 36‰ in pool 33 and no live *L. affinis* were found. Pool 26 had dried out, and in pool 31, which contained only half an inch of water, the salinity was 39‰. With the exception of two pools the entire salt marsh dried out a few days later. In pool 38 the salinity remained below that of sea water, and in pool 42 the salinity remained constant at 22‰ for more than two weeks, when it finally dried out.

THE FAUNA

At least two major environmental factors affect the temporal distribution of the salt marsh fauna, viz. salinity, and periodic droughts during the summer months. The change from a "winter phase," with permanent pools of highly saline water, to a "summer phase" with impermanent pools containing water of less than 10‰ salinity, is also reflected by changes in the composition of the fauna. In an attempt to illustrate these changes, the animals which were found in the salt marsh during the investigation have been placed in the following categories.

- Group I.* Salinity range: 1 — 33‰.
Occurrence: Throughout the year.
- CRUSTACEA Isopoda: *Sphaeroma rugicauda* Leach
Amphipoda: *Corophium volutator* (Pallas)
Gammarus duebeni Lilljeborg
- INSECTA Diptera: *Chironomus aprilinus* Meigen
Aedes detritus Haliday
- Coleoptera: *Colymbetes fuscus* (L.)
- PISCES *Gasterosteus aculeatus* L.

- Group II.* Salinity range: 1 — 33‰.
Occurrence: August to May.
- ANNELIDA Polychaeta: *Nereis diversicolor* O. F. Müller
- INSECTA Trichoptera: *Limnephilus affinis* Curtis
- Group III.* Salinity range: 1 — 33‰.
Occurrence: May to October whenever the pools contained water. Particularly common from August to October, and all were present during the September spring tides.
- INSECTA Hemiptera-Heteroptera: *Gerris thoracicus* Schummel
Diptera: *Cricotopus vitripennis*
var. *halophilus* (Kieffer)
Ephydra riparia Fallén.
ARANEIDA *Lycosa* (*purbeckensis* ?)
- Group IV.* Salinity range: less than 10‰.
Occurrence: May until the September high spring tides.
- INSECTA Hemiptera-Heteroptera: *Gerris rufoscutellatus* (Latreille)
Gerris lacustris (L.)
Corixa sahlbergi (Fieber)
Corixa nigrolineata (Fieber)
Corixa dorsalis Leach
Corixa punctata (Illiger)
Diptera: *Chironomus riparius* Meigan
Coleoptera: *Haliplus lineatocollis* (Marshall)
Agabus bipustulatus (L.)
Ilybius fuliginosus (Fabricius)
- Group V.* These are miscellaneous animals, other than insects, which were found on isolated occasions and at various times of the year. They are grouped together merely for convenience.
- CRUSTACEA Cladocera: *Daphnia magna* Straus (November 1956).
- GASTROPODA *Sabanaea* (*Hydrobia*) *ulvae* Pennant
(September 1956; June 1959).
Alderia modesta Lovén (September 1956
and November 1957).
Limapontia depressa Alder

Observations on the occurrence, distribution and salinity tolerance of each species found in the salt marsh are given below.

CRUSTACEA

Sphaeroma rugicauda Particularly abundant immediately after spring tides, and a residual population survived and reproduced in water of less than 5‰ salinity. This species is extremely hardy, and during periods of drought many survived by burrowing down into the mud, which remained permanently moist at a depth of 4-6 inches.

Corophium volutator Less common than *S. rugicauda* and confined mostly to the more saline pools at the north end of the salt marsh. The animals burrowed into the soft mud, and their galleries were extended down into the permanently moist level during periods of drought.

Gammarus duebeni Fairly common, particularly in those north pools which contained a thick layer of dead leaves. During periods of drought they survived by burrowing into the mud. In the summers of 1956 and 1957 individuals were observed moving rapidly across the surface of the dry mud, where the temperature was 22°C.

Copepods Harpacticids were common amongst the fine silt overlying the bottom mud, together with free-swimming *Eurytemora velox* and *Halicyclops aquoreus*. These two species exhibited considerable variation in the characters on which generic and specific differences are based, i.e. segmentation of the antennules and the form and disposition of spines on the caudal rami. These characters appear to be reasonably constant in related fresh-water species (Gurney, 1931-33).

Daphnia magna A large gravid female was found in pool 8c on November 6th, 1956. A number of smaller gravid females was found in the same pool on November 22nd, 1956, and a single female in pool 5. The salinity in pool 8c did not exceed 6‰ during the period when the cladoceran was present. None was found after the end of November. A large culture of *D. magna* was established in the laboratory, and tests were carried out on survival in sea water diluted with tap water. Many died in 15 and 20 per cent. sea water, but some survived and produced young, which also survived in these concentrations of sea water. Neither young nor adults survived for more than a few days in concentrations greater than 20 per cent. sea water (7‰ salinity).

D. magna has been recorded from a quarry pond between Blagdon and Plessey, Northumberland, on May 26th, 1865, and in a pond at Canal Farm, High Barnes, near Sunderland (Brady, 1896). Since then the species does not appear to have been recorded from the north-east of England.

INSECTA

Limnephilus affinis Observations on this euryhaline caddis have been reported in detail elsewhere (Sutcliffe, 1961).

Gerris thoracicus Common on the surface of the pools during the summer months. Several specimens were taken from the north pools where the salinity was 31-33‰, and they remained on the pools during and after the September spring tides. This species was the only water-bug found regularly in the salt marsh, and the presence of nymphal stages indicated that it will breed in brackish water.

Gerris lacustris A single macropterous male was taken amongst numbers of *G. thoracicus* on May 2nd, 1958 (salinity, 3‰).

Gerris rufoscutellatus A single macropterous female was taken on September 4th, 1958, on water of 8‰ salinity. The species is very rare in this country, and all British records are probably due to migration from the continent (Leston, 1956). This is the first undoubted record of the species in Northumberland (see Massee, 1955, and Leston, 1956).

Corixa sahlbergi Found very occasionally during the summer when the pools contained water after heavy rain. Several specimens were recorded in water of 5‰ salinity during the first week in September, 1958, but none was found during or after the high spring tides.

Corixa nigrolineata A few specimens present only once, on September 4th, 1958, in water of less than 10‰ salinity.

Corixa dorsalis Present only once in small numbers on September 4th, 1958, in water of 5‰ salinity.

Corixa punctata Present very occasionally in water of less than 10‰ salinity.

Culicoides maritimus Kieffer Larvae obtained from the pools in July 1956 were reared and the imagines were referred to this species. Larvae were seen regularly during the summer months, but no observations were made on their tolerance to salinity.

Aedes cinereus Meigen Three adult females were collected on September 17th, 1956, amongst large numbers of *Aedes detritus*. Although many adult *Aedes* were collected or reared from larvae during the following years, all those examined were *A. detritus*. Marshall (1938) does not record *A. cinereus* in brackish water.

Aedes detritus Adults and larvae were present in all months of the year except in January and February. The presence of the aquatic stages was, however, correlated with favourable weather conditions, being numerous only after several days of fine, warm weather. When

the fine weather persisted the larvae became very abundant in some pools, but the advent of cold, windy weather resulted in a catastrophic reduction in their numbers. Although the larvae are able to tolerate salinities far greater than that of sea water (Beadle, 1943), they were usually found in the shallow south pools, where the salinity was normally quite low. These pools are sheltered from onshore east winds by a wooded spur on the southern bank of the valley, whereas the north pools are exposed to the wind moving inland across the mud flat. Strong offshore winds, blowing down the valley, also caused a reduction in the numbers of larvae and pupae. It would appear that the distribution of this species is determined by the availability of sheltered, smooth water rather than by the salinity of the water.

Chironomus aprilius and *C. riparius* Imagines were reared in the laboratory from larvae which were found in the salt marsh throughout the year. All of the larvae which were obtained from September to May produced imagines of *C. aprilius*. On the other hand, imagines reared from larvae obtained during May to September were nearly all *C. riparius*, together with a few specimens of *C. aprilius*.

Experiments on salinity tolerance showed that larvae obtained during the summer would not survive in concentrations of sea water greater than 14‰ salinity, whereas larvae obtained during the winter survived in at least 25‰ and imagines emerged in 17‰ salinity. In the salt marsh, the winter population of larvae was able to survive short, periodic immersion in at least 30‰ salinity during spring tides, but the majority of the summer population only survived in low salinities. This was strikingly demonstrated on September 16th, 1958, a few hours after a very high spring tide. The surfaces of practically all of the pools were covered with many hundreds of dead and dying larvae, which were shrunk by the osmotic removal of water. The tide had flooded the south pools with water of at least 20‰ salinity, increasing to more than 30‰ in the north pools. The only larvae which survived were in pool 8c, where the salinity of the bottom water was 12‰. Even here many of the larvae had vacated their tubes and were swimming in the surface waters, where the salinity was only 5‰.

Cricotopus vitripennis Isolated groups of var. *halophilus* larvae occurred periodically during the summer, particularly in pools containing patches of *Chaetomorpha*, amongst which the larvae built small silken tubes. Tubes were also built on the surfaces of dead leaves and pieces of wood. The larvae are chiefly algal feeders, but when several were confined together in petri-dishes, without food, they rapidly devoured one another, particularly those which were metamorphosing into the pupal instar.

Larvae of the typical, coastal form were found in shallow rock pools on the coast at Seaton Sluice, and experiments on salinity tolerance of the two varieties indicate that the estuarine form, var. *halophilus*, is less resistant than the coastal form to salinities greater than that of normal sea water (Sutcliffe, 1960).

Ephydra riparia Imagines were observed "skating" over the surface of the pools during the greater part of the year, although the larvae were uncommon during most of the summer. The larvae occurred in small patches of *Chaetomorpha*, and are possibly dependent on the presence of this alga in the salt marsh since they suddenly became common in September in three consecutive years (1956-58). During this month *Chaetomorpha* grew abundantly, and the *Ephydra* larvae were always found browsing on the alga. Furthermore, larvae were not found in pools where *Chaetomorpha* was absent.

The characteristic pupae were extremely common in the south pools during September 1956 attached to filaments of *Chaetomorpha* and to grass stems hanging below the surface of the pools. Both larvae and pupae were absent in October 1956 and in the following years the larvae again disappeared during the first two weeks in October. At this time the *Chaetomorpha* was still flourishing, and there was no apparent lack of food. It is probable that the larvae were devoured by the large population of caddis larvae (*L. affinis*) which were rapidly increasing in size. The conspicuous larva of *E. riparia* is grey-white in colour and its movements are rather sluggish. When placed in a dish containing *Ephydra* larvae the caddis readily attacked and devoured them, although a supply of *Chaetomorpha* and dead leaves was also provided. Several species of *Ephydra* are well-known inhabitants of extremely saline habitats (Beadle, 1943), and larvae of *E. riparia* survived in salinities twice that of normal sea water (Sutcliffe, 1960).

Colymbetes fuscus Only a few adults occurred during the summers of 1956 and 1957, but approximately 30 specimens were present during September 1958 in a salinity of 5‰. None was found in the north pools, where a recent tide had increased the salinity to between 16‰ and 23‰. Later the number of adults decreased considerably during the September spring tides, but several remained and survived in a salinity of 30‰, decreasing to 23‰ within four days. These adults remained in salinities of 18-23‰ for several weeks.

A few larvae were found during the winter months, and these must have survived periodic immersion in at least 30‰ salinity. Several dozen larvae were present in September 1958 and these were still alive after the spring tides. No satisfactory indication of their tolerance

to increased salinity was obtained in the laboratory, but from observations in the field it is apparent that both the larval and adult stages of this beetle are able to survive for several weeks in a salinity of 20‰.

Agabus nebulosus Forster A single adult occurred on July 29th, 1957, in pool 33, where a recent tide had increased the salinity to 31‰. On this date *A. bipustulatus* was absent from the salt marsh.

Agabus bipustulatus Adults were common throughout the summer months, but they migrated from the north pools whenever these were inundated by spring tides. The September springs in 1958 demonstrated very clearly the intolerance of this species to highly saline water. Practically every pool in the salt marsh contained several adults before the spring tides, but repeated searches immediately after them failed to reveal a single specimen. When the salinity in the south pools had decreased to approximately 10‰ the adult beetles reappeared, but they did not recolonise the more saline north pools. The highest recorded salinity for this species was 15‰. Without marking and recording daily the distribution of individual beetles it is not certain whether individuals of this very mobile insect will remain in water of 10-15‰ salinity for more than a few hours.

Ilybius fuliginosus A single specimen was recorded on July 4th, 1958, in a pool containing "rain water" (salinity 1‰) after a period of heavy rain.

Haliphys lineatocollis Occasionally found in water of less than 10‰ salinity.

ARANEIDA

Lycosa (purbeckensis?) This spider was very common round the edges of pools during the summer months, and can run very easily over the surface of the water. Bristowe (1923) gives an interesting account of the behaviour of *L. purbeckensis* during a high tide on salt marshes near the Isle of Wight.

MOLLUSCA

Sabanaea ulvae Considerable numbers of this mollusc occurred in pools 41-42 during September 1956 but it was not found in any other pool and completely disappeared during the following month. On June 1st, 1959, the species was again found in pool 42 (salinity 22‰) and also in pool 38 (salinity 32‰), but only in small numbers. The mollusc probably occurs in the estuary and was carried into the salt marsh by spring tides, but it is not known why it occurred only on two

isolated occasions. Nicol (1935) states that this species is a detritus feeder, and she found it on both mud and sandy bottoms of pools at Aberlady.

Alderia modesta and *Limapontia depressa* These two molluscs appeared in the south pools during September 1956 and November 1957. On both occasions they were very common, and were found not only in the pools, but also on the surrounding vegetation. Some of the south pools contained large numbers of the egg-masses of both species. The seasonal appearance of these two species in several salt marshes has been reviewed by Nicol (1933, 1935) together with observations on their habits.

PISCES

Gasterosteus aculeatus Nearly all of the larger pools each contained several specimens of the three-spined stickleback. In 1958 the pools did not dry out completely until the first week in June, and eggs laid in May were successfully hatched.

DISCUSSION

A considerable variety of aquatic insects, with the possible exception of the Plecoptera and Ephemeroptera, are able to tolerate the fairly stable low salinities in the Baltic Sea (see, for example, Silfvenius, 1906; Lindberg, 1948), at least in those regions where the salinity is less than 9‰. On the other hand, tolerance to higher salinities, including the ability to breed regularly in high salinities, has been established for only a few species, most of which are Odonata and Diptera. It is therefore of some interest to find that a Trichopteran, *Limnephilus affinis*, and a Coleopteran, *Colymbetes fuscus*, are able to survive as breeding populations under considerable fluctuations in salinity. Both species survive in a salinity of about 20‰ and withstand short periods of immersion in almost full strength sea water. In this respect they are well adapted to the salinity fluctuations in the salt marsh at Seaton Sluice, which are very similar to the fluctuations recorded in a salt marsh at Aberlady, on the Firth of Forth (Nicol, 1935). Thus both salt marshes were inundated with sea water only during high spring tides, and in both the rising tide dammed back fresh water at the head of the estuary, so that as the tide flooded over the salt marsh a layer of fresher water was carried over the incoming sea water. This vertical layering is of considerable importance, as subsequent mixing of the two layers considerably reduced the salinity. In effect, salinities greater than 30‰ normally occurred only during high spring tides, and in both salt marshes salinities exceeding that of normal sea water were recorded only on rare occasions.

The insect fauna of the two salt marshes is also strikingly similar. In the "more saline" pools at Aberlady, Nicol found *Aedes detritus*, *Chironomus aprilinus* and *Procladius choreus*, together with the larvae of an unidentified Trichopteran. Of these, *C. aprilinus* was widely distributed within the salt marsh and has been recorded from similar situations in other parts of the British Isles (Nicol, 1933, 1936). *C. aprilinus* was also common at Seaton Sluice, and observations suggest that the range of salinity tolerated by this species is very similar to that of *Limnephilus affinis*. In contrast, *Aedes detritus*, *Cricotopus vitripennis* and *Ephydra riparia* survive in salinities far greater than that of normal sea water.

Most of the insects recorded by Nicol (1935) at Aberlady were found only in the "less saline" pools, where the salinity was usually about 1‰, and evidently at least some of these were merely casual visitors from neighbouring bodies of fresh water. At Seaton Sluice more than half of the total number of species recorded were casual visitors to the salt marsh and they occurred only during the summer months, in pools where the salinity was less than 10‰. Of these insects (Group IV) only one species, *Chironomus riparius*, was known definitely to breed regularly in the salt marsh, but it was unable to survive the high salinities of the September spring tides. All of the casual visitors were Hemiptera-Heteroptera and Coleoptera, and are species known to be fairly ready fliers with a tendency to migrate from one water-body to another, at least over small distances. The presence of these insects in the salt marsh is best explained on this basis, and it is interesting to note that they avoided salinities greater than about 10‰, a form of behaviour well marked in *Agabus bipustulatus*. These observations support the annual observations made in midsummer by Hincks *et al.* (1951-54) and summarised by Butler and Popham (1958), which indicate that approximately 25 per cent. sea water (i.e. 9‰ salinity) is critical to many aquatic insects. Further investigations, taking into consideration the complete life history of the insect under known conditions of salinity, are now required to establish which species may properly be regarded euryhaline, as distinct from those which may visit salt water localities and tolerate high salinities only for short periods.

SUMMARY

1. Fluctuations in salinity have been measured during three consecutive years in salt marsh pools at Seaton Sluice, Northumberland.
2. Some of the pools were only inundated with sea water during very high spring tides. In these pools the salinity was usually less than 15‰.
3. Pools nearer to the tidal mud flat were inundated more frequently with sea water, and the salinity was usually greater than 15‰.
4. From May until September the pools were impermanent, and the salinity in the majority of pools was less than 10‰.
5. The following euryhaline insects bred regularly in the salt marsh: *Limnephilus affinis* (Trichoptera); *Colymbetes fuscus* (Coleoptera); *Chironomus aprilinus*, *Cricotopus vitripennis* var. *halophilus*, *Aedes detritus*, *Ephydra riparia* (Diptera).
6. Between May and September there were irregular influxes of various species of Hemiptera-Heteroptera and Coleoptera. These insects avoided salinities greater than approximately 10‰.
7. The importance of obtaining regular determinations of salinity and the species present in brackish-water habitats is stressed.

ADDENDUM

The salinity of most brackish waters may be simply estimated by measuring the specific gravity of a water sample with a hydrometer (scale 1.000—1.050). The temperature of the water sample must be measured simultaneously, and the salinity then calculated by reference to a nomogram relating specific gravity and temperature to salinity (in Harvey 1955, p. 128). Under field conditions this method is accurate to $\pm 2\%$ salinity.

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ORNITHOLOGICAL REPORT ON THE FARNE ISLANDS FOR 1960

Compiled by

J. C. COULSON, B.Sc., PH.D., and GRACE HICKLING, M.A.

INTRODUCTION

Since 1946, when the first Farne Islands Ornithological Report was compiled by the late T. R. Goddard, a great deal of information has been obtained about the general bird life of the islands and it has become obvious that this varies little from year to year. It has accordingly been decided only to deal in detail with the main breeding birds and with species that either occur infrequently, or have some special interest. The classified notes are arranged, like others in these *Transactions*, in the Wetmore order. Contributors to the report include, in addition to the compilers, E. L. Arnold, E. A. R. Ennion, W. Shiel, B. Springett, the watchers employed by the Farne Islands Local Committee, and visitors to the Farne Islands Study Centre and, where necessary, initials are used to indicate the source of a record.

THE BREEDING SEASON

Most species started nesting later than in 1959. Some eggs were lost to predators, chiefly gulls, while gales in June and July had an adverse effect on certain nesting birds. On June 12th the wind was westerly, force ten, and spray was blown right over the islands. As a result, much of the vegetation—dock, nettles, thrift, campion and even grass and silverweed—was blackened and shrivelled. Some exposed kittiwakes' nests were washed away, while one arctic tern had its wing broken and had to be destroyed. Further gales, this time northerly, followed at the end of June and the beginning of July, and many of the terns' eggs on the flat below the Brownsman cottage were lost and there was considerable damage to the eggs of cormorants and guillemots on the Megstone.

Largely as the result of the early arrival of the watchers, and the late breeding season, there was no widespread stealing of eggs, although a few disappeared or were destroyed during the course of the season. Constant vigilance was, however, necessary, particularly on the Inner

Farne, and without the aid of student-visitors to the Study Centre, who helped the watchers at busy times, there would have been more damage. Some of these students commented on the difficulty of controlling the visitors, especially when large numbers were present. In a few cases schoolchildren also caused trouble and it is obviously essential for organised parties to be accompanied, and supervised, by teachers. The effect of the repeated disturbance, during recent years, of the birds nesting on Longstone End was clearly shown, for no terns bred here, while not more than half a dozen pairs were on the other Longstone rocks.

Towards the end of July several adult puffins were found dead on Staple Island and the Brownsman. Most of the mortality in young birds occurred, as usual, among terns, in this case nearly all well-grown youngsters. Starvation seemed a probable cause and in some instances the birds were undoubtedly underweight. B. Springett studied the probable causes of tern mortality on the Inner Farne and wrote as follows:—

"From July 25th the mortality of juvenile terns (all species) became more and more obvious. There seemed to be two causes of death, first, starvation and, second, pecking by adults. This pecking appeared to be indiscriminate, adults pecking both adults and juveniles and even their own chicks. Youngsters with inflamed wing joints and semi-bald heads became increasingly common as the season progressed. The affected joint usually became swollen with the result that the bird could not fly and, although it might at first be fed by its parents, finally died either from starvation or cold."

MID-SEPTEMBER PASSAGE MOVEMENT

The main autumn drift movement, which occurred in mid-September and has been fully described elsewhere, was also observed at the Farnes. On September 19th, E. A. R. Ennion recorded fair numbers of redstarts, wheatears, robins, meadow and tree-pipits on the Inner Farne; also present were three whinchats, two white-throats, three song-thrushes, four chaffinches, two kestrels and some 100 to 150 siskins. He was unable to land on the Brownsman, but noticed at least three more kestrels as well as numerous small migrants. By September 22nd many of the birds had moved on, but there were still at least four redstarts, two tree-pipits and 20 meadow-pipits, as well as a willow-warbler/chiffchaff, a wheatear, a whitethroat, a wren, a hedge-sparrow, a chaffinch, a siskin and two song-thrushes still on the Inner Farne.

SANCTUARY ORDER

In order to provide additional protection for the nesting birds application has been made to the Home Secretary for the making of a Sanctuary Order in respect of the Farne Islands. Full information about the details of the proposed Order will be published in due course and it is hoped that it will be in operation by the 1962 breeding season.

The Local Committee has also tackled the problem of the spread of nettles on the Inner Farne. Rabbits play an important part in controlling the growth of vegetation, and so providing suitable conditions for ground-nesting birds, but, unfortunately, they encourage nettles and in recent years these have spread considerably, depriving the birds of nesting areas. In 1960 an attempt was made to eradicate them from certain areas of the Inner Farne and this proved very successful, with the result that both terns and eiders nested in previously unsuitable places. This was particularly noticeable in the garden, where the eiders, which normally nest against the outside of the walls, had moved inside to safety.

CLASSIFIED NOTES

16. MANX SHEARWATER *Procellaria puffinus* Seen as follows: April 17th, two; 30th, one; June 20th, six; July 10th, one; 23rd, four.

19. GREAT SHEARWATER *Procellaria gravis* One on September 6th (E.L.A.). This is the second record for the Farnes.

26. FULMAR PETREL *Fulmarus glacialis* Two pairs nested on the Brownsman, but both eggs disappeared, while the egg laid on Staple Island failed to hatch. Eight pairs were on the Inner Farne: four (including that on the site on the east side of the island) hatched successfully, one chick died and the remaining eggs disappeared.

28. CORMORANT *Phalacrocorax carbo* Early in the season birds attempted to nest on the Megstone; they suffered considerable interference and were very wild. Many nests were destroyed during gales and on July 27th there were only 32, all on the higher part of the island. One contained a single egg, six had two eggs, 14 three eggs, two four eggs, seven were empty, while one had two chicks and another two nearly fledged young. A shag's skull had been used in the construction of one nest.

After the gales some birds settled on the North Wamses and Big Harcar. Continual disturbance by visitors led to the abandonment of the latter island, but a small number reared young successfully on the North Wamses.

29. SHAG *Phalacrocorax aristotelis* Although a few pairs were on the Brownsman nesting sites on January 25th nesting started comparatively late and on April 17th there was only one egg in the 16 nests on this cliff. There were 20 pairs on the Inner Farne, and on June 3rd 134 nests were counted on Staple Island and 38 (all at the south-east end) on the Brownsman. Shags are extending their range on these last two islands and now occupy some sites formerly used by kittiwakes.

On August 24th two nests on the Brownsman still contained young.

61. LONG-TAILED DUCK *Clangula hyemalis* One in Staple Sound on January 4th and 5th.

67. EIDER-DUCK *Somateria mollissima* Counting is always difficult, but it was estimated that there were between 400 and 450 nests on the Inner Farne while there were probably about 100 on the Brownsman and at least three on Staple Island. Longstone End was virtually deserted. Nesting started late and on April 30th, although one duck was sitting on the Inner Farne, no other ducks or drakes were on the island, and only a few were in the water nearby, while even on May 8th there was little sign of courtship either on land or sea. There were fewer nests in the chapel enclosure, but two were inside the Brownsman beacon lighthouse. Two ducks (one on the Inner Farne and the other on the Brownsman) were still sitting on July 24th. As usual several nests were, for no apparent reason, deserted, and at the end of the season a watcher counted at least 93 unhatched eggs on the Brownsman.

73. SHELD-DUCK *Tadorna tadorna* An occasional pair seen, but no information about breeding.

75. GREY LAG-GOOSE *Anser anser* Two parties, each numbering about 15, seen by fishermen on April 25th; two birds near the Longstone on August 6th.

84, 85 and 86. SWAN *Cygnus sp.* A headless corpse, not specifically identified, found on the Wideopens on December 15th. Swans are rarely seen on the Farnes and there are only five previous records—mute swan (1913 and 1957), whooper swan (1893 and 1949), Bewick's swan (1952).

110. KESTREL *Falco tinnunculus* Inner Farne: July 25th, one; September 10th, one; 19th, two; 22nd, one. Brownsman: September 19th, at least three.

125. CORNCRAKE *Crex crex* Inner Farne: one on May 18th (W.D.P.). This is the ninth record for the Farnes and the first since 1954.

131. OYSTERCATCHER *Haematopus ostralegus* At least three pairs nested on the Brownsman, two on the Inner Farne and none on Staple Island.

133. LAPWING *Vanellus vanellus* On April 30th two nests (one with three and the other with four eggs) were on the Inner Farne, and on May 8th six chicks, only a day or two old, were found, but subsequently disappeared before fledging.

134. RINGED PLOVER *Charadrius hiaticula* One pair nested on Staple Island and at least three pairs on both the Brownsman and Inner Farne.

140. GOLDEN PLOVER *Charadrius apricarius* Inner Farne: one from May 8th to 10th.

145. COMMON SNIPE *Capella gallinago* Inner Farne: one on April 30th and December 19th.

159. COMMON SANDPIPER *Tringa hypoleucos* Inner Farne: one on May 12th and 13th and July 18th.

165. GREENSHANK *Tringa nebularia* One on July 21st.

169. KNOT *Calidris canutus* Some 80 non-breeding birds on Knoxes Reef on June 3rd; four on the Inner Farne on July 16th and August 5th.

170. PURPLE SANDPIPER *Calidris maritima* A flock of about 70 on the Inner Farne on May 10th.

181. SANDERLING *Crocethia alba* Inner Farne: two on August 11th.

185. AVOCET *Recurvirostra avosetta* One on the Inner Farne on May 12th (C.N.R.); one among oystercatchers on the East Wideopens on July 5th (E.A.R.E.). These are the first records for the Farnes.

193. ARCTIC SKUA *Stercorarius parasiticus* One in Staple Sound on June 20th; three flying through the Kettle on July 30th; two off the Inner Farne on August 13th.

194. GREAT SKUA *Stercorarius skua* Two seen on many occasions between August 20th and September 11th (E.A.R.E.).

198. GREATER BLACK-BACKED GULL *Larus marinus* The increase in numbers noted in the late summer of 1959 was again apparent. On July 27th 300-400 were on the Knivestone, 180 on Longstone End and about 400 on the Crumstone and on August 24th there were still many on the Knivestone. The numbers then decreased, but on November 16th, 15 or 16 were on Staple Island, about 40 on the Brownsman and others on the Wideopens.

211. KITTIWAKE *Rissa tridactyla* On the Inner Farne the first eggs were laid on May 24th and the first young seen on June 20th. It is not known when the first egg was laid on Staple Island, but on May 27th, out of a sample of 245 nests, only 77 contained eggs and in only 14 was there more than one egg. This suggests that here, too, laying started later than average.

212. BLACK TERN *Chlidonias niger* One off the Inner Farne on July 30th (B.S.); one near the outer islands on August 20th, 22nd and 24th (W.S.).

217. COMMON TERN *Sterna hirundo* A number nested near the upper garden on the Brownsman and a few pairs were in the North Cove; most of those on the Inner Farne were on the top of the island with only a small number near St. Cuthbert's Gut. The majority apparently settled later than the arctic terns and few young were found before mid-July.

218. ARCTIC TERN *Sterna macrura* The change in the position of arctic terns on the Brownsman, first noticed in 1959, was again apparent. Fewer than usual were near the cottage, but they were close-packed on the flat below, and on the adjacent slopes, while some 50 pairs were in Pinnacles Haven. On the Inner Farne the first eggs were laid on May 23rd, young appearing here on June 14th and on the Brownsman on the next day. On June 15th a bird on the Brownsman was seen to give an injury-feigning display, moving down the path ahead of the party with an apparently injured wing and then flying off strongly: this seems to be the first record of this kind of behaviour on the islands.

219. ROSEATE TERN *Sterna dougallii* At least 58 pairs nested. On the Brownsman there was a group of about 24 nests on the campion above the lower garden, five were near the North Cove, 13 on the flat below the cottage and four near the pond. The Inner Farne birds (some dozen pairs) were on the top, not far from the Sandwich tern colony. One almost fully-fledged youngster was found on the Brownsman with a completely useless wing, having been trapped by the surrounding vegetation.

223. SANDWICH TERN *Sterna sandvicensis* For the first time since 1956 the main colony (estimated at 1,000 to 1,500 pairs) was on the Inner Farne. The first eggs were laid on May 18th, but the early ones were lost, and hatching did not start until June 14th. By July 9th most of the young had left the nesting area and were trooping over the island. There were two distinct colonies on the Brownsman; the first (about 17 pairs) was near the upper garden, while the other, made up of three groups which arrived at different times and totalling about 200 to 250 pairs, was above the North Cove. Hatching started in the garden colony on June 25th, but chicks were still appearing in one of the Cove groups on August 2nd.

224. RAZORBILL *Alca torda* Three pairs nested on the Inner Farne, but only one young bird was reared. One pair attempted to nest on Staple Island.

226. LITTLE AUK *Plautus alle* Seen near the islands: January 4th, five or six; 5th, three; 25th, one; June 22nd (an unusual date), one; October 29th, one.

227. GUILLEMOT *Uria aalge* On January 4th the Pinnacles were crowded and many were on the Staple Island and Brownsman cliffs, but next day only one or two were left. Eggs were laid on the Pinnacles by May 8th and the birds remained here until after July 23rd—at least two days later than in 1959. Five pairs nested on the Inner Farne and there was an increase on both the Megstone and Brownsman; on the Brownsman there were about 40 pairs and this increase may well be due to the vigilance of the present watchers. Most of the Megstone birds lost their eggs or young in the July gales.

Guillemots were again on the Pinnacles on November 14th and on the Staple cliffs on December 14th.

229. BLACK GUILLEMOT *Uria grylle* Single birds recorded on January 4th and 5th, April 30th and September 6th.

230. PUFFIN *Fratercula arctica* On the Inner Farne the first eggs were laid about May 6th and the first nestling was seen on June 10th.

234. WOOD-PIGEON *Columba palumbus* One flying in from beyond the Longstone on April 8th; one on the Inner Farne on April 30th and two on May 9th.

235. TURTLE-DOVE *Streptopelia turtur* Inner Farne: one on May 12th (C.N.R.). This is only the fourth record since 1913.

255. SWIFT *Apus apus* Single birds on the Brownsman on April 30th and the Inner Farne on May 9th.

276, 277. HOUSE-MARTIN *Delichon urbica* and SAND-MARTIN *Riparia riparia* One house-martin on the Inner Farne on May 11th and 12th and a sand-martin on May 12th.

280, 281. CARRION-CROW *Corvus corone* and HOODED CROW *Corvus cornix* A pair of carrion-crows attempted to nest on the Brownsman in May, but were driven off. On April 30th three small flocks of crows were seen moving over the islands towards the west; one consisted of seven hooded and two carrion-crows, another of four hooded crows while the third included at least two carrion-crows.

298. TREE-CREEPER *Certhia familiaris* One, identified as belonging to the British race (*britannica*), was caught on the Inner Farne on September 10th (E.A.R.E.). This is the second record for the islands, the last being a bird shot on the Inner Farne on October 5th, 1881.

301. MISTLE-THRUSH *Turdus viscivorus* Brownsman: one on April 8th. This thrush is seldom seen on the islands and this is only the sixth bird recorded since 1885.

307. RING-OUZEL *Turdus torquatus* Inner Farne: one (a male) from May 11th to 14th.

321. BLACK REDSTART *Phoenicurus ochruros* Inner Farne: one (a female or immature male) on May 16th and 18th (W.D.P.).

324. BLUETHROAT *Cyanosylvia svecica* An adult male red-spotted bluethroat on the Inner Farne on May 21st (E.A.R.E.). This is the fourth record for the islands.

337. SEDGE-WARBLER *Acrocephalus schoenobaenus* Brownsman: one on May 16th.

342. BLACKCAP *Sylvia atricapilla* Brownsman: one on May 16th.

344. BARRED WARBLER *Sylvia nisoria* Brownsman: one on August 29th (E.A.R.E.). A record of one seen on September 8th, 1959, was not included in the 1959 report.

348. LESSER WHITETHROAT *Sylvia curruca* Inner Farne: one on May 9th and 13th (C.N.R.).

357. WOOD-WARBLER *Phylloscopus sibilatrix* Inner Farne: one on August 27th (E.A.R.E.).

364. GOLDCREST *Regulus regulus* On April 7th a considerable invasion reported from fishing boats near the islands.

366. SPOTTED FLYCATCHER *Muscicapa striata* Inner Farne: one from May 16th to 22nd.

367. PIED FLYCATCHER *Muscicapa hypoleuca* Brownsman: August 29th, four. Inner Farne: September 6th, one.

371. HEDGE-SPARROW *Prunella modularis* Brownsman: May 16th, one; November 5th, two. Inner Farne: September 22nd, one.

376. TREE-PIBIT *Anthus trivialis* Inner Farne: April 15th, one; August 27th, four; September 19th, fair numbers; 22nd, at least two. Brownsman: August 29th, two.

382. YELLOW WAGTAIL *Motacilla flava* Brownsman: one on May 6th.

392. GREENFINCH *Chloris chloris* Inner Farne: April 8th, one; December 19th, three.

394. SISKIN *Carduelis spinus* A large invasion in mid-September. Between 100 and 150 on the Inner Farne on September 19th, but no information about numbers on other islands. This species is rarely seen at the Farnes and the only previous records were in 1887, 1952, 1953 and 1959.

425. TREE-SPARROW *Passer montanus* Inner Farne: May 18th, one; 19th and 21st, three; 22nd and 23rd, two; 25th, one. Brownsman: May 16th, six.

OTHER SPECIES

The following species, although not dealt with in detail, were recorded: Diver *spp.*, gannet, heron, mallard, teal, wigeon, common scoter, turnstone, woodcock, curlew, whimbrel, redshank, dunlin, lesser black-backed gull (breeding), herring-gull (breeding), common gull, black-headed gull, skylark, swallow, wren, fieldfare, song-thrush, redwing, blackbird, wheatear, whinchat, redstart, robin, whitethroat, willow-warbler/chiffchaff, meadow-pipit, rock-pipit (breeding), pied wagtail, starling (breeding), linnet, chaffinch, brambling, snow-bunting.

RINGING

During the year 5,716 nestlings and 638 adults were ringed and, in addition, 113 adults were re-ringed. The total of 6,351, which does not include re-ringed birds, is again a record and is 892 greater than the corresponding figure for 1959. The numbers of individual species ringed were as follows:—Fulmar 11 (including 1 re-ringed); cormorant 25; shag 302 (including 35 re-ringed); eider-duck 72 (including 14 re-ringed); oystercatcher 2; ringed plover 6; lesser black-backed

gull 300; kittiwake 1,194 (including 36 re-ringed); common tern 303; arctic tern 2,143 (including 23 re-ringed); roseate tern 89; Sandwich tern 1,654; razorbill 2; guillemot 167 (including 3 re-ringed); puffin 181 (including 1 re-ringed); redstart 1; blackcap 1; willow-warbler 1; rock-pipit 10.

RECOVERIES

There have been 359 recoveries of birds ringed on the islands; this includes a shag and a puffin, found in 1959, but not previously reported. It also includes a puffin and two rock-pipits ringed by Monks' House Bird Observatory.

Of the numerous recoveries of cormorants, two are of particular interest. The recovery of one on Lough Neagh is the first Farne-ringed cormorant to be recovered in Ireland, while the recovery of another bird in Finistère is the eighth in France or Spain.

There are three foreign recoveries of shags: in Belgium, north France and south Norway. The recovery of another shag in the Outer Hebrides is the second for the west side of Great Britain, the other being in the Bristol Channel.

The recoveries of eiders suggest that many of the Farne breeding birds are sedentary, but the recovery at Granton in June of a duck ringed as a breeding bird in 1959 raises the problem of where, if at all, the bird had bred in 1960.

Lesser black-backed gulls continue to be recovered from Portugal, Spain and North Africa during the winter and there is no suggestion that any Farne birds are over-wintering in this country—a habit that is becoming increasingly common in this species.

While there have been a large number of recoveries of kittiwakes, there are only three away from the coastal regions of Europe. Two of these were young birds which had crossed the North Atlantic to Newfoundland, while the third was found inland in Morocco—the most southerly recovery to be reported for this species. There is one instance of a kittiwake ringed as a nestling on the Farnes which was captured in a colony at North Shields three years later, but did not breed.

There was some evidence in the common, arctic and Sandwich terns of young birds moving to the north of the Farnes before commencing their autumn migration. Thus young Sandwich and arctic terns were recovered in East Lothian and Fife and a common tern in Angus. Two arctic terns recovered in South Africa, and a common tern in north-west Africa, suggest a possible difference on their wintering areas, while Sandwich terns were recovered along the whole of the west coast of Africa.

Four puffins and four guillemots were recovered in south Norway during the winter while another puffin was recovered off Newfoundland. This is the first instance of a Farne-ringed puffin having crossed the Atlantic although two which were ringed at St. Kilda have made the crossing.

RECOVERIES OF BIRDS RINGED ON THE FARNE ISLANDS

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
CORMORANT		
(a) <i>Ringed as young</i>		
15.8.53	Holy Island, Northd.	Nov. 1960
26.8.55	Howden, Tynemouth, Northd.	18.12.60
12.7.56	Blyth, Northd.	17.1.60
4.8.56	Nr. Montrose, Angus (shot)	(9.3.60)
"	Berwick-on-Tweed—2 birds (shot)	2.5.60, 24.10.60
21.7.58	Nr. Beadnell, Northd.	20.4.60
"	Burnmouth, Berwickshire	(21.7.60)
1.8.58	Nr. Berwick-on-Tweed (shot)	15.2.60
"	Holy Island	25.9.60
10.7.59	Topsham, Devon (shot)	30.1.60
"	Fordwich, nr. Canterbury, Kent (shot)	30.1.60
"	Lundin Links, nr. Largo, Fife	1.2.60
"	Scarborough, Yorks.	11.2.60
"	Berwick-on-Tweed area—3 birds (shot)	12.2.60,
		20.2.60, 28.12.60
"	Montrose Basin, Angus (shot)	ca.16.2.60
"	Nr. Sprouston, Kelso, Roxburghshire	(27.2.60)
"	Whitby, Yorks.	14.3.60
"	Norham, Northd. (shot)	24.3.60
"	Portling, nr. Colvend, Kirkcudbrightshire (drowned in salmon net)	(4.4.60)
"	R. Till, nr. Etal, Northd. (killed by nesting mute swan)	18.4.60
"	Aberdeen (shot)	4.5.60
"	Burnmouth (caught in salmon net)	23.5.60
"	West Kilbride, Ayrshire	(14.6.60)
"	Firth of Tay (shot)	22.8.60
"	Buckhaven, Fife	29.10.60
"	Lough Neagh, N. Ireland (shot)	7.11.60
22.7.59	Concarneau, Finistère, France (caught)	(12.1.60)
29.8.60	Bainsford, Falkirk, Stirlingshire	(13.11.60)
6.9.60	Berwick-on-Tweed—6 birds (shot)	26.10.60, 27.10.60,
		2.11.60, 7.11.60,
		21.11.60, 31.12.60

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
SHAG		
(a) Ringed as young		
26.5.56	Farne Islands	8.4.60
15.6.57	Holy Island	28.3.59
10.7.58	Bamburgh, Northd.	27.3.60
"	Cockburnspath, Berwickshire	(8.4.60)
"	Sunderland, Co. Durham (caught alive)	12.4.60
"	Druridge Bay, Northd.	1.6.60
8.6.59	Monifieth, Angus	26.3.60
"	High Newton-by-the-Sea, Northd.	27.3.60
"	Dungeness, Kent	20.4.60
"	Cromarty, Ross and Cromarty	10.7.60
19.6.59	Sleaford, Lincs.	9.1.60
"	Northfleet, nr. Gravesend, Kent (found alive in power station chimney; released)	8.2.60
"	Wallasea Island, Rochford Hundred, Essex (found oiled)	24.3.60
"	Cromarty	27.3.60
"	Port Seton, nr. Prestonpans, East Lothian	(6.4.60)
"	Off Leith, Midlothian	23.4.60
27.6.59	Eigerøy, Egersund, Rogaland, Norway (caught in fishing net)	12.2.60
"	Scolt Head, Norfolk	13.2.60
"	Scarborough	3.3.60
"	Redcar, Yorks. (skeleton found)	(19.4.60)
"	Isle of May, Fife	2.6.60
4.7.59	St. Abb's, Berwickshire	2.4.60
"	Holy Island	10.9.60
18.7.59	Meavag, East Loch Tarbet, Harris	2.4.60
22.7.59	Swineshead, nr. Boston, Lincs.	5.1.60
"	Estuary of R. Ythan, nr. Newburgh, Aberdeenshire (shot)	14.2.60
"	Baie de Somme, Somme, France (caught)	17.2.60
"	Filey, Yorks.	19.2.60
"	Spurn Point, Yorks.	ca.20.2.60
"	Fraserburgh, Aberdeenshire	(21.2.60)
"	Folkestone, Kent (oiled)	26.2.60
"	White Cliff Bay, nr. Bembridge, Isle of Wight	27.2.60
"	Clabecq, Brabant, Belgium	28.2.60
"	Dovercourt, Essex	15.3.60
"	Holy Island	20.3.60
"	Farne Islands	early April, 1960
"	Burnmouth (oiled)	ca.1.5.60
"	Bamburgh	6.5.60
5.8.59	Nr. Kirby-le-Soken, Essex	15.2.60
22.6.60	Between Elie and St. Monance, Fife	19.11.60
6.7.60	Berwick-on-Tweed (shot)	24.10.60
9.7.60	" —2 birds (shot)	22.10.60, 29.12.60

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
SHAG—continued		
9.7.60	Nr. King's Lynn, Norfolk	31.10.60
"	Scarborough	(10.11.60)
27.7.60	Hornsea, Yorks.	29.10.60
"	Beadnell	31.10.60
"	King's Lynn (found, apparently alive, in cow's manger)	8.11.60
2.8.60	Gibraltar Point, Lincs.	22.10.60
"	Scremerston, Northd.	(18.11.60)
"	Potter Heigham, The Broads, Norfolk (died, roosting on bungalow roof, after frequenting the area for several weeks)	ca.23.11.60
"	Burnhaven, nr. Peterhead, Aberdeenshire	4.12.60
8.8.60	Friskney, nr. Wainfleet, Lincs.	4.12.60
"	Nr. Bridlington, Yorks.	29.12.60
(b) Ringed as adult		
26.5.59	Farne Islands	14.12.60
EIDER-DUCK		
(b) Ringed as adult		
17.5.58	Seahouses, Northd.	3.8.60
16-20.5.59	Nr. Beadnell	24.7.60
8.6.59	Inchkeith Island, Firth of Forth, Fife (caught and released without ring)	24.2.60
"	Granton, Edinburgh, Midlothian	4.6.60
3.6.60	Beadnell	22.10.60
LESSER BLACK-BACKED GULL		
(a) Ringed as young		
4.8.57	Gibraltar (taken to R.S.P.C.A. clinic)	(6.1.60)
7.8.58	Finningley, Notts.	15.6.60
26.8.58	Algiers, Algeria (found wounded)	19.1.60
"	Dewsbury, Yorks. (ring only found)	3.7.60
31.8.58	Nr. Halifax, Yorks.	31.5.60
7.8.59	São Jacinto, Aveiro, Portugal (found)	12.10.60
"	(i) Mindelo, nr. Vila do Conde, Douro Litoral, Portugal (caught and released) see 1959 report	18.11.59
"	(ii) Viana do Castelo, Minho, Portugal	14.12.60
17.8.59	Tintwhistle, nr. Stalybridge, Cheshire	28.5.60
13.8.60	Léchiagat, nr. Penmarch, Finistère, France	29.9.60
"	Vila Nova de Gaia, Douro Litoral, Portugal (shot)	5.10.60

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
LESSER BLACK-BACKED GULL—continued		
13.8.60	Póvoa de Varzim, Douro Litoral, Portugal (caught)	ca.24.10.60
"	" " " (presumed dead)	2.11.60
"	Off Matosinhos, Douro Litoral, Portugal (caught on fishing boat)	ca.25.11.60
23.8.60	Nr. Cape Prior, Coruña, Spain (caught alive on fishing line)	12.10.60
"	Penmarch, Finistère, France (killed)	(17.11.60)
KITTIWAKE		
(a) Ringed as young		
6.7.57	Westenschouwen, Zeeland, Netherlands	20.4.60
"	Druridge Bay	(8.7.60)
"	Smith's Dock, North Shields, Northd. (released)	22.7.60
11.7.58	Sunderland	7.9.60
26.6.59	Nr. Embleton, Northd.	21.7.60
27.6.59	Island of Sylt, E. Frisian Islands, Germany (oiled)	(4.1.60)
"	Heist-sur-Mer, nr. Knokke, W. Flanders, Belgium (caught and released)	March, 1960
"	Kinghorn, Fife	23.4.60
"	Nr. Rindby, Fanö, Jutland, Denmark	5.5.60
"	Sandettié Lightship, Straits of Dover (fell wounded on deck of fishing boat; died later)	10.5.60
"	Off Change Island, Fogo District, Newfoundland (shot)	17.5.60
"	Ballyvaughan, Co. Clare	(8.8.60)
"	Off Sunderland (caught on Polish ship; released without ring)	3.9.60
4.7.59	Blackpool, Lancs.	16.6.60
9.7.59	Hörnum, Island of Sylt, E. Frisian Islands, Germany	3.1.60
"	Nr. Grüenthal, Heide, Schleswig-Holstein, Germany	24.1.60
"	Nr. Monster, Zuid-Holland, Netherlands	2.7.60
11.7.59	Budleigh Salterton, Devon (found in poor condition)	18.6.60
"	Williamsport, Newfoundland	(12.10.60)
15.7.59	South Shields, Co. Durham	21.7.60
22.7.59	Nr. Rommani, Morocco (inland recovery)	(5.1.60)
"	Terschelling, Friesland, Netherlands	3.7.60
9.7.60	Beadnell	7.8.60
15.7.60	Cambois, nr. Blyth, Northd.	5.8.60
"	Embleton	ca.7.8.60
1.6.56	Seahouses (caught and released)	9.9.60
27.6.56	Brancaster, Norfolk	4.6.60

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
KITTIWAKE—continued		
(b) Ringed as adult		
3.7.56	Warkworth, Northd.	4.6.60
"	Beadnell	(16.8.60)
15.6.57	At sea, off Les Sables-d'Olonne, Vendée, France	(11.5.60)
23.6.58	Oosterend, Terschelling, Friesland, Netherlands	15.3.60
11.7.58	At sea about 64 miles S.E. of Aberdeen (caught and released)	7.10.60
COMMON TERN		
(a) Ringed as young		
17.7.60	Kayar, Sénégal (caught and killed)	10.11.60
23.7.60	Montrose	30.8.60
ARCTIC TERN		
(a) Ringed as young		
6.7.57	Crookfoot Reservoir, nr. West Hartlepool, Co. Durham	6.5.60
20.7.57	Farne Islands (wing broken in gale; destroyed)	12.6.60
16.7.58	South Sand Bluff, nr. Port Grosvenor, Cape Province, S. Africa (hooked in the wing by fishing line; released apparently unharmed)	ca.1.1.60
31.7.58	Nr. Sunderland (died "some time ago")	(4.1.60)
6.7.60	West Hartlepool, Co. Durham	20.7.60
"	Off Guetaria, Guipuzcoa, Spain (swallowed fish hook; died)	(14.9.60)
"	Challans, Vendée, France	18.9.60
7.7.60	Seahouses	Aug. 1960
"	West Barns, nr. Dunbar, East Lothian	1.8.60
8.7.60	Holy Island	31.7.60
"	Walvis Bay, S.W. Africa	(7.11.60)
10.7.60	Richards Bay, Zululand, S. Africa	(24.12.60)
(b) Ringed as adult		
6.7.57	Farne Islands	28.7.60
11.7.59	Seahouses	23-30.7.60
SANDWICH TERN		
(a) Ringed as young		
29.6.57	Baie de Cansado, Port Étienne, Mauritania	9.6.60
30.6.58	Nr. Tabou, Ivory Coast (trapped and killed)	Jan. 1960
"	East London, Cape Province, S. Africa (found exhausted; died)	14.1.60

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
SANDWICH TERN—continued		
26.7.58	Bamburgh	3.9.60
26.6.59	Nr. Dakar, Sénégal (caught)	15.4.60
4.7.59	Freetown Bay, Sierra Leone (caught in fishing net; presumed killed)	ca.18.2.60
"	Cape Aberdeen, nr. Freetown, Sierra Leone	4.3.60
"	Cotonou, Dahomey, W. Africa (shot)	16.3.60
9.7.59	M'Bour, Sénégal (caught)	28.2.60
"	Dakar, Sénégal (killed)	(28.9.60)
11.7.59	" (presumed dead)	27.3.60
"	Off Monrovia, Liberia	ca.10.4.60
15.7.59	Vridi, nr. Abidjan, Ivory Coast (caught)	27.2.60
"	Nr. Bonthe, Sierra Leone (caught)	(22.6.60)
18.7.59	Rufisque, Sénégal (caught)	9.1.60
"	Sakomo Lagoon, nr. Accra, Ghana (shot)	4.9.60
22.7.59	Palmarin, nr. Joal, Sénégal	ca.20.2.60
5.8.59	Luanda, Angola (caught)	27.4.60
"	Leybar, nr. St. Louis, Sénégal (killed)	1.5.60
22.6.60	Holmpton, nr. Withernsea, Yorks.	15.8.60
"	Nr. Dunwich, Suffolk	16.8.60
"	St. Andrews, Fife	19.8.60
"	Redcar	Aug. 1960
"	Moreilles, nr. Luçon, Vendée, France	24.9.60
"	Dakar, Sénégal (captured; died)	15.10.60
25.6.60	Filey Brigg, Yorks.	(22.8.60)
"	Costa Nova, nr. Aviero, Beira Litoral, Portugal (killed)	2.11.60
4.7.60	Ile d'Aix, off Rochefort, Charente Maritime, France (killed)	2.10.60
14.7.60	La Coruña, Spain (caught and released)	14.10.60
21.7.60	Filey	5.9.60
"	Aberlady Bay, East Lothian	8.9.60
"	Esmoriz, Beira Litoral, Portugal (killed)	ca.1.12.60
"	Elephant Bay, nr. Cuio, Benguela, Angola (killed)	26.12.60
27.7.60	Estuary of R. Guadalhorce, nr. Malaga, Spain (killed)	6.11.60

GUILLEMOT

(a) *Ringed as young*

22.7.59	Nr. Robin Hood's Bay, Whitby, Yorks. (oiled)	16.1.60
4.7.60	Kvitsøy Island, Boknfjorden, Rogaland, Norway (shot)	5.10.60
6.7.60	Oslo Fjord, Norway (shot)	12.11.60
14.7.60	Off Eigerøy, Egersund, Rogaland, Norway (shot)	14.10.60
"	Torbjørnskjær Fyr, Oslo Fjord, Norway (caught)	4.12.60

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
PUFFIN		
(a) <i>Ringed as young</i>		
7.7.59	Barmston, Yorks.	3.4.60
21.7.60	Nr. Mokster, Selbjornfjord, Hordaland, Norway (shot)	18.9.60
"	Nr. Haugesund, Rogaland, Norway	5.10.60
(b) <i>Ringed as adult</i>		
13.7.52	Off Marsteinen Fyr, Store Kalsoy, Björnafjorden, Hordaland, Norway (shot)	16.10.60
21.4.54	Newton-by-the-Sea, Northd. (found oiled; destroyed)	24.5.59
2.5.56	Farne Islands	2.8.60
13.4.58	*Nr. Belle Isle, Newfoundland (caught on board Portugese fishing vessel)	July, 1960
29.4.58	Farne Islands	ca.14.7.60
9.7.59	Boknfjorden, Rogaland, Norway (shot)	3.1.60
25.7.60	Seahouses	26-30.7.60

ROCK-PIBIT

(b) *Ringed as adult or first winter*

22.8.59	Nr. Beadnell (caught and released)	29.3.60
25.9.59	* " —2 birds "	29.3.60

- NOTES: 1. Unless otherwise stated all birds have been found dying or dead.
 2. Where the date of recovery is unknown, the date of the reporting letter is given in brackets.
 3. * Indicates bird ringed by Monk's House Bird Observatory.

ANALYSIS OF BIRDS RINGED ON FARNE ISLANDS AND RE-TRAPPED
THERE IN 1960

Species	Year of ringing									
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
FULMAR										
Adult	—	—	—	—	—	—	—	—	1	—
SHAG										
Young	—	—	1	—	—	—	7	3	2	—
Adult	—	1	—	4	2	1	2	3	3	6
Age unknown	—	1	—	—	—	—	—	—	—	—
EIDER-DUCK										
Adult	—	—	—	—	—	—	—	—	18	5
KITTIWAKE										
Young	—	1	2	—	3	3	2	1	—	—
Adult	—	—	—	1	1	2	16	2	2	2
Age unknown	—	—	—	—	—	—	1	—	—	—
ARCTIC TERN										
Young	1	1	1	—	5	7	—	4	2	—
Adult	—	—	—	—	1	—	—	2	1	4
GUILLEMOT										
Adult	—	—	—	—	—	—	2	1	4	3
PUFFIN										
Adult	—	—	—	—	—	—	—	—	—	1

In addition three shags and five kittiwakes, whose date of ringing was uncertain, were re-trapped.

Total of re-trapped birds (excluding birds ringed in 1960)

Fulmar	...	...	...	1
Shag	...	...	...	39
Eider-duck	...	...	...	23
Kittiwake	...	...	...	44
Arctic tern	...	...	...	29
Guillemot	...	...	...	10
Puffin	...	...	...	1

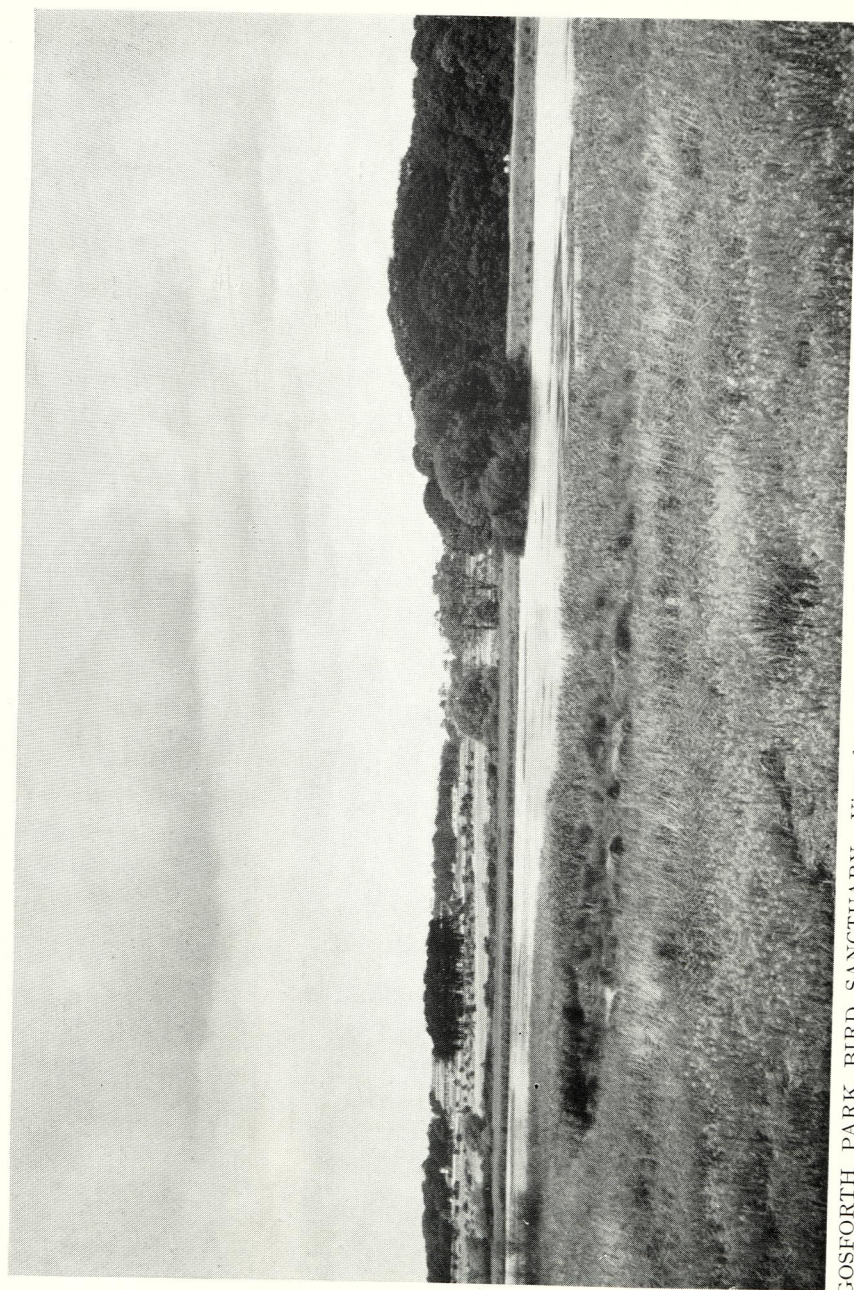
VISITORS TO FARNE ISLANDS STUDY CENTRE
1960

Name	Where from	Date of stay	Main object of visit
T. H. Bell and party	Newcastle Education Committee	June 10-12	Photography
D. W. Hatton	Melbourne, Derby	May 28-June 5	Photography
B. G. Harwood Mrs. Harwood	Northumberland and Durham Nat. Hist. Soc.	May 23-29	Daily behaviour of birds
F. S. Johnson I. D. Porteous	Medical School, King's College, Newcastle upon Tyne	June 17-19	General bird study
J. Buxton R. Keene J. Taylor	Selwood Productions Ltd.	June 13-July 4	Commercial filming
W. D. Park	London Nat. Hist. Soc.	May 17-26	Photography
Rev. D. A. Quine	Northumberland and Durham Nat. Hist. Soc.	July 7 and 8	Investigating behaviour of arctic terns
C. N. Rollin and party	Glanton, Northumberland	May 7-14 July 15-22	Daily behaviour of birds
Miss J. Stones Miss A. Batey	Durham Colleges	June 15-July 14	General bird study
W. B. H. Sowerby and party	Flintshire (late King's College, Newcastle upon Tyne)	July 24-30	Continuing botanical survey of Inner Farne

REPORT TO THE BOARD OF DIRECTORS

1900

1. The first part of the report is a summary of the work done during the year.	1. The first part of the report is a summary of the work done during the year.
2. The second part is a detailed account of the work done in each of the departments.	2. The second part is a detailed account of the work done in each of the departments.
3. The third part is a statement of the financial position of the company.	3. The third part is a statement of the financial position of the company.
4. The fourth part is a statement of the assets and liabilities of the company.	4. The fourth part is a statement of the assets and liabilities of the company.
5. The fifth part is a statement of the income and expenses of the company.	5. The fifth part is a statement of the income and expenses of the company.
6. The sixth part is a statement of the profits and losses of the company.	6. The sixth part is a statement of the profits and losses of the company.
7. The seventh part is a statement of the dividends paid to the shareholders.	7. The seventh part is a statement of the dividends paid to the shareholders.
8. The eighth part is a statement of the reserves and funds of the company.	8. The eighth part is a statement of the reserves and funds of the company.
9. The ninth part is a statement of the general management of the company.	9. The ninth part is a statement of the general management of the company.
10. The tenth part is a statement of the future prospects of the company.	10. The tenth part is a statement of the future prospects of the company.



Photograph by H. Denis Briggs, F.R.S.A.

GOSFORTH PARK BIRD SANCTUARY. View from the east platform

GOSFORTH PARK AND ITS BIRD SANCTUARY

a history, description and map

by

H. DENIS BRIGGS, F.R.S.A.

INTRODUCTION

The main objects of this paper are to set the stage for future field activities and records, to give a brief account of the history of Gosforth Park and of the sanctuary and lake, and to provide a suitable map to facilitate further studies. With the exception of an appendix, compiled by G. W. Temperley and giving a list of birds recorded between 1874 and 1961, only a few general observations on natural history have been included as it is hoped that experts will, in due course, make scientific surveys in their own fields.

THE BRANDLINGS AND GOSFORTH PARK

The manors of North Gosforth and Felling came into the hands of Sir Robert Brandling in 1509, through his marriage with Ann, a co-heir of the Surtees family. He was a distinguished merchant adventurer, five times mayor of Newcastle, and represented the city in Parliament. When Charles Brandling, a descendant of Sir Robert, married in 1756, he found the family estate at Felling inadequate and decided to take up residence at North Gosforth, where he built Gosforth House (*ca.*1760) to the designs of James Paine. Gosforth House was an elegant mansion in the Palladian style, built in white freestone. Both Armstrong's one inch map of 1769-70, and Gibson's one inch map of 1788, show Gosforth House standing in grounds of some 250 acres, adjacent to the North Road. No lake is shown on either of these maps and after the turn of the century smaller scale maps—for example Smith's of 1801 and Rowe's of 1813—continue to show the smaller grounds and no lake, though these may have been copied from the earlier one inch maps.

Charles John Brandling, the next heir, took over the Gosforth estates in 1802 and he evidently extended the grounds to the south and east. A lake must have existed about 1815, for, after the disastrous fire at the Brandling's Felling colliery in 1812, George Stephenson, who lived nearby at Westmoor, was prompted to experiment with a safety lamp, which he perfected about 1815. It is recorded that he

amused the Brandling family by immersing a version of his lamp in Gosforth Lake at night and catching the fish attracted by it (Tomlinson). Both Fryer's one inch map of 1820 and Greenwood's one inch map of 1827-8 show Gosforth Lake with two islands—the existing one and a large one at the east end. They also show the park extended to include the lake. Greenwood's map suggests some landscaping of the grounds to the south of the house.

It was Charles John Brandling who, in 1825, commenced to sink the shaft of Gosforth Colliery. This was near the South Gosforth road junction, approximately behind the Victory Inn (O.S. sheet 78, N.G. 256,683). The shaft ran foul of the ninety fathom dyke, and the upper coal seems were found to be shattered and finally, at a depth of 181 fathoms, a drift had to be cut through the solid rock of the dyke to win coal. The ultimate success of this project was celebrated in 1829 by holding a subterranean ball at a depth of 1,088 feet.

North Gosforth Park was subsequently extended eastwards to Salter's Lane and remained in the hands of the Brandlings until 1852, when the Rev. Ralph Henry Brandling, Vicar of Rothwell and permanent curate of Castle Eden, decided to dispose of the estates. In all, some 2,101 acres of land were sold to Thomas Smith, Esq. His son, Thomas Eustace Smith, Esq., inherited the estates, but sold them in 1880. On this occasion Gosforth House and the 807 acres constituting its grounds were sold to Charles Perkins and J. Fife Scott who transferred the property to the High Gosforth Park Company Ltd. This company laid out the race course and converted the house into a grandstand, hotel and stables. A golf course was also laid out. In 1914 the suffragettes set fire to Gosforth House, but the building was subsequently restored. Much later, in the nineteen thirties, a portion of the woodland between the straight mile and the east drive was allocated to the Boy Scouts' Association for a permanent camp and training centre.

THE BIRD SANCTUARY

During the second half of the nineteenth century and the first quarter of the present century, Gosforth Park lake acquired a reputation among naturalists for its variety and quantity of wildfowl. Hancock and others have sung its praises. In 1918, W. E. Beck, who was at that time chairman of field meetings for the Natural History Society of Northumberland, Durham and Newcastle upon Tyne, wrote in his annual report: "I am quite certain that if the lake and surroundings were made into a bird sanctuary it would become an

interesting acquisition to the ornithological features of Northumberland." Some five years later Beck himself rented the shooting rights for the lake and its environs, and established the bird sanctuary he had envisaged. In 1929, when in failing health, he made over the shooting rights to the Society which has since retained them and preserved the sanctuary.

The area concerned comprises the south-east corner of High Gosforth Park, defined approximately as follows:—

Starting westwards from Lake Lodge the boundary of the sanctuary is marked by a hedge that curves somewhat north of west round the southern margin of the lake until the little wood at the west end is reached. After encircling the wood, the boundary turns north-east round the circuit of the race course to the golf course. Here the edge of the wood, and then the straight mile, form the northern boundary. The edge of Salter's Lane completes the perimeter back to Lake Lodge. The area encompassed is 148 acres, of which about 100 acres are woodland.

Prior to 1800 maps show no woodland in this area, which was open heath—part of a moor to the west of Killingworth. By 1820, there was a screen of trees round the lake and a wood in the north-east corner of the park. The sanctuary's wood was first indicated by the Ordnance survey of 1855-64 (published 1859-66). The wood to the immediate north of the old boathouse is now largely beech; the rest of the woodland is mixed, comprising mainly oak, beech, birch and Scots pine, with elm, sycamore and ash present in places. A variety of willows surrounds the margin of the lake and some rhododendron bushes line the footpath near the boathouse. The woodland is in a rather neglected condition, with a fair amount of decaying timber. Several rides traverse parts of the wood, but some of these are now partially overgrown. A narrow footpath encircles the lake and connects with Lake Lodge, the official entrance to the sanctuary. Lake Lodge is a delightful little estate cottage in stone, dated 1859. The date above the door could be 1839, but as the Ordnance Survey of 1855-64 shows all the lodges except Lake Lodge, and as this lodge is different in style from all the others, it is probable that 1859 is the correct interpretation. Two observation platforms are situated on the south side of the lake and on the north side there is a ruined boathouse. Thirty years ago this was in good condition and abutted onto the lake (Hickling, in litt.) but the fabric has deteriorated and the reeds have spread to such an extent that the building is now some distance from the water.

The lake is evidently—like most lakes in Northumberland—artificial, or partly artificial, and must have been excavated early in the nineteenth century. The original margin of the lake (as shown on Greenwood's map of 1828, and subsequent maps) can still be traced and its area works out at 45 acres. It seems doubtful if the lake was ever more than three feet deep and this may in part account for Tomlinson's statement that it was the best and safest lake for skating in the district.

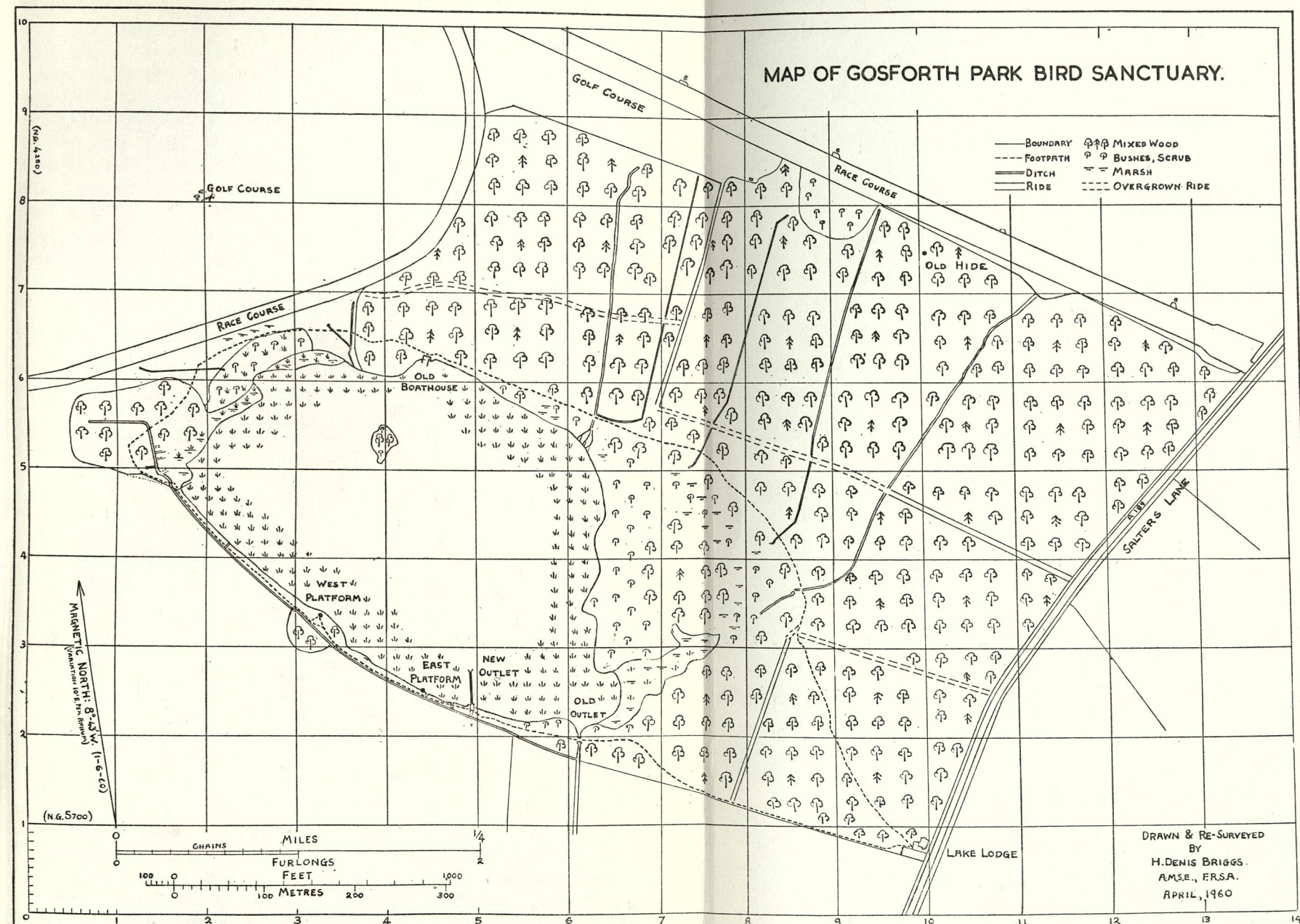
The Ordnance Survey of 1855-64 shows two small islets just north of the west observation platform. These can still be traced in the reed beds and are covered with bushes and scrub. Earth movements, silting and mining subsidences have resulted in the water receding from the east end of the lake so that the former east island is now a circular mound on dry ground, separated from the present margin of the lake by extensive reed beds.

In 1958 the race course became waterlogged some distance west of the lake. At the same time the lake overflowed the footpath at its west end. To relieve this situation, and permit their drains to run freely, the Gosforth Park Company made a new outlet channel from the lake, 133 yards west of the old sluice, and so lowered the level of the lake by 12 to 14 inches. This has substantially reduced the area of open water, especially at the east end. The area enclosed by the present outer margin of the lake (including reed beds that are waterlogged when the lake is full) is approximately 33 acres, while the present area of open water, with the lake full, is about 15 acres. Unfortunately, two mild winters and one very dry summer followed the lowering of the lake level with the result that a considerable spread of vegetation occurred over the mud flats and the shallows.

THE MAP

Until recently there was no suitable map of the area, for most of the ditches and old rides, and some of the footpaths, are not marked on the large scale (1 : 2,500) Ordnance Survey sheets. It was accordingly decided to make a fresh survey and this was carried out early in 1960. The sanctuary is fairly flat so levels were ignored and, after fixing control points by triangulation, a number of closed traverses were made using an army pattern prismatic compass and a hundred foot metal tape measure.

The outline produced, when drawn to the scale of 1 : 2,500, showed close agreement with the Ordnance Survey outline, so the ditches and rides were tackled with more confidence, though frequent cross



checks were made in the field. A grid corresponding to the National Grid, but with a simple numbering system, was superimposed on the final map. For reference purposes two of these grid lines were also marked with the full National Grid number. Each square has an edge of 100 metres or 328 feet, and an area of one hectare, or 2.47 acres. A point on the map is identified by starting at the bottom left hand corner and quoting first the eastings, then the northings, using decimal figures and separating the two numbers by a comma. For example, the position of the old boathouse would be given as 4.4, 6.3. While this method is to be preferred for precise location, names have been applied to the principal rides and ditches. These names, and their positions, are listed below:—

NORTH RIDE	- runs somewhat east of north through the wood from 7.0, 5.8 to the golf course
NORTH RIDE DITCH	- runs almost parallel to the North Ride and about 80 feet to the west
THE BEECH WOOD	- lies to the west of the North Ride
BEECH WOOD RIDE	- traverses the Beech Wood from east to west
BEECH WOOD DITCH	- is almost parallel to the North Ride Ditch and about 200 feet to the west of it
EAST RIDE	- extends eastward from the south end of the North Ride, crossing first the Middle Ditch, then the Long Ditch and the Burn. It then continues to the fence at Salter's Lane
MIDDLE DITCH	} - see East Ride
LONG DITCH	
THE BURN	- see East Ride. This burn originally fed the lake
OLD EAST ISLAND	- the middle of the island is located at 7.2, 3.8 and its extent is indicated on the map by conventional trees
LAKE RIDE	- much overgrown. It runs from the bend in Salter's Lane (10.7, 2.5) to a point 8.6, 3.2
SOUTH RIDE	- runs somewhat west of south from point 8.6, 3.2 to the southern boundary
NORTH LAKESIDE PATH	} self explanatory
SOUTH LAKESIDE PATH	

NATURAL HISTORY NOTES

Various papers and essays on Gosforth Park are included in the References and a systematic list of birds is given in the Appendix. It is felt, however, that, while records of the past make interesting reading, visitors will be more concerned with what they are likely to observe in the sanctuary at the present time—hence this brief account of the natural history.

There is usually a resident pair of mute swans on the lake and some years there are cygnets. Duck form the most important part of the bird population and mallard, teal, wigeon, tufted ducks, pochards, shovellers and coots can nearly always be seen during the autumn and winter months. Weather conditions have a considerable effect both on the numbers, and variety of species present. Hard frost sometimes brings an increase and between 1950 and 1960 the lake has been frozen as early as November 30th (in 1952) and as late as February 20th (in 1960).

Considerable anxiety was felt when the level of the lake was lowered in 1958, so diminishing its area. Fortunately, the effect on visiting wildfowl has not been as serious as was at first feared. Diving ducks continue to visit the lake and, in the autumn, after a dry spell, there are now waders on the mudflats. It is interesting to recall that the lake was drained for a period during the last century. Adamson (1880-81) described it in March 1856 as a "reedy and rushy marsh, the water having been let off for several years." Hancock (1858-60) mentions a pair of ruffs at Gosforth Lake on May 10th, 1857, "... walking on marshy ground left on draining the lake which had been done temporarily some time before." However, on April 6th of the same year he reported a variety of duck, including tufted duck, which seems to suggest that the lake had been filled again. The reason for draining the lake is unknown, but it may have been to eliminate pike before re-stocking with fish. Incidentally, there have been pike in the lake in recent years and small fish have been caught near the old boathouse. Pike have been blamed for the ducks' lack of success in rearing young, but the real culprits may perhaps be foxes.

The steady increase in air traffic to Newcastle Airport (at Woolsington) and the fact that, with the prevailing west winds, aircraft make their "run in" over Gosforth, appeared to provide another threat to the wildfowl. In reality, even large turbo-prop airliners passing low over the lake are virtually ignored by feeding birds although the occasional helicopter causes a panic.

In 1957 there was a herd of about six roe deer, believed to be residents, but these deer are now only occasional visitors. Badgers have quite an elaborate sett in the wood, but during prolonged wet spells this becomes partially flooded and there is some evidence that, under these conditions, some of the badgers resort to a smaller sett on the old East Island. Foxes frequent the sanctuary, but do not appear to be residents, while stoats are found in the embankment of the race course in the vicinity of the point 3.0, 6.6. There are some

hares in the wood and once, while surveying, the writer was winding in his tape when a hare ran out of the wood and stopped, fascinated, with its nose about an inch from the moving tape. It made no attempt to cross, but, after watching with great curiosity for about a quarter of a minute, ran politely round the end of the tape and resumed its journey at speed.

The following brief records, selected from the writer's notebook, serve as a sample of what a regular visitor may see:

10th Nov. 1952	During a late afternoon muster of starlings above the lake a sparrow hawk caught one bird in mid-air.
7th Dec. 1952	Lake frozen. Hooded crows on ice beside ducks.
20th Dec. 1953	Two female smews and a golden-eye on lake.
13th Feb. 1955	Found deer tracks in snow.
3rd May 1955	Saw an osprey twice over lake.
11th Dec. 1955	Sixteen whooper-swans on lake.
21st Jan. 1956	A heron flew across the lake and alighted on the island for a few minutes, then flew off to the north-east.
23rd Apr. 1957	Little crane heard at dusk.
3rd May 1957	Heard "booming" of bittern for twenty minutes.
25th Dec. 1958	Two goosanders on lake.
28th Dec. 1958	Long-tailed tits in hedge along Southern Lakeside Path.
28th Jan. 1959	Lake low, partly due to new outlet completed early this year. Hundreds of tiny frogs, $\frac{1}{2}$ " to $\frac{3}{4}$ " long, on Southern Lakeside Path, beyond the west platform.
29th Nov. 1959	Bittern put up at north-west corner of lake. Ditches running, lake full, outlet running.
1st Jan. 1960	Disturbed two roe deer in wood. Three whooper-swans on lake.
23rd Jan. 1960	Saw adult roe deer in wood.
6th Feb. 1960	Badgers must have been flooded out last weekend.
7th Feb. 1960	Put up bittern at west end of lake.
28th Feb. 1960	Dead roe deer located near bridge over burn. It was a young doe with both hind legs broken at the hocks—evidently an accident while crossing the broken-down sluice wall in snow.
12th Mar. 1960	Close view of roe buck in North Ride, followed by a pretty little doe. A handsome sheld-drake observed on lake.
24th Apr. 1960	Disturbed two roe deer, while following a track through the reeds. A buck, with several tines, led, breathing heavily. It was followed by a doe which headed the buck off when the latter was running towards a tractor at the end of an adjoining field. Was the buck's sight impaired? They were running down wind.

- 10th May 1960 Owlets (tawny) in tree behind boathouse. Parent owl in neighbouring tree.
- 21st May 1960 Two redpolls in hedge at west end of South Lakeside Path.
- 12th June 1960 Yellow flag profuse this year.
- 26th June 1960 Discovered nest of a greater spotted woodpecker in an old birch tree in the wood. A noisy youngster, with bright red cap, kept putting its head out of the hole and calling to the nearby parent.
- 27th Aug. 1960 An astonishing number of grasshoppers between the race course and the north-east corner of the lake.

CONCLUSION

The sanctuary at Gosforth Park is one of the Society's most valuable assets, not only as a refuge for wildlife, but also because it provides an area for potential research within easy distance of the centre of Newcastle upon Tyne. Nevertheless, its management involves difficulties, one of these being that it is only held on a short-term lease, while others are the recent silting-up of the lake and the deterioration of the woodland. It is suggested that in the future, if money becomes available, it may be possible either to purchase, or negotiate a long-term lease of the sanctuary, and also to excavate the east end of the lake by mechanical means and to undertake progressive replanting operations. Unfortunately, these projects are beyond the Society's present resources and it is hoped that this paper may do something to attract the attention of more wealthy organisations to the importance of the sanctuary.

It is also hoped that this brief account of the sanctuary, and the accompanying map, will be of value to members of the Society and will lead to a more comprehensive and scientific assessment of its natural history. A full size duplicate tracing (22" by 16", scale 1:2,500 or 25.3 inches to a mile), and a whole plate negative of the map, have been lodged with the Society for the benefit of future workers. Copies of the full size map may be obtained from the Hon. Secretaries.

The writer wishes to thank all who have shown interest in this paper and to acknowledge gratefully much guidance from Mr. G. W. Temperley and encouragement from Mrs. Grace Hickling.

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MAPS

(Not included in Whitaker's list)

- Plan of the collieries on the Rivers Tyne and Wear, taken from actual surveys by John Gibson, 1787 and 1788.
- One inch Ordnance Survey map of Northumberland of 1863-7 based on the survey of 1855-64.

APPENDIX

LIST OF BIRDS RECORDED IN GOSFORTH PARK, NORTHUMBERLAND
1874-1961

The following systematic list, compiled by G. W. Temperley, is in the Wetmore order, as given in the *Check-list of the birds of Great Britain and Ireland* (1952), published by the British Ornithologists' Union.

1. BLACK-THROATED DIVER <i>Colymbus arcticus</i>	Very rare visitor
4. RED-THROATED DIVER <i>Colymbus stellatus</i>	Very rare visitor
5. GREAT CRESTED GREBE <i>Podiceps cristatus</i>	Occasional visitor
8. BLACK-NECKED GREBE <i>Podiceps caspicus</i>	Very rare visitor
9. LITTLE GREBE <i>Podiceps ruficollis</i>	Resident
30. HERON <i>Ardea cinerea</i>	Occasional visitor
38. BITTERN <i>Botaurus stellaris</i>	Frequent visitor
42. SPOONBILL <i>Platalea leucorodia</i>	One record : 1874
45. MALLARD <i>Anas platyrhynchos</i>	Resident
46. TEAL <i>Anas crecca</i>	Resident
47. GARGANEY <i>Anas querquedula</i>	Occasional visitor
49. GADWALL <i>Anas strepera</i>	Occasional visitor
50. WIGEON <i>Anas penelope</i>	Winter visitor
52. PINTAIL <i>Anas acuta</i>	Winter visitor
53. SHOVELER <i>Spatula clypeata</i>	Winter visitor
55. SCAUP <i>Aythya marila</i>	Occasional winter visitor
56. TUFTED DUCK <i>Aythya fuligula</i>	Resident
57. POCHARD <i>Aythya ferina</i>	Winter visitor
60. GOLDEN-EYE <i>Bucephala clangula</i>	Winter visitor
61. LONG-TAILED DUCK <i>Clangula hyemalis</i>	Rare winter visitor
69. RED-BREASTED MERGANSER <i>Mergus serrator</i>	Occasional visitor
70. GOOSANDER <i>Mergus merganser</i>	Occasional visitor
71. SMEW <i>Mergus albellus</i>	Rare winter visitor
73. SHELD-DUCK <i>Tadorna tadorna</i>	Rare winter visitor
75. GREY LAG-GOOSE <i>Anser anser</i>	Rare winter visitor
76. WHITE-FRONTED GOOSE <i>Anser albifrons</i>	Very rare winter visitor
78(a) BEAN-GOOSE <i>Anser arvensis</i>	Very rare winter visitor
(b) PINK-FOOTED GOOSE <i>Anser a. brachyrhynchus</i>	Very rare winter visitor
82. CANADA GOOSE <i>Branta canadensis</i>	Very rare visitor
84. MUTE SWAN <i>Cygnus olor</i>	Resident
85. WHOOPER-SWAN <i>Cygnus cygnus</i>	Irregular winter visitor
86. BEWICK'S SWAN <i>Cygnus bewickii</i>	Irregular winter visitor
91. BUZZARD <i>Buteo buteo</i>	Rare visitor
92. ROUGH-LEGGED BUZZARD <i>Buteo lagopus</i>	Rare visitor
93. SPARROW-HAWK <i>Accipiter nisus</i>	Resident
98. HONEY-BUZZARD <i>Pernis apivorus</i>	Rare visitor
100. HEN-HARRIER <i>Circus cyaneus</i>	Rare visitor
102. MONTAGU'S HARRIER <i>Circus pygargus</i>	Very rare visitor
103. OSPREY <i>Pandion haliaetus</i>	Rare visitor
105. PEREGRINE FALCON <i>Falco peregrinus</i>	Very rare visitor
107. MERLIN <i>Falco columbarius</i>	Very rare visitor

APPENDIX—continued

110. KESTREL <i>Falco tinnunculus</i>	Resident
116. PARTRIDGE <i>Perdix perdix</i>	Resident
117. QUAIL <i>Coturnix coturnix</i>	Heard from the Park once
118. PHEASANT <i>Phasianus colchicus</i>	Resident
120. WATER-RAIL <i>Rallus aquaticus</i>	Resident
121. SPOTTED CRAKE <i>Porzana porzana</i>	Rare visitor
124. LITTLE CRAKE <i>Porzana parva</i>	Very rare visitor
125. CORNCRAKE <i>Crex crex</i>	Heard from the Park, rare
126. MOORHEN <i>Gallinula chloropus</i>	Resident
127. COOT <i>Fulica atra</i>	Resident
133. LAPWING <i>Vanellus vanellus</i>	Occasional visitor
134. RINGED PLOVER <i>Charadrius hiaticula</i>	Occasional rare visitor
140. GOLDEN PLOVER <i>Charadrius apricarius</i>	Seen flying over
145. COMMON SNIPE <i>Capella gallinago</i>	Resident
147. JACK SNIPE <i>Lymnocyptes minimus</i>	Occasional winter visitor
148. WOODCOCK <i>Scolopax rusticola</i>	Resident
150. CURLEW <i>Numenius arquata</i>	Seen flying over
154. BLACK-TAILED GODWIT <i>Limosa limosa</i>	Very rare visitor
156. GREEN SANDPIPER <i>Tringa ocropus</i>	Rare visitor
157. WOOD-SANDPIPER <i>Tringa glareola</i>	Rare visitor
159. COMMON SANDPIPER <i>Tringa hypoleucos</i>	Occasional visitor
161. REDSHANK <i>Tringa totanus</i>	Occasional visitor
162. SPOTTED REDSHANK <i>Tringa erythropus</i>	Rare visitor
165. GREENSHANK <i>Tringa nebularia</i>	Occasional visitor
178. DUNLIN <i>Calidris alpina</i>	Occasional rare visitor
184. RUFF <i>Philomachus pugnax</i>	Occasional rare visitor
198. GREAT BLACK-BACKED GULL <i>Larus marinus</i>	Occasional visitor
199. LESSER BLACK-BACKED GULL <i>Larus fuscus</i>	Regular visitor
Scandinavian sub-species has been identified	
200. HERRING-GULL <i>Larus argentatus</i>	Common regular visitor
201. COMMON GULL <i>Larus canus</i>	Regular visitor
203. ICELAND GULL <i>Larus glaucoideus</i>	One record
208. BLACK-HEADED GULL <i>Larus ridibundus</i>	Common regular visitor
212. BLACK TERN <i>Chlidonias niger</i>	One record
213. WHITE-WINGED BLACK TERN <i>Chlidonias leucopterus</i>	One record
217/218. COMMON OR ARCTIC TERN <i>Sterna sp.</i>	Once with gulls
232. STOCK-DOVE <i>Columba oenas</i>	Resident
234. WOOD-PIGEON <i>Columba palumbus</i>	Common resident
237. CUCKOO <i>Cuculus canorus</i>	Summer visitor
241. BARN-OWL <i>Tyto alba</i>	Resident
246. LITTLE OWL <i>Athene noctua</i>	Recently resident
247. TAWNY OWL <i>Strix aluco</i>	Resident
248. LONG-EARED OWL <i>Asio otus</i>	Resident
249. SHORT-EARED OWL <i>Asio flammeus</i>	One record
252. NIGHTJAR <i>Caprimulgus europaeus</i>	Very rare summer visitor
255. SWIFT <i>Apus apus</i>	Common summer visitor
258. KINGFISHER <i>Alcedo atthis</i>	Occasional rare visitor

APPENDIX—continued

262. GREEN WOODPECKER <i>Picus viridis</i>	Occasional summer visitor
263. GREATER SPOTTED WOODPECKER <i>Dendrocopos major</i>	Resident
264. LESSER SPOTTED WOODPECKER <i>Dendrocopos minor</i>	Two records
272. SKYLARK <i>Alauda arvensis</i>	Resident
274. SWALLOW <i>Hirundo rustica</i>	Common summer visitor
276. HOUSE-MARTIN <i>Delichon urbica</i>	Common summer visitor
277. SAND-MARTIN <i>Riparia riparia</i>	Common summer visitor
278. GOLDEN ORIOLE <i>Oriolus oriolus</i>	One record
280. CARRION-CROW <i>Corvus corone</i>	Common resident
281. HOODED CROW <i>Corvus cornix</i>	Occasional winter visitor
282. ROOK <i>Corvus frugilegus</i>	Resident
283. JACKDAW <i>Corvus monedula</i>	Resident
284. MAGPIE <i>Pica pica</i>	Resident
286. JAY <i>Garrulus glandarius</i>	Resident
288. GREAT TITMOUSE <i>Parus major</i>	Resident
289. BLUE TITMOUSE <i>Parus caeruleus</i>	Resident
290. COAL-TITMOUSE <i>Parus ater</i>	Resident
292. MARSH-TITMOUSE <i>Parus palustris</i>	Resident
293. WILLOW-TITMOUSE <i>Parus atricapillus</i>	Resident
294. LONG-TAILED TITMOUSE <i>Aegithalos caudatus</i>	Resident
296. NUTHATCH <i>Sitta europaea</i>	Very rare visitor
298. TREE-CREEPER <i>Certhia familiaris</i>	Resident
299. WREN <i>Troglodytes troglodytes</i>	Resident
300. DIPPER <i>Cinclus cinclus</i>	One record
301. MISTLE-THRUSH <i>Turdus viscivorus</i>	Resident
302. FIELDFARE <i>Turdus pilaris</i>	Winter visitor
303. SONG-THRUSH <i>Turdus philomelos</i>	Resident
304. REDWING <i>Turdus musicus</i>	Winter visitor
308. BLACKBIRD <i>Turdus merula</i>	Resident
311. WHEATEAR <i>Oenanthe oenanthe</i>	Very rare visitor
317. STONECHAT <i>Saxicola torquata</i>	Very rare visitor
318. WHINCHAT <i>Saxicola rubetra</i>	Summer visitor
320. REDSTART <i>Phoenicurus phoenicurus</i>	Summer visitor
322. NIGHTINGALE <i>Luscinia megarhynchos</i>	One record
325. ROBIN <i>Erithacus rubecula</i>	Resident
327. GRASSHOPPER-WARBLER <i>Locustella naevia</i>	Rare summer visitor
333. REED-WARBLER <i>Acrocephalus scirpaceus</i>	Very rare visitor
337. SEDGE-WARBLER <i>Acrocephalus schoenobaenus</i>	Summer visitor
343. BLACKCAP <i>Sylvia atricapilla</i>	Summer visitor
346. GARDEN-WARBLER <i>Sylvia borin</i>	Summer visitor
347. WHITETHROAT <i>Sylvia communis</i>	Summer visitor
354. WILLOW-WARBLER <i>Phylloscopus trochilus</i>	Summer visitor
356. CHIFFCHAFF <i>Phylloscopus collybita</i>	Summer visitor
357. WOOD-WARBLER <i>Phylloscopus sibilatrix</i>	Summer visitor
364. GOLDCREST <i>Regulus regulus</i>	Resident
366. SPOTTED FLYCATCHER <i>Muscicapa striata</i>	Summer visitor

APPENDIX—continued

368. PIED FLYCATCHER <i>Muscicapa hypoleuca</i>	Rare summer visitor
371. HEDGE-SPARROW <i>Prunella modularis</i>	Resident
373. MEADOW-PIBIT <i>Anthus pratensis</i>	Resident
376. TREE-PIBIT <i>Anthus trivialis</i>	Summer visitor
380. PIED WAGTAIL <i>Motacilla alba</i>	Occasional visitor
381. GREY WAGTAIL <i>Motacilla cinerea</i>	Occasional visitor
382. YELLOW WAGTAIL <i>Motacilla flava</i>	Rare summer visitor
383. WAXWING <i>Bombicilla garrulus</i>	Occasional visitor
389. STARLING <i>Sturnus vulgaris</i>	Common resident
391. HAWFINCH <i>Coccothraustes coccothraustes</i>	Resident
392. GREENFINCH <i>Chloris chloris</i>	Resident
394. SISKIN <i>Carduelis carduelis</i>	Winter visitor
395. LINNET <i>Carduelis cannabina</i>	Resident
397. LESSER REDPOLL <i>Carduelis flammea cabaret</i>	Resident
401. BULLFINCH <i>Pyrrhula pyrrhula</i>	Uncommon resident
404. CROSSBILL <i>Loxia curvirostra</i>	Very rare visitor
407. CHAFFINCH <i>Fringilla coelebs</i>	Common resident
408. BRAMBLING <i>Fringilla montifringilla</i>	Rare winter visitor
409. YELLOW HAMMER <i>Emberiza citrinella</i>	Resident
410. CORN-BUNTING <i>Emberiza calandra</i>	Uncommon resident
421. REED-BUNTING <i>Emberiza schoeniclus</i>	Common resident
424. HOUSE-SPARROW <i>Passer domesticus</i>	Common resident
425. TREE-SPARROW <i>Passer montanus</i>	Resident

THE GREY SEALS OF THE FARNE ISLANDS

A report on observations made between July 1st, 1960,
and September, 1961

by

J. C. COULSON, B.Sc., PH.D., and GRACE HICKLING, M.A.

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INTRODUCTION

Observations on the grey seal *Halichoerus grypus* (Fabr.) have been continued at the Farne Islands colony throughout the period, the main emphasis during the breeding season being on the marking and counting of young seals. As a result, the number of calves tagged was higher than in any previous year.

October 1960 was particularly stormy and only one visit (on the 29th) could be made. Conditions improved in November, while the weather during December was unusually favourable and a final trip to the four breeding islands on January 13th, 1961, completed the season's observations. An innovation was the use of air transport and on two days, when a strong south-east swell prevented a landing from the sea, the crossing to Staple Island was made by helicopter. In all there were eighteen visits; with the exception of the Wamses, where on one occasion there was a gap of twenty-four days, these were at fairly frequent intervals and it was, accordingly, possible for the first time to obtain a reasonably accurate picture of the whole breeding season.

The Council of the Society wish, once again, to express their thanks to all who have helped this research: these include members and others who have carried out the actual field work, the Nature Conservancy which has provided a grant to cover expenses, and

the Officer Commanding No. 18 Group, Royal Air Force, together with Flt.-Lt. C. Walden, Officer-in-charge of A flight, No. 228 Squadron, through whose good offices the helicopter was made available.

SEASONAL BEHAVIOUR

Counts of seals from July 1960 to October 1961. Eighteen counts were made, all at low water, and the results are given in Table 1; unfortunately, it has still not been possible to obtain any figures for November or December. It will be seen that the numbers vary considerably, even within a short period; for example, in July 1960 they range from 255 on the 4th, 990 on the 14th, to 1,231 on the 27th, while six days later, on August 2nd, they had dropped to 429. Human disturbance did not appear to be a factor in this variation, but it was noticeable that the numbers tended to fall at neap tides, when some of the usual hauling-out islands remained submerged and many of the seals stayed in the water. The fall in numbers became still more apparent if there was a swell and this was well illustrated on August 30th, 1961. On that day the morning high tide had been the highest of the year, but, due to the southerly swell, the areas of rock exposed at low water were considerably smaller than would have been the case at ordinary spring tides and the count showed some 700 seals fewer than on August 14th. Afternoon counts tend to be smaller than those made earlier in the day, an exception being on July 7th, 1961, when, with neap tide, nearly twelve hundred seals were counted. The maximum count of the period and, indeed, the largest ever made at the Farnes, was at low water on September 7th, 1960, a day with a very high spring tide.

Unusually large haul-out on the Brownsman. On March 5th, 1961, some 900 seals were hauled out in a tightly-packed group on the east and south sides of the Brownsman. They were watched at close quarters for nearly an hour during which time others came ashore. There was continual movement among the seals, including a good deal of scratching and rubbing against the rocks, but no sign of sexual activity. Subsequently, quantities of shed hair were found lying over much of the hauling-out area and it was obvious that some, at least, of the seals were moulting. Included were males of all ages and it was noted that the identifying field characteristic mentioned by Backhouse and Hewer (1959) of a dark background skin colour with lighter markings did not always apply to these animals.

Calves of the year often tend to keep by themselves, away from the main parties of seals, and in this instance two tagged youngsters were seen at some distance from the other animals.

TABLE

COUNTS OF SEALS PRESENT THROUGHOUT THE YEAR

Island	1960								
	July 4th	July 14th	July 27th	Aug. 2nd	Aug. 8th	Aug. 24th	Sept. 7th	Sept. 22nd	
1 { Megstone ...	35	98	129	45	20	91	210	49	
South Goldstone ...	—	20	97	—	70	62	5	3	
2 { Inner Farne ...	—	—	—	—	—	—	—	1	
Wideopens ...	13	11	1	2	—	1	19	11	
Scarcars ...	30	47	4	20	120	50	246	152	
The Bush ...	—	—	31	20	45	—	8	20	
3 { Staple Island ...	—	1	—	—	—	—	—	—	
Gun Rock ...	—	—	—	1	—	2	6	15	
Brownsman ...	—	—	—	—	—	—	—	—	
South Wamses ...	—	—	—	—	—	—	—	5	
North Wamses ...	—	—	1	—	—	—	—	15	
Nameless Rock, Sandbags and Roddam & Green	—	—	—	—	—	—	—	—	
4 { Big Harcar ...	9	2	—	—	—	—	1	52	
Little Harcar ...	5	—	—	—	—	—	12	8	
Blue Caps ...	18	—	—	—	—	—	2	5	
5 { Northern Hares ...	—	1	23	—	2	1	—	—	
Longstone End ...	60	—	52	6	80	105	240	66	
Longstone (E. side)	70	80	10	54	5	129	208	185	
6 Knivestone ...	—	450	215	150	275	475	400	87	
7 { Crumstone, Calf & Little Rock	15	230	298	111	200	540	485	227	
Callers ...	—	50	370	20	320	140	340	16	
Total ...	255	990	1231	429	1137	1596	2182	917	
Wind ...	S-SW Light	W 2	Light & vari- able	Light & vari- able	NE 1-2	S-SE 2	NW 3-4	SW light	
Swell ...	N (moder- ate)	S (appre- ciable)	—	NE (moder- ate)	—	—	—	—	
Tide ...	2 days after neap	Taking off from spring	High spring	Neap	Very high spring	Spring	Very high spring	High spring	
Time of low water	1700	1330	1140	1615	1000	1045	1030	1015	
Time of count ...	1400- 1530	1210- 1335	1030- 1200	1410- 1530	0930- 1115	1030- 1205	1015- 1215	1020- 1215	

Island	1961								
	Feb. 17th	Mar. 5th	May 11th	May 15th	June 22nd	June 29th	July 7th	July 31st	Aug. 14th
1 { Megstone ...	14	6	75	150	87	4	232	7	168
South Goldstone ...	1	—	—	3	—	50	—	78	—
2 { Inner Farne ...	—	1	—	—	—	—	—	—	—
Wideopens ...	—	1	—	—	—	—	10	—	—
Scarcars ...	—	85	19	18	4	18	11	14	10
The Bush ...	—	—	—	—	—	60	—	10	—
3 { Staple Island ...	—	—	—	—	—	—	—	—	—
Gun Rock ...	—	—	—	—	—	—	—	—	—
Brownsman ...	—	900	—	—	—	—	—	—	—
South Wamses ...	—	—	—	—	—	—	—	—	—
North Wamses ...	3	2	—	—	—	—	—	—	—
Nameless Rock, Sandbags and Roddam & Green	170	—	—	—	—	—	—	—	—
4 { Big Harcar ...	400	—	—	—	—	—	—	—	—
Little Harcar ...	—	—	—	—	—	—	—	—	—
Blue Caps ...	180	—	—	—	—	—	—	—	—
5 { Northern Hares ...	125	170	—	—	—	—	—	1	12
Longstone End ...	—	—	210	2	—	51	—	105	90
Longstone (E. side)	—	17	—	215	85	152	115	—	162
6 Knivestone ...	10	57	200	125	200	410	300	450	392
7 { Crumstone, Calf & Little Rock	650	255	73	176	90	315	360	406	580
Callers ...	—	2	—	6	40	254	170	265	205
Total ...	1553	1496	577	695	506	1314	1198	1336	1675
Wind ...	Light & vari- able	Light & vari- able	S 2	E 3	W 4	W 3-4	NW 3-4	SW light	WNW 4
Swell ...	SE (slight)	—	NE (moder- ate)	Slight	—	—	—	—	S (moder- ate)
Tide ...	Spring	Spring	Taking off from spring	Spring	Neap	Spring	Neap	High spring	Spring
Time of low water	1000	1015	1930	0950	1600	1000	1730	1200	1120
Time of count ...	1005- 1140	1020- 1150	1720- 2025	0850- 1015	1500- 1620	1000- 1115	1630- 1750	1030- 1300	1100- 1230

THE BREEDING SEASON

Occupation of the breeding areas. On October 17th W. Shiel noticed a group of adults near the South-east Hole on Staple Island, while a calf, which he thought new-born, was on the west side of the North Wamses. This is the earliest date so far recorded for a birth on the Farnes. Twelve days later, on October 29th, although it was still too stormy to land, a survey from the boat showed that there were at least six calves, as well as several adults, on the west of the North Wamses. No calves were visible on the South Wamses, while ten or more were on the Staple Island flat, with 15 or 16 in the north-west gully and one or two on the west side. The only calves on the Brownsman were two in the North Cove. Both the gully and the North Cove were colonised earlier than usual (the first calves are frequently born near the South-east Hole on Staple Island and on the east beach of the Brownsman) and this may have been because the long period of strong east and south-east winds, and the resultant swell, forced the cows to come ashore on the more sheltered, northerly sides of the islands.

Spread of the breeding season. Breeding on all the islands started earlier than in 1959, but, despite this, the dates by which the first 50% of the births had occurred (Table 2) differed little from those recorded in 1956-59. With the exception of single calves seen on the North and South Wamses on December 24th, and on the Brownsman on January 13th, breeding had stopped by mid-December. The Brownsman calf was still in the first coat, but was probably about a fortnight old.

TABLE 2

THE DATE BY WHICH THE FIRST 50% OF 1960'S KNOWN BIRTHS HAD OCCURRED ON THE FOUR BREEDING ISLANDS

Staple Island	...	...	November 8th
North Wamses	...	...	November 6th
South Wamses	...	...	November 15th
Brownsman	...	...	November 17th

Calf population and mortality rate in 1960. Counts of both live and dead calves were again made on the breeding islands and these results have been used to compile Table 3. It will be seen that there was a marked change in the breeding numbers on individual islands: over a hundred more calves were born on Staple Island, the Brownsman took the place of the North Wamses as the island with the second largest colony, while the numbers on the South Wamses remained virtually unaltered.

Births totalled 1,012 and 165 calves were found dead.

There was also a change in the mortality rate, the average for the islands rising from 13.5% to 16.3%, mainly because of more deaths on Staple Island. Here the increased mortality rate among later born calves was clearly shown: the rate for animals born before November 5th was 10.8%, and for those born between November 6th and 18th 23.7%, while 22 (46%) out of the 48 calves born after November 18th died. Corresponding rates for the Brownsman were 8%, 10% and 13.9%: these figures, while showing an increase, are very much smaller than those for Staple Island and suggest that the calf density on this island is still below the level likely to lead to high mortality.

TABLE 3

CALF POPULATION AND MORTALITY RATE, 1960

NUMBER OF CALVES (ALIVE AND DEAD) BORN BETWEEN VISITS

Date of visit	Brownsman	Staple Island	North Wamses	South Wamses
29.10.60	2*	28*	6*	*
5.11.60	11	175	*	*
8.11.60	*	*	119	13
9.11.60	*	*	7	—
16.11.60	92	*	*	*
18.11.60	*	266	*	*
24.11.60	*	32	*	*
25.11.60	*	*	76	22
26.11.60	68	*	*	*
1.12.60	*	14	*	*
12.12.60	54	*	*	*
13.12.60	—	*	*	*
14.12.60	*	2	*	*
17.12.60	—	—	*	*
18.12.60	—	*	*	*
19.12.60	—	*	15	6
24.12.60	*	*	1	1
13.1.61	1	—	—	—
No. born	228 (53)	517 (418)	224 (433)	43 (62)
No. found dead on Island	27 (9)	109 (68)	29 (47)	1 (6)
Percentage mortality	11.8% (17%)	21.1% (16.3%)	12.9% (10.9%)	— (10%)

Percentage mortality for Farne Islands, 1960 = 16.3% (13.5%)

NOTES (1) An * indicates that no landing was made on that day.

(2) 1959 figures, where applicable, are given, for comparison, in brackets.

MARKING CALVES

Tagging. All calves were tagged on the tail, the tag being applied by the same method as that used in the latter part of the 1959 season (Coulson and Hickling, 1960). An attempt was made to tag every calf found alive on the islands and, as a result, 815 were marked. Unfortunately, experience has shown that some tags, especially those placed near the tip of the tail, may pull out. This is particularly likely to happen if the animal becomes entangled in fishing nets. Experiments in methods of tagging are being continued.

Tail-tagged animals were seen occasionally among the hauled-out seals, the maximum being six on March 5th, 1961. On other visits the numbers ranged from one to four and, with the possible exception of one animal seen on June 22nd, 1961, all appeared to have been marked during the preceding breeding season.

Branding. During the autumn of 1960 experiments in branding grey seals with a hot iron were carried out by officers of the Nature Conservancy on North Rona, the Orkneys and the Farne Islands. On December 13th and 14th 18 calves on the Brownsman and 40 on Staple Island were marked with a cross; the actual branding operation appeared to cause the calves—all second coaters—no discomfort, but within two days some of the brand marks showed signs of sepsis and this was followed by the sloughing off of the skin.

RECOVERIES

Details of all recoveries of Farne marked seals made during the period are given in Table 4: these include calves whose tag numbers were read, sight records, and branded animals that had lost their tail tags.

There have been four more foreign recoveries of tagged seals—one from Denmark, one from Germany and two from Holland. No. 6217 had been seen at the mouth of the R. Thames on January 13th—the most southerly English recovery of a Farne marked seal—and its subsequent journey of some 185 miles north-eastward to Noord Holland was accomplished in a maximum of 12 days.

Seals from the Farnes were among the animals that frequented the Isle of May in early spring and the lightkeepers, Mr. Watt and Mr. Edwardson, were able to read some of the tag numbers. Among other Scottish recoveries the most interesting is that of No. 5735, found off the Island of Raasay when seven weeks old. This is the first Farne recovery from the west coast of Scotland and probably involved a journey of at least 380 miles. No. 6152 had a well-charted

journey, for it was seen six times between December 28th and January 15th, during which time it had travelled from Berwick-on-Tweed to Rattray Head in Aberdeenshire.

One of the animals marked during the 1959-60 season was again seen: it was No. 5460, recorded on the R. Ouse, in Yorkshire, in May 1960 (Coulson and Hickling, 1960) and still in the same area six months later. Another interesting Yorkshire recovery was that of No. 6002. This was one of the branded seals and it was found on the beach near Withernsea on January 25th and taken to the R.S.P.C.A. Home in Hull. On January 28th it was put on board the *Fountains Abbey*, bound for Rotterdam, and released off the Wash. Ten days later it had returned to the Humber and it was taken from the water only about 100 yards from the jetty from which the ship had sailed. Its condition has deteriorated considerably and it was, accordingly, destroyed.

TABLE 4
RECOVERIES OF FARNE MARKED SEALS

(a) ANIMALS WHOSE TAG NUMBERS WERE READ			
No.	Date marked	Recovery details	Date recovered
5460	5.1.60	Weighton Canal entrance, R. Humber, E. Yorks. (49 weeks)	6.11.60
5472	5.11.60	(1) Aldbrough, E. Yorks. (5 weeks)	2.12.60
		(2) Killingholme, Lincs.	ca. 5.12.60
5485	"	Ravenscar, N. Yorks. (5 weeks)	8.12.60
5488	"	Off Usan, Angus. Drowned in cod net (8 weeks)	29.12.60
5605	"	10 m. E. of Coquet Is., Northd. Caught in salmon nets (21 weeks)	ca. 24.3.61
5613	"	Hawsker, N. Yorks. Found dead (7 weeks)	17.12.60
5614	"	3 m. off Auchmithie, nr. Arbroath, Angus. Killed in salmon drift net (22 weeks)	30.3.61
5621	"	Off Farne Islands. Drowned in salmon drift net of <i>Faithful II</i> (9-10 weeks)	Jan. 1961
5638	"	Greystonelees Salmon Fishery, Eyemouth, Berwickshire. Captured in bag net (18 weeks)	11.3.61
5648	9.11.60	Sunderland, Co. Durham (7 weeks)	21.12.60
5696	16.11.60	Holy Island, Northd. (4 weeks)	8.12.60
5701	9.11.60	Isle of May (18 weeks)	12.3.61
5708	"	(1) Wideopens, Farne Islands (5 weeks)	4.12.60
		(2) 6 m. E.N.E. of Berwick-on-Tweed. Drowned in salmon drift net of <i>Border Lassie</i>	15.2.61
5719	"	Seahouses, Northd. Found dead (11 weeks)	23.1.61
5724	"	At sea, 57°19'N, 0°07'E. Found dead in trawl net of Belgian trawler (11 weeks)	19.1.61

TABLE 4—continued

No.	Date marked	Recovery details	Date recovered
5735	16.11.60	Off Island of Raasay, North Minch. Found drowned in ground net (7 weeks)	28.12.60
5754	"	Loosduinen, Netherlands (7 weeks)	ca.26.12.60
5767	"	Off Berwick Bay. Killed in salmon drift net (8 weeks)	11.1.61
5800	8.11.60	6½ m. E. of North Berwick. Drowned in salmon drift net of <i>White Heather</i> (14 weeks)	9.2.61
5836	16.11.60	Isle of May (16 weeks)	{ 27.2.61 12.3.61
5870	18.11.60	Off Scurdy Ness, Montrose, Angus. Drowned in cod net (ca.10 weeks)	5.1.61
5872	"	Newtonhill, Kincardineshire. Killed in bag net (21 weeks)	27.3.61
5878	"	3 m. E.N.E. of North Carr lightship. Caught by fishing boat (26 weeks)	28.4.61
5937	"	Off mouth of R. Eden, Fife. Shot (28 weeks)	16.5.61
5947	"	White Buoy Sands, nr. Boston, Lincs. (5½ weeks)	17.12.60
5968	24.11.60	(1) Whitley Bay, Northd. (7 weeks)	23-24.12.60
		(2) Seaton Sluice, Northd. Found dying	24.12.60
6002	"	(1) Tunstall, nr. Withernsea, E. Yorks. Returned to sea off Wash, 53°9'N, 0°50'E (10-11 weeks)	25.1.61
		(2) In Humber, nr. Hull. Destroyed	7.2.61
6004	"	4 m. N.W. of Whitby, N. Yorks. Drowned on hook of line fishing vessel <i>Sea Harvest</i> (14 weeks)	15.2.61
6024	"	Off Farne Islands. Drowned in salmon drift net of <i>Faithful II</i> (8-9 weeks)	Jan.1961
6077	18.12.60	Off Kinnaird Head, Aberdeenshire. Hooked on cod hand line and released (6 weeks)	23.1.61
6082	26.11.60	Isle of May (17 weeks)	5.3.61
6086	"	Nr. Sunderland, Co. Durham. Destroyed (5 weeks)	30.12.60
6101	25.11.60	Mablethorpe, Lincs. (7 weeks)	{ 7.1.61 10.1.61
6102	"	Girdleness, Aberdeenshire (11 weeks)	5.2.61
6108	"	(1) Tweedmouth Dock, Northd. (4½ weeks)	18.12.60
		(2) R. Tweed. Found dead	Jan.1961
6120	"	5½ m. E. by N. of Berwick-on-Tweed. Found in salmon drift net of <i>Star Divine</i> (15 weeks)	17.2.61
6123	"	5 m. E. by S. of Berwick-on-Tweed. Found in salmon drift net of <i>Star Divine</i> (14 weeks)	25.2.61
6128	"	Goswick, Northd. Caught in salmon nets (24 weeks)	27.4.61

TABLE 4—continued

No.	Date marked	Recovery details	Date recovered
6146	1.12.60	Berwick Bay. Caught in salmon drift net of <i>Mary Manson</i> (11 weeks)	2.2.61
6151	17.12.60	Norderney, E. Frisian Islands, Germany. Washed up dead on beach (10 weeks)	31.1.61
6152	"	(1) Berwick-on-Tweed (4-5 weeks)	28.12.60
		(2) Cellardyke, Fife	2.1.61
		(3) Murcar, nr. Aberdeen. Cared for in dogs' home; released later	8.1.61
		(4) 3½ m. N. of Aberdeen	11.1.61
		(5) Fraserburgh, Aberdeenshire	13.1.61
		(6) Rattray Head, Aberdeenshire	15.1.61
6157	"	Burghead, Morayshire (9 weeks)	2.2.61
6159	"	Seaton Carew, Co. Durham (5 weeks)	11.1.61
6162	"	Kirkside, nr. Montrose. Killed in bag net (16 weeks)	10.3.61
6174	18.12.60	8 m. E.N.E. of Berwick-on-Tweed. Drowned in salmon drift net (19 weeks)	30.3.61
6182	13.12.60	Mablethorpe, Lincs. (6 weeks)	18.1.61
6188	12.11.60	Scarborough, Yorks. Found dead (7-8 weeks)	4.1.61
6194	"	Nissum breeding, Lim Fjord, Denmark. Caught in trap (12 weeks)	4.2.61
6204	17.12.60	Redcar, N. Yorks. (6-7 weeks)	13.1.61
6217	24.12.60	(1) Shoeburyness, Essex (3-4 weeks)	13.1.61
		(2) Bergen aan Zee, Noord Holland, Netherlands. Described as "weakly" and died of pneumonia on 24.2.61	25.1.61
6262	1.12.60	Cley, Norfolk. Appeared to have gunshot wounds (7 weeks)	{ 31.12.60 1.1.61
6276	24.12.60	Abertay Bank, R. Tay. Shot (22 weeks)	24.4.61
6280	"	Off Berwick Bay. Caught in salmon nets. (7-8 weeks)	14.1.61
6283	"	Hemsby, Norfolk (5-6 weeks)	19.1.61
6296	"	Nr. St. Abb's Head, Berwickshire. (3-4 weeks)	7.1.61
6327	"	R. Tees. Found dead on rocks (31 weeks)	31.7.61
6359	14.12.60	Isle of May. (15 weeks)	27.2.61
6373	"	Do. (16 weeks)	5.3.61
6374	"	Abertay Bank, R. Tay. Shot (20-21 weeks)	7.4.61
6378	17.12.60	Berwick-on-Tweed. Shot (8 weeks)	16.1.61
6380	"	Isle of May (14 weeks)	27.2.61

NOTE: Approximate age at time of recovery is given in brackets. Unless otherwise stated all animals have been recovered alive and in a number of cases are known to have returned to the sea.

TABLE 4—*continued*

(b) SIGHT RECORDS OF TAIL-TAGGED SEALS

Place	Date seen
Blyth, Northd.	ca.17.12.60
Rockhall salmon fishing station, nr. Montrose	8.1.61
Mouth of R. Ugie, Peterhead, Aberdeenshire	12.1.61
Isle of May (four)	1-2.4.61

(c) BRANDED SEALS

Recovery details	Date recovered
Catterline, Kincardineshire. Killed	11.2.61
Nr. Cullen, Banffshire. Caught in salmon nets	mid-Feb.1961
Between Stavanger and Egersund, Norway.	Feb.1961
Caught in fishing net	

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Photograph by P. Evans

COLLARED DOVES. First bred in the two counties in 1958 and now increasing.

ORNITHOLOGICAL REPORT FOR NORTHUMBERLAND AND DURHAM FOR 1961

Compiled from the notes and records of members of
the Natural History Society of Northumberland,
Durham and Newcastle upon Tyne, the Teesmouth
and Tyneside Bird Clubs, and other observers

by

D. G. BELL, B.A., M.B.O.U.

INTRODUCTION

In compiling this report I have been very conscious of how much depends on the co-operation of other people: it is very much the result of team work. Many thanks are due to those who submitted records or who helped in their sorting and evaluation: their names are listed after the ringing recoveries.

Knowledge of the observer is of prime importance in judging an unusual record and when this is not possible on a personal basis the opinion of others is indispensable. As so many observers in the two counties are members of the Natural History Society, the Teesmouth Bird Club or the Tyneside Bird Club, a special committee, consisting of Messrs. E. L. Arnold, M. Bell, J. C. Coulson, P. Evans, B. Little and P. J. Stead, was formed from these three groups to give advice. Where necessary the opinions of other bird-watchers have also been sought.

Readers not well acquainted with the large area covered by this report may like to know the county in which some of the less well-known places are situated. In Northumberland are:—Amble, Angerton, Ashington, Bamburgh, Beal, Bedlington, Belsay, Bolam Lake, Broomlee Lough, Budle Bay, Bywell, Cambo, Capheaton, Catcleugh Reservoir, Chathill, Colt Crag Reservoir, Craster, Cresswell, Dipton Woods, Druridge Bay, Dunstanburgh, Elswick, Featherstone Park, Fenham Flats, Fenwick, Font Reservoir, Forest Hall, Gosforth Park, Greenlee Lough, Greenhead, Grindon Lough, Hallington Reservoir, Haltwhistle, Hartley, Haydon Bridge, Heddon, Holburn Moss, Holywell Ponds, Howick, Killingworth Pond, Kirkwhelpington, Kyloe, Longhorsley, Monks' House, Morpeth, New Haggerston, Newton Bog, Powburn, Ross Back Sands, Rothbury, St. Mary's Island, Seahouses, Seaton Burn, Seaton Sluice, Stagshaw, Walbottle, Wallsend, Whitley Bay, Whittledene Reservoir, Wylam.

In Durham are:—Blaydon, Cleadon, Coxhoe, Crimdon Dene, Crookfoot Reservoir, Hamsterley, Houghton-le-Spring, Hurworth Burn Reservoir, Langdon Beck, Marsden Rock, Seaton Carew, Sherburn, Shotley Bridge, Smiddyshaw Reservoir, Souter Point, Spennymoor, Stanley, Thorpe Thewles, Whitburn, Wingate, Wynyard.

NOTE: † Indicates record accepted by the *British Birds* Rarity Records Committee.

CLASSIFIED NOTES

1. Black-throated Diver *Gavia arctica*

Frequently identified off the Northumberland coast, but none in Durham. Records refer to the first 5 and last 4 months of the year. Small great northern are very similar to this species and, in flight, the red-throated diver can give the illusion of being straight-billed and dark-backed. All records of black-throated, the rarest of the three on our coast, should therefore be supported by full details.

2. Great Northern Diver *Gavia immer*

Mostly single birds reported off the Northumberland coast until 7 Apr., but 4 seen together off Holy Island in Jan. and off Bamburgh in Mar. Some 10 birds recorded in the last 4 months, including 2 at Hartlepool and 1 at Whitburn in Oct.—the only Durham coastal records. Inland: 1 at Crookfoot Reservoir on 5 Nov. (ES) and another at Smiddyshaw Reservoir on 17 Dec. (JAB).

4. Red-throated Diver *Gavia stellata*

Much the commonest diver, and seen in every month. Big concentrations were 40-50 on the sea off Ross Back Sands on 5 Mar. (PJS) and ca.100 in Druridge Bay by the end of Oct. (BE). The Hartlepool maximum was a total of 53 on 28 Jan. (RAM), when 1 in summer plumage was on Hurworth Burn (BU). 1 on Holywell Ponds on 11 Nov. (BG).

5. Great Crested Grebe *Podiceps cristatus*

2 young reared in Northumberland on one water and inconclusive evidence of breeding at another. 3 abortive breeding attempts made at 2 Durham localities. Birds occurred on 7 inland waters and, along the coast, in ones and twos on some 24 occasions throughout the year.

6. Red-necked Grebe *Podiceps grisegena*

In Jan. and Mar. up to 4 off Ross Back Sands and 1 at Holy Island (MB, CW, BG, JDP *et al.*). 1 at Holy Island on 1 Sept. was in summer plumage and 1 off Bamburgh on 26 Nov. partially so (SRS). No Durham records.

7. Slavonian Grebe *Podiceps auritus*

Seen in the Bamburgh-Holy Island area until 1 Apr., maximum 60 counted on calm sea off Ross Back Sands on 5 Mar. (PJS). In this period also occurred twice in Druridge Bay and once at North Gare, Teesmouth. Only 4 autumn records, all off the Northumberland coast.

8. Black-necked Grebe *Podiceps nigricollis*

2 off Ross Back Sands on 2 Jan. (MB, JDP, DTP); 1 at Hartlepool on 15 Jan. (PR, DSS, JVH).

14. Storm Petrel *Hydrobates pelagicus*

1 was harried by an arctic skua at Seaton Sluice on 19 Sept. (RMW, SRS); another fluttered along Hartlepool promenade in the gale of 19 Oct. (ALC).

16a. Manx Shearwater *Procellaria puffinus*

1 passed north at Hartlepool on 30 Mar. (RAM), but no others anywhere until 10 May, when mainly northerly movement began to be noted along the coast. June was peak month for records: at Hartlepool alone, in 8 days, 590 flew south and 464 flew north, mostly during the last week. It is impossible to say how many different individuals these figures represent, as many birds were probably temporary residents in the fishing area and liable to be counted more than once. Largest flock at Hartlepool was 69 on 30 June, but 150 were resting on the sea a mile off Souter Point on 23 June (JAB). At Hartlepool, only 3 records for Aug., none for Sept., and 1 for Oct. In Northumberland, however, mainly northerly movement continued well into Sept., with 3 Oct. records and even 2 Nov. ones.

19. Great Shearwater *Procellaria gravis*

Lone great shearwaters identified off St. Mary's Island on 11 Aug. (JDP, SRS, RMW), off Seaton Sluice on 15 Aug. (JDP), and 16 Aug. (SRS, MM), off Holy Island on 8 Sept. (RK, SRS) and off St. Mary's Island on 17 Sept. (JDP); in addition, J. Lilburn, who has had wide experience of sea-birds in both hemispheres, reported several off Holy Island in Aug. Several other brownish shearwaters reported were not identified with certainty, but probably included great and Balearic shearwaters, and perhaps even dark fulmars. It should also be borne in mind that a strong light can make sooty-black appear brownish and that shadow, reflection and pollution can all make white underparts look darker.

21. Sooty Shearwater *Procellaria grisea*

An all-dark arctic skua, showing no wing-flashes and banking low over the waves into a head-wind, can look remarkably like a sooty shearwater, but 1 was satisfactorily identified off Hartlepool on 15 July (RAM), as were 3 or 4 on 18 Oct. (PJS, BJC). 8 or 9 others were recorded off Seaton Sluice and Holy Island in Aug., Sept., and early Nov. (BG, RK, SRS, MM).

26. Fulmar *Fulmarus glacialis*

Inland, single birds occurred in May at Holywell Ponds and Heddon, and in June at Powburn, Hurworth Burn and Wingate; as many as 25 or 30 flew east over Walbottle on 17 Nov. at a height of ca.800 feet (RR); 2 pairs bred at an unusual inland site near Fenwick (BL). From May to Sept. mainly northerly coastal movement was noted, the highest numbers being 311 at Seaton Sluice on 25 May (CW, BG, SRS) and 208 at Holy Island on 3 Sept. (SRS). Apparently absent altogether in Oct.

27. Gannet *Sula bassana*

From 12 Mar., when 76 flew north off Newton (OPJ), coastal movement frequently involved hundreds of birds. The biggest count was 735 flying north off Holy Island

on 3 Sept. (SRS). Movement was both north and south, sometimes simultaneously : on 8 Aug. 450 flew south and 190 flew north in a 3 hour watch at St. Mary's Island. At Holy Island on 31 Aug. 492 flew north and 156 flew south in 75 minutes. (SRS).

28. Cormorant *Phalacrocorax carbo*

Again nested on Marsden Rock, on which 31 birds were counted on 1 May (DGB). Single inland records at Bywell, Blaydon, Hexham and Smiddyshaw Reservoir.

29. Shag *Phalacrocorax aristotelis*

At Dunstanburgh 4 pairs bred and at least 4 young reared (ER, JMB).

30. Heron *Ardea cinerea*

First noted back at the south Durham colony on 4 Feb. ; by 13 Feb. there were 3 occupied nests, and at least 7 (with shells below) on 22 Mar. (VFB) ; on 8 Apr. 12 or 13 occupied nests were seen (PJS, DGB) and on 8 May ca.30 young (VFB). 14 adults were present at the only remaining Northumberland heronry on 5 Mar., but on 22 Apr. only 2 young and 1 egg were in the nests, after apparent nest-robbing (AJC).

45. Mallard *Anas platyrhynchos*

Marked northerly movement in Nov., biggest numbers being 650 at Seaton Sluice on 4 Nov. (SRS, BG), and 1,184 (in 4½ hours) at Seahouses on 19 Mar.—the latter in a light south-east wind (JRM, RCP). At least 16 breeding records.

46. Teal *Anas crecca*

4 broods reported on 1 water, and 1 brood on another. Numbers in Gosforth Park reached a peak of ca.700 in Nov. (ER), the largest concentration reported.

47. Garganey *Anas querquedula*

Arrival : a drake at Newton on 18 Mar. (RMW, SRS) and a pair at Teesmouth on 24 Mar. (JAB). Non-breeding birds remained at Teesmouth all summer and others occurred on Hurworth Burn and on 7 Northumberland waters. No breeding records.

49. Gadwall *Anas strepera*

Reported all months except May to July, maximum 5 on 9 Sept. at Gosforth Park Lake (RMW, ER, SRS) where the species was most often noted. Altogether birds occurred on 7 waters in Northumberland and 4 in Durham. The only coastal record concerns 4 passing Hartlepool on 4 Oct. (PR).

50. Wigeon *Anas penelope*

Recorded every month, birds being seen in early July at several places near the Tees estuary, Hurworth Burn and Crookfoot Reservoirs, Gosforth Park, Seaton Burn and Seaton Sluice. A big influx occurred on 24 Sept., when many hundreds appeared in the Tees estuary or flew north at Hartlepool, and 1,370 flew north in 3 hours at St. Mary's Island (ALC, RAM, BG, JDP *et al.*). Numbers in the Holy Island-Bamburgh area reached over 4,000 in early Jan. and again in late Dec. (DGB, BE).

52. Pintail *Anas acuta*

Records for all months except Jan. A brood of 9, only just on the wing, appeared at Teesmouth in early July and must have been reared locally (PJS). 15 at Holburn Moss on 16 Sept. (BG) was the largest flock.

On Gosforth Park Lake on 22 Sept. a duck dived repeatedly with pochard for ca.20 minutes, remaining submerged for up to 10 seconds (BG). In previous years mallard, shoveler and wigeon have also been observed diving calmly and repeatedly on the same lake, presumably for food (DGB).

53. Shoveler *Spatula clypeata*

Very few records until Mar., but later a very large number for the Tees estuary was 53 on 23 July (JAB) while up to 60 frequented Gosforth Park in Aug. and Sept. (ER, CW *et al.*). At least 6 broods were seen in Northumberland.

54. Red-crested Pochard *Netta rufina*

2 eclipse drakes† of unknown origin were at Seaton Burn 8-13 July (ER, BGR, DH, BG, JDP). Several unpinioned red-crested pochards are kept at Rossmere Park, West Hartlepool, over 30 miles away, but are not known to stray far. A fine collection of *pinioned* wildfowl, that includes this and many other species, is kept at Sweethope Lough, Northumberland.

55. Scaup *Aythya marila*

Recorded every month, but most during the northerly duck movements in Nov. (maximum 90 in 3½ hours on 12 Nov. off St. Mary's Island : JDP). Reported on 8 inland waters in Northumberland and 9 in Durham. Up to 5 occurred at Hurworth Burn over 9 months of the year (ES *et al.*).

56. Tufted Duck *Aythya fuligula*

2 broods seen in Northumberland and 8 in Durham. The biggest flocks at some individual waters were :

Whittledene Reservoirs :	175 in Dec. (SRS)
Capheaton Lake :	156 in Jan. (AM)
Gosforth Park Lake :	137 in Jan. (BG)
Seaton Burn :	120 in Jan. (ER)
Font Reservoir :	ca.100 in Dec. (BE)
Holywell Ponds :	ca.100 in Jan. (CED)
Bolam Lake :	88 in Dec. (AM)
Greenlee Lough :	ca.70 in Jan. (HD)
Killingworth Pond :	55 in Mar. (DGB)
Hurworth Burn :	51 in Apr. (ES)

57. Pochard *Aythya ferina*

A brood of 4 ducklings in Durham on 21 June had reduced to 2 by 22 July. Seaton Burn again showed large numbers, with a peak of 330 on 26 Feb. (BG). Up to 80 occurred at Holywell Ponds and Broomlee Lough and up to 60 at Gosforth Park in the early months, numbers building up rapidly again in Nov. 6 coastal occurrences include 36 flying south off Hartlepool on 24 Oct.

60. Goldeneye *Bucephala clangula*

Recorded every month, including 1 at Newton Bog in June (WSC, JMB) and 1 at Cresswell Ponds in July and Aug. (BG, RMW). Hundreds flew north in Nov., maximum 143 off Seahouses on 19 Nov. (JRM, RCP). On 5 Nov., the day of the heaviest Durham coastal movement, 52 counted on Whittledene Reservoirs (BL), the largest inland concentration of the year.

61. Long-tailed Duck *Clangula hyemalis*

The maximum for the year was 69 off Bamburgh and ca.30 off Holy Island on 19 Feb. (JDP). Inland: 1 on a pond near Amble on 29 Oct. (ABel.) and 1 on Billingham Pond on 25 Nov. (MS, PD). A party off Seaton Carew in late autumn numbered 8 in Dec. (PJS *et al.*).

62. Velvet Scoter *Melanitta fusca*

Occurred every month. 22 wintering at Hartlepool had decreased to 10 by the end of Jan. Elsewhere rarely more than 4 seen together. 1 at Cresswell Pond on 29 Oct. (MM).

64. Common Scoter *Melanitta nigra*

The flock off Bamburgh probably numbered over 1,000 in Feb. (ABel.) and again in Nov. (JMB). Largest Durham count was ca.300 in 1 flock flying north off Souter Point on 18 Sept. (ES). 4 inland records in Apr.-June include 12 on Hallington Reservoir on 29 Apr. (BL).

67. Eider-Duck *Somateria mollissima*

3 nests with eggs reported on the mainland in Northumberland. Biggest count was between Budle Bay and Seahouses in Mar., with 656 on 12 Mar. and 650 on 28 Mar. (JDP, MB). The Seaton Sluice flock reached a peak of 35 on 21 Jan. (JDP). 8 at Crimdon Dene on 22 Oct. (BU) was the largest Durham party.

69. Red-breasted Merganser *Mergus serrator*

Recorded every month, but by far the largest count was 70 in 2 compact flocks off Ross Back Sands on 5 Mar. (PJS). A wintering party off Crimdon Dene reached 19 on 7 Feb., and though all had gone by the end of Apr. the flock began to re-assemble in Nov. (ES). A drake was on Newton Bog on 18 Mar. during bad weather (RMW).

70. Goosander *Mergus merganser*

Present Jan. to May, maximum 22 at Whittledene on 12 Feb. (BL). The first autumn record was 1 (later a pair) in the Tees estuary on 24 Oct. (RAM). 1 swam with scoter off Seaton Carew on 17 Dec. (PJS).

73. Sheld-Duck *Tadorna tadorna*

1,100 in the Tees estuary on 30 Jan. (PJS) and 348 between Bamburgh and Budle Bay on 12 Mar. (JDP) were the Durham and Northumberland maxima respectively. Eastward moult migration along the Tyne Gap: ca.60 at 2030 hours near Haydon Bridge on 5 July (EML, RMTG) and 21 at 2135 hours over Haltwhistle on 11 July (MP). In addition, there are some records concerning birds possibly returning

from moult migration: 4 on Grindon Lough on 22 Jan. flew west-south-west when disturbed (AJC); 1 there on 17 Feb. (CED) and 2 on Colt Crag Reservoir on 19 Feb. (GWT, AJC). 6 in Gosforth Park on 12 Dec. (EM).

75 and 78b. Grey Lag-Goose *Anser anser* and Pink-footed Goose *Anser arvensis brachyrhynchus*

Several reports of unidentified grey geese in the early months include large skeins flying west through the Tyne Gap between 12 and 18 Feb., all identified being pinkfeet (AJC *et al.*). Some 350 grey-lags roosted at Holburn Moss in Mar. (PJS). 3 reports of grey geese in May and June included both species (FC, SRS, ER, GT). On 25 Aug. 39 early arrivals flew in at Fenham Flats (ABla., BL), but the real influx did not start until the end of Sept. Most of the large numbers reported in Oct. were pinkfeet, but a total of 82 flying over Fenham Flats between 22 Oct. and 4 Nov. were all grey-lags (FS), as were a dozen geese at Crookfoot Reservoir during most of Oct. (PJS, ES). A flock of 160 grey-lags near Rothbury on 26 Dec. (BL, BG) was part of a large flock reported to be wintering in the area (BE), and the Holburn Moss birds were again present at the end of the year (PJS).

76. White-fronted Goose *Anser albifrons*

An adult and 2 young birds at Holywell Ponds on 26 Feb. (ABel.); 3 adults and 1 young bird on Grindon Lough on 1 Nov. had pinkish bills (ELA).

78a. Bean Goose *Anser arvensis arvensis*

During the westerly goose movement through the Tyne Gap, a flock of 80 bean geese on Grindon Lough on 15 Feb. was thought to be the flock which normally winters in Kirkcudbright, where no bean geese had been seen by mid-Feb. The Grindon birds had gone next day, prior to the arrival of "over 20" in Kirkcudbright (ELA). 7 at Grindon on 26 Feb. (CMA, CG, DNB) were perhaps more passage birds. 2 at Holburn Moss on 22 Apr. (BL).

79. Snow Goose *Anser caerulescens*

1† flying in from the north-east at Hartlepool on 11 Sept. (PR) was probably the bird from Lockwood Beck Reservoir, Yorkshire, but it may be significant that a Sabine's gull was recorded at Spurn, Yorkshire, the same day, and that a pectoral sandpiper arrived at Coxhoe, Durham, about this time. 1† at North Gare, Teesmouth, on 27 Dec. (P.Har., RJL) was certainly the Yorkshire bird.

80. Brent Goose *Branta bernicla*

Recorded until Apr., and again from mid-Oct., maximum ca.2,500 on Fenham Flats on 5 Feb. (BL, BG, ABel.). A flock of 17 in the Tees estuary on 29 Jan. quickly diminished (ECG, PJS), but a lone bird occurred there again in Dec.

81. Barnacle Goose *Branta leucopsis*

On 6 Oct. 24 flew south off Holy Island, where 2 alighted on 11 Oct. (LPA); at Hartlepool 1 on 6 Oct., 1 on 17 Oct., 28 on 18 Oct. (in 1 flock) and 2 on 22 Oct.: all, except the first, flew north (KS, KB, PJS, BJC).

82. Canada Goose *Branta canadensis*

2 at Gosforth Park and Holywell Ponds on 18 July (JDP, SRS, RMW), 1 on South Shields beach on 17 Oct. (SH) and 1 on Bolam Lake on 3 Dec. (OPJ).

84. Mute Swan *Cygnus olor*

Bred on at least 10 waters and at least 12 young reared; at the Target Pool, Haltwhistle, 6 nearly full-grown young were killed by their parents in mid-Aug. (MP). Over 300 on Fenham Flats by Nov. (FS, JRM, RCP) and on 6 Dec. 1 settled on the sea at Souter Point (ES).

85. Whooper Swan *Cygnus cygnus*

Absent from 23 May until 18 Oct., apart from a summering bird at Hartburn, Northd. On 21 Mar. 47 on Crookfoot Reservoir (BU) was a very large herd for Durham, but elsewhere the biggest numbers were in Nov. and Dec.: ca.140 on Fenham Flats, 54 at Grindon Lough, 45 at Hartburn, 36 at Killingworth Pond, 31 at Broomlee Lough, 26 at Gosforth Park and 17 at Holywell Ponds were some local maxima.

86. Bewick's Swan *Cygnus columbianus*

4 at Hartburn, Northd. on 28 Jan. (BL), 1 with whoopers near Beal on 2 Feb. (MGR) and a late bird at Grindon Lough on 14 Apr. (AJC). Grindon also produced the first autumn bird—1 on 3 Nov. (RMW). Single birds occurred at Whittledene, Seaton Burn and Smiddyshaw Reservoir in Dec. (ELA, ER, JAB) and a herd of 7 remained at Hurworth Burn-Crookfoot Reservoir from 25 Nov. until 7 Dec. (ECG, ALC, ES).

91. Common Buzzard *Buteo buteo*

On some 10 occasions, in Feb. and July-Oct., lone buzzards, which were mostly or all *Buteo buteo*, were seen in north Northumberland. No Durham reports.

93. Sparrow-Hawk *Accipiter nisus*

Very few reports and no breeding records received.

99. Marsh-Harrier *Circus aeruginosus*

An adult female at Holywell Ponds on 18 and 19 May (JDP, BL, TWA). C. Nichol found an injured first winter female below pylon wires at Haydon Bridge on 14 Oct. It died two weeks later and was sent to the Hancock Museum (per AJC).

100. Hen-Harrier *Circus cyaneus*

A "ring-tail" near Broomlee Lough on 12 Feb. (AJC) and a cock on 11 and 25 Nov. (DDM).

103. Osprey *Pandion haliaetus*

The arrival of 1 at Crookfoot Reservoir on 1 June caused a great commotion among the wildfowl; it was heard to call several times (ES). An unusual record is of 1 in Upper Coquetdale from about 11 Oct. until at least 3 Nov.; on 2 occasions it was seen to catch a fish and photographs were taken (BCER *et al.*).

105. Peregrine Falcon *Falco peregrinus*

Rather more winter records than usual. Coastal reports include birds at Holy Island, Fenham, Dunstanburgh, Monk's House, Seaton Sluice and Teesmouth, while inland reports come from both the Northumberland and the Durham moors.

107. Merlin *Falco columbarius*

From 3 nests reported in Northumberland 12 young were reared (BL, JMB). Birds were widespread at other seasons.

110. Kestrel *Falco tinnunculus*

3 young reared inside an Elswick factory (LPH). Some evidence of apparent coastal immigration in autumn. 1 at North Walbottle on 21 Nov. was watched trying to oust starlings from under the eaves of a cottage (BGR).

113. Black Grouse *Lyrurus tetrix*

Apparently more plentiful than usual on the west Durham moors (DNB, CG), but out of ca.1,700 grouse shot on a north Northumbrian estate during Sept. only 3 were of this species (RMP).

115. Red-legged Partridge *Alectoris rufa*

R. M. Palmer examined 1 in a Newcastle butcher's shop on 23 Oct., shot near Haltwhistle. Another in Newcastle market in early Dec. had been "shot locally" (BG).

117. Quail *Coturnix coturnix*

1 called from a barley field in the Tyne Gap on 11 and 30 June (AJC) and another from an oat field just south of Berwick (ELA).

120. Water-Rail *Rallus aquaticus*

Records from 7 Northumberland and 2 Durham localities, over 10 months of the year.

125. Corncrake *Crex crex*

1 at Fenwick on 25-26 May craked all night until 0330 hours (ABla. *et al.*). 2 at another Northumberland locality and 1 in Durham were noted later in the summer (GAC, DNB, CG). 1 disturbed by harvesting at New Haggerston on 13-14 Sept. (ABla. *et al.*).

126. Moorhen *Gallinula chloropus*

1 at Hartlepool on 22 Oct. came from the north and settled on the sea (JAB).

127. Coot *Fulica atra*

The biggest count was ca.300 on Holywell Ponds on 15 Jan. (CED). The population on Bolam Lake continues to increase, with 132 on 17 Dec. (AM, CMA).

131. Oystercatcher *Haematopus ostralegus*

Bred in the valleys of the Tyne ("a great many pairs": MP) and Coquet (BGR, JMB). The biggest winter flock was ca.500 between Ross Point and Holy Island on 4 Nov. (PJS).

In March and April an oystercatcher which was all white, except for black primaries, secondary wing-coverts and tip of tail, was in the Seaton Sluice-St. Mary's Island area (CED, BG). When an oystercatcher with a broken wing was approached on Seaton Snook, Teesmouth, on 23 Sept., a second bird flew down and displayed great concern, alternately urging on its companion and running towards the observer, who was only a few yards away (VFB).

133. Lapwing *Vanellus vanellus*

3 nests (4, 4, 2 eggs) found in Teesdale on 3 Apr. (VFB). Several observers along the coast reported birds coming in off the sea or flying south in Oct. and there was noticeable northerly movement at St. Mary's Island on 6 Nov. (SRS) and at Bamburgh on 10 Dec. (BG).

134. Ringed Plover *Charadrius hiaticula*

At least 8 pairs nested in Coquetdale (JMB, TGW, BGR), 1 near Swallow Ponds (FC), and 2 on Fenham Flats (GDS): 2 pairs were known to be successful. On 18-20 May, when resident birds were well established in their territories, "several hundred" passage birds were in Budle Bay (CED).

136. Kentish Plover *Charadrius alexandrinus*

A female† was on Saltholme Pool, Teesmouth, on 30 Apr. and 1 May (PR, JAB, IFS, DSS *et al.*). There are only 4 previous records from Durham, all from Teesmouth—in 1902, 1904, 1924 and 1954.

139. Grey Plover *Charadrius squatarola*

Maximum: 90 in the Tees estuary on 12 Mar. (PJS).

140. Golden Plover *Charadrius apricarius*

Flocks exceeding 1,000 birds seen in 7 places throughout the 2 counties. Flocks consisting mainly, if not entirely, of the northern race seen near the Roman Wall at Cockmount Hill on 15 Mar. (MP), Craster on 4 Apr. (JMC), Chathill on 8 Apr. (OPJ) and Coxhoe on 11 Apr. (PJS).

142. Dotterel *Charadrius morinellus*

1 in a potato field between Cleadon and Whitburn on 14 June (SD, FGG, SH *et al.*).

143. Turnstone *Arenaria interpres*

The biggest concentrations reported were ca.150 at Holy Island in Jan. and 70-80 at St. Mary's Island in Apr. and Oct. Single birds occurred inland at Cresswell Ponds on 9 Sept. (JG) and Hurworth Burn on 27 July—the latter in full breeding dress (ES).

145. Common Snipe *Capella gallinago*

Evidence of coastal immigration in Oct. and Dec. For example, on 21 Oct. birds flew in off the sea at St. Mary's Island during the big redwing immigration (MM) and the same day the species was "suddenly very numerous" at Holywell Ponds; immigration was noted at Crimdon Dene the previous day (ES). On 27 Dec., when over 200 had already been reported at Seaton Burn and Killingworth (BG, ER), "ca.180 came in off the sea at St. Mary's Island from the north-east or north during an extensive immigration of *Turdidae*" (JDP). (See also under jack snipe.)

147. Jack Snipe *Lymnocyptes minimus*

Present until 13 Apr.—2 on Cowpen Marsh, Teesmouth (JAB). Thereafter, up to 3 occurred at Tanfield Ponds, Stanley, on the unusual dates of 9, 20 and 30 Aug., after an easterly gale which also increased the common snipe population from very few to 90 or more (RMP). 6 flew in with common snipe at St. Mary's Island on 27 Dec. (JDP).

150. Curlew *Numenius arquata*

Local people reported a nearly all-white bird at Hexham in spring and autumn. It had some brown flecks on the wing, a pale orange-yellow beak, and dark eyes (per AJC).

151. Whimbrel *Numenius phaeopus*

Comparatively few spring records away from Teesmouth, where the first was noted on 12 Apr. (also at Darlington) and by 30 Apr. 14 were in Greatham Creek. The return movement, as usual, was more widespread, but the biggest numbers were again at Teesmouth where there were ca.40 by the end of July. A fresh influx on 11 Aug. brought a flock of 50 in over North Gare; 40 were still present on 10 Sept. (in the Reclamation Pond). Several occurred inland in both counties; the last was 1 at St. Mary's Island on 13 Oct. (AHB).

154. Black-tailed Godwit *Limosa limosa*

The only spring records were in south Durham: 1-2 on Cowpen Marsh from 12 Mar. for 6 weeks (PJS), 1 at Darlington on 12 Apr. (SB) and 1 at Crookfoot Reservoir on 7 May (ES). The period 23 July to 1 Oct. produced many records from both counties, maximum 41 (including a flock of 35) at Teesmouth on 7 Aug. (AV, WA, PH, RAM).

155. Bar-tailed Godwit *Limosa lapponica*

Occurred at 4 inland localities, including Hurworth Burn, where, of 2 on 21 Sept., 1 remained until 1 Oct. (ES). On 1 Jan. ca.500 at Holy Island (MB, BG, CW).

156. Green Sandpiper *Tringa ochropus*

Occurred all months Mar. to Oct. 1 at Brunton on 12 Mar. (BGR, ER) was followed by single birds in Apr. and May at Howick, Swallow Ponds and Hurworth Burn. The last-named place showed the first "autumn" bird as early as 25 June (ES) and also produced the biggest flock of the year—8 in Aug.

157. Wood-Sandpiper *Tringa glareola*

Only spring record: 1 at Hurworth Burn 16-19 May (ES). Another present here on 25 June (ES) and many occurrences in both counties during July and Aug. with numbers above average in Northumberland. Last record: 1 at Cresswell Ponds on 23 Sept. (BG).

159. Common Sandpiper *Tringa hypoleucos*

4 Apr. at Langdon Beck (DNB, CG) and 19 Apr. at Bywell (TW) were the earliest dates.

161. Redshank *Tringa totanus*

An unusual incident seen on 16 Apr. at Cowpen Marsh, Teesmouth, where a bird twice stood on a telegraph wire, well away from the pole—at least once on one leg only (IFS, TAB).

162. Spotted Redshank *Tringa erythropus*

A wintering Teesmouth bird remained until 25 Apr., another near Houghton-le-Spring on 15 Jan. (RID), and 1 on Ross Links on 4 Mar. (PJS). J. Capstick saw 3 at Greatham Creek, Teesmouth, on 7 Mar.—at least 2 in "black" plumage.

From 11 July to 2 Oct. autumn passage birds occurred in fair numbers, with up to 9 at Hurworth Burn in Aug. (BU, PHar.). 1 at Teesmouth on 9 Nov. (ALC, AV) may have been late on passage, but 2 at Coxhoe on 29 Nov. and 2 Dec. (VFB) were presumably wintering.

165. Greenshank *Tringa nebularia*

Spring records: 2 on Cowpen Marsh in Apr., 1 at Bamburgh on 1 May (FGG) and 1 at Smiddyshaw Reservoir on 23 May (ES). From 16 July greenshank occurred widely, the last being 2 at Hurworth Burn on 29 Oct. (ES, JAB).

169. Knot *Calidris canutus*

Estimates of the vast numbers in the Tees estuary in Feb. varied from 6,000 to 10,000. At Fenham Flats, the other main stronghold of this species, 2,000 and 3,000 were the estimates for Jan. and Dec. respectively. A few inland records include 1 at Grindon Lough on 2 Apr. (AJC).

170. Purple Sandpiper *Calidris maritima*

No records between 20 May and 30 July. At Seaton Sluice on 9 Dec. there were 106 (SRS), over twice the next largest flock reported.

171. Little Stint *Calidris minuta*

1 at Teesmouth on 29 Apr. was joined by 2 others in May, when 1 also arrived on Holy Island (CED) and 7 at Cresswell Ponds (SRS). Two June records, but up to 14 occurred at Cresswell Ponds and at Teesmouth in Sept., with the last on 14 Oct. (DME).

176. Pectoral Sandpiper *Calidris melanotos*

1† on a sewage bed near Coxhoe from 10 or 12 Sept. until 14 Sept., and again from 28-30 Sept., was found by ES and seen later by PJS, DGB, FGG, JAB *et al.* During the interval between these 2 periods of observation the bird probably frequented a nearby marshy field where it was rediscovered on 28 Sept. This is the first Durham record for this century.

178. Dunlin *Calidris alpina*

On 7 Oct. ca.4,000 on the Reclamation Pond, Teesmouth (PJS).

179. Curlew Sandpiper *Calidris testacea*

At Teesmouth, up to 3 (in summer dress) from 21 May to 4 June (PJS, RAM), and up to 10 or 15 frequent there from 23 July to 11 Oct. Also regular at Hurworth Burn, but Northumberland records refer to no more than 4 or 5 birds.

183. Broad-billed Sandpiper *Limicola falcinellus*

1† on Seal Sands, Dorman's Pool and Reclamation Pond, Teesmouth, from 13 to 19 Aug. (JAB, PJS, FGG, VFB *et al.*) constitutes the first record for Durham.

184. Ruff *Philomachus pugnax*

Recorded all months except June. At the start of the year 2 wintered at Teesmouth and 2 at Coxhoe and there was again 1 at Teesmouth in Dec. Other winter records: 1 at Newton Bog on 19 Feb. (PG, BL) and 1 at Killingworth on 1 Dec. (FC). On spring passage up to 8 or 10 seen regularly at Teesmouth and others occurred at Newton Bog (TW) and Grindon Lough (AJC). Widespread in autumn, largest flock being 15 at Cresswell Ponds (BL, BE).

187. Grey Phalarope *Phalaropus fulicarius*

1 watched for 2 hours at Ashington Pond on 12 Nov. Besides spinning in the usual manner, this bird repeatedly dived—not only when approached by the observer and when attacked by a gull, but also (apparently) for food (OPJ).

193. Arctic Skua *Stercorarius parasiticus*

More than usual seen in the spring, from 19 Mar. to June, and innumerable autumn records. Biggest number at Hartlepool, where a total of 366 flew south during the gales of 17 to 19 Oct.; maximum 258 on 18 Oct. (PJS, BJC). An unusual feature was the heavy northerly movement in Nov.: on 3, 4, 11, 12 and 13 Nov. a total of ca.300 passed, seen at various coastal points from Hartlepool to Cullernose Point. A dozen birds even seen in Dec.

194. Great Skua *Catharacta skua*

Only 1 late spring record, but between 30 June and 12 Nov. several dozen were seen. 19 at Hartlepool on 18 Oct. (PJS, BJC) was the biggest local count.

195. Pomarine Skua *Stercorarius pomarinus*

In Northumberland 4 or 5 reported in Aug. and Sept. and at Hartlepool 61 in Oct. and 8 in Nov. 8 heavy skuas off Crimdon Dene on 5 Dec. were probably also of this species (ES). All except 1 of the Hartlepool total passed during the gales of 17-19 Oct., maximum 42 on 18 Oct. (PJS, BJC).

196. Long-tailed Skua *Stercorarius longicaudus*

Adults seen as follows: 1 off Warkworth on 25 Aug. (RMW), 2 off Hartlepool on 17 Oct. (BJC) and 1 off Seaton Sluice on 11 Nov. (RMW, MM, TW, BG).

198. Greater Black-backed Gull *Larus marinus*

ca.3,000 on Seaton Snook, Teesmouth, on 2 Sept. (PJS).

199. Lesser Black-backed Gull *Larus fuscus*

Present from Mar. to Nov., spring passage being first noted on 12 Mar. 17 on Seaton Snook on 3 June (DGB) is (surprisingly) the largest concentration on record for Teesmouth, but up to 30 or 40 seen at Gosforth Park on several occasions (BG, JMB). One at the Tyne Bridge, Newcastle, on 24 and 30 Nov. (JMB).

200. Herring-Gull *Larus argentatus*

Single pairs nested on each of the 2 floating buoys in Hartlepool Docks and 1 pair reared 2 young. The dock foreman says that they also nested there in 1959 and 1960 (PJS). 1 at Holy Island on 26 Nov. had pale yellow legs (BG).

202. Glaucous Gull *Larus hyperboreus*

Identified every month except Sept. In the early months 2 in the Holywell Ponds area, and 1 or 2 at North Shields and at Teesmouth, were seen intermittently. In addition, 2 or 3 birds noted passing along the coast. In June, July and Aug. 2 were distinguished at Teesmouth, while others passed in late autumn. An adult flew over Crookfoot Reservoir on 5 Oct. (ES).

203. Iceland Gull *Larus glaucooides*

Single birds recorded as follows: Dunstanburgh 18 Feb. (WSC); Holywell Ponds Apr. and May (JDP, BL); Tees estuary 2 May (DGB) and 9 June (PJS); Craster 20 May (WSC); Hartlepool 18 Oct. (PJS, BJC); Hartlepool 25 Nov. (PJS); Crimdon Dene 15 Dec. (ES).

205. Mediterranean Gull *Larus melanocephalus*

The Hartlepool bird† was not seen in 1961 until 11 Aug. (RJL, PJS), after which it was recorded intermittently into 1962.

207. Little Gull *Larus minutus*

A remarkable gathering of little gulls took place at Hurworth Burn in late summer. The forerunners appeared on 15 and 16 June, with a single bird on 16 July and 11 on 30 July. On at least 4 days in Aug. over 20 were counted, but the total number involved that month was higher, for the biggest count (27 on 26 Aug.) included only 3 juveniles, while up to 5 juveniles were seen together on other dates. In the same month up to 5 adults in breeding dress were present (on 3 Aug.), but apart from the juveniles and ca. 5 winter adults with dark underwings, the rest were in sub-adult plumage. There was evidently a roost nearby as birds were arriving and leaving all day, few remaining by evening. Earlier in the month they were arriving from, and departing to, the north, but later in the month the direction of arrival and departure seemed to be predominantly south-west. In the next month largest counts were 18 on 2 Sept., 28 on 14 Sept., 26 on 15 Sept. and 16 on 16 Sept. Maximum number of juveniles counted together was 21 (on 15 Sept.), over 4 times as many as in Aug. The fact that at least 75% of these juveniles were fresh arrivals suggests that some adults and sub-adults (harder to distinguish individually) were also new. It is probable, in fact, that there was a considerable amount of migratory interchange since the group started to assemble in July, and that the minimum total *proved*—45—is well below the actual number involved. None was seen after 24 Sept. (ES, PJS *et al.*). Away from Hurworth Burn more than 20 individuals were noted, over eight months of the year.

208. Black-headed Gull *Larus ridibundus*

On 22 Sept. 15 to 20 first winter birds were watched hovering low over the trees on the island in Gosforth Park Lake for about 10 mins. They were perching momentarily, with wings open, on the outer branches, and appeared to be feeding on insects. Although many adults were present on the lake, none was seen to join in (BG).

211. Kittiwake *Rissa tridactyla*

More than 500 at Seaton Snook, Teesmouth, on 13 June (DGB). Northerly movements of over 1,000 birds noted in May, June, July, Aug. and Nov. and similar-scale southerly movements in Apr. and Dec. Single birds appeared in May at Holywell Ponds (AJ) and Hurworth Burn (ES).

212. Black Tern *Chlidonias niger*

Single birds on spring passage: 20, 22 and 29 Apr.; 1 and 24 May; 5 and 13 June. A dozen in autumn, between 9 Aug. and 25 Sept.

217 and 218. Common Tern *Sterna hirundo* and Arctic Tern *Sterna macrura*

First on 8 Apr. (RTM) and last on 4 Nov. (CB, DME)—at Hartlepool.

219. Roseate Tern *Sterna dougallii*

Away from the Farnes occurred at Cresswell (BG), Seaton Sluice (SRS), Tees estuary (PJS) and Hartlepool (PJS, BJC)—where 3 on 30 Sept. is the latest record for the Tees bay.

222. Little Tern *Sterna albifrons*

First on 30 Apr. at Hartlepool (PHar., KS). Not known to breed successfully in either county, though attempts made at Holy Island (1 pair) and Teesmouth.

223. Sandwich Tern *Sterna sandvicensis*

Early records: 3 at St. Mary's Island on 23 Mar. (JDP) and 1 at Hartlepool on 26 Mar. (RTM, RJL). Away from the Farnes biggest count was 350 on Seaton Snook, Teesmouth, on 7 Aug. (PJS). Last recorded: 2 off Seaton Sluice on 10 Oct. (ER, FGG).

226. Little Auk *Plautus alle*

Appeared on 6 days in Nov., maximum a dozen or so on 5 and 12 Nov. 1 struck an overhead wire at Elton, near Stockton-on-Tees, and was killed.

229. Black Guillemot *Cephus grylle*

1 at Stag Rocks, Bamburgh, on 2 Jan. (BL, MB, JDP), and 1 off the Farnes on 13 Oct. (GH).

235. Turtle Dove *Streptopelia turtur*

Between 30 Apr. (2 at Hurworth Burn: ES) and 5 Sept. (1 at Holy Island: SRS), birds occurred at Heddon, near Hartley, Kyloe, Hamsterley, Hurworth Burn and Wynyard Park.

— Collared Dove *Streptopelia decaocto*

1 on the Farnes on 30 Apr. (per GH) and seen at 2 other Northumberland localities. In Durham, 2 pairs displayed at West Hartlepool in Mar. (RTM, RJL, PR) and probably nested; birds seen at Hurworth Burn and near Thorpe Thewles.

237. Cuckoo *Cuculus canorus*

Generally distributed from 23 Apr. when birds were noted at Featherstone Park (CJG) and Howick (RMW), but appeared scarcer than usual.

248. Long-eared Owl *Asio otus*

3 nests reported, of which 2 were successful. In Dec. up to 11 were present at two localities near Newcastle (CW, ER, BG).

249. Short-eared Owl *Asio flammeus*

Occurrences in all months, mostly in late autumn and too often to enumerate. Of 6 or 7 at Swallow Ponds on 11 Nov., 2 were shot (FC, BE).

255. Swift *Apus apus*

Arrived early: 1 at Holywell Ponds on 21 Apr. and 2 on 25 Apr. (AJ); seen at 4 places on 30 Apr. including 15 at Hurworth Burn (ES). On 24 July, over North Gare and Seaton Snook, Teesmouth, ca.4,200 flew in off the sea between 1855 and 1915 hours and went inland (Phar., RAM). From 20 Oct. a swift was several times seen flying around houses in Oxbridge Lane, Stockton-on-Tees. It was last observed on 8 Nov., before the first heavy frost (DGB).

264. Lesser Spotted Woodpecker *Dendrocopos minor*

Reported from 2 localities: 1 in Durham and 1 in south Northumberland.

265. Wryneck *Jynx torquilla*

The Farnes record of 26-27 Apr. (per GH) is the only one for the year.

273. Shore-Lark *Eremophila alpestris*

7 near North Gare, Teesmouth, in Feb. (ECG). 1 on the Inner Farne on 20 May (per GH). A party of 5 wintered at Teesmouth from 24 Dec. (AV, GT, PJS, ALC).

274. Swallow *Hirundo rustica*

First seen in Teesdale on 4 Apr. (DNB, CG) and others elsewhere on 5 and 6 Apr. At Spennymoor a nest was built on top of a pile of plates in a shed and was thus easily lifted down for examination (DNB, CG). A white swallow reported in Weardale (JR). On 6 Nov. 1 flew over Newcastle (IH) and the same day 2 young birds lingered round Craster Tower, enjoying the warm sunshine (JMC). As late as 19 Nov. an adult seen near Hart (ECG, KS).

276. House-Martin *Delichon urbica*

1 at Craster and 2 at Wylam on 29 Apr. (WSC, SB) were the first, and 1 at Blaydon on 26 Nov. (BE) the last. A white bird seen frequently at Longhorsley and Wingates (PO).

277. Sand-Martin *Riparia riparia*

8 seen in Mar., 1 at Holywell Ponds on 19 Mar. (MM, BG) being the earliest by 10 days.

279. Raven *Corvus corax*

4 or 5 pairs bred in Northumberland, but only 1 known to be successful. At a Durham site the young were killed in the nest.

280. Carrion-Crow *Corvus corone corone*

Young were reared from a nest on a pylon by the Tees estuary.

281. Hooded Crow *Corvus corone cornix*

Exceptionally numerous in the early months, 60 at Holy Island in Jan. (JDP, OPJ), 34 at Graythorp, Teesmouth, in Feb. (AV, RAM), and 52 at Seaton Burn in Apr. (ER, JB), being peak numbers of wintering flocks. In contrast, only 6 birds reported between 19 Nov. and the end of the year.

5 June was a remarkable date for 2 to be seen feeding, with rooks, on Seahouses golf-course (ER).

282. Rook *Corvus frugilegus*

"During 1961 a new rookery consisting of 2 or 3 occupied nests was established in a built-up area in the Haymarket, near the centre of Newcastle" (RMP).

A lost fledgling kept by B. Galloway was suddenly adopted and fed regularly by 2 adult rooks some 6 weeks later. At first it spent the day with them, returning in the evening to roost at the house, but later spent all of its time in their company.

288-294. Titmice (*spp.*)

Though some coastal parties were seen in late October, there was no noticeable immigration. Some unusually large flocks of long-tailed tits seen in Northumberland in Dec.—ca.35 at Wallington and ca.45 at Bolam (JDP)—and a wanderer or immigrant on Holy Island Snook on 26 Dec. (BG).

A predominance of willow-tits *Parus atricapillus* over marsh-tits *Parus palustris* in Jan. in the Bolam-Angerton-Cambo area, and at Hallington and Stagshaw, may be due to local north to south movement of both species in winter (JDP), but more data are required.

296. Nuthatch *Sitta europaea*

Reported from Durham City, Darlington, near Chester-le-Street, Spennymoor, Wynyard and Shotley Bridge.

298. Tree-Creeper *Certhia familiaris*

1 at Hartlepool on 9 Sept. and another on 24 Sept. (PJS, RAM) looked clean and pale and were probably of the northern race *C.f. familiaris*. 2 on Holy Island on 12 Sept. (RK).

302, 304 and 308. Fieldfare *Turdus pilaris*, **Redwing** *Turdus musicus* and **Blackbird** *Turdus merula*

In Jan. an almost complete albino fieldfare was twice seen on its own near Belsay (ELA). Last redwings reported on 25 Apr. at Billingham (DL) and last fieldfares on 1 May near Hurworth Burn (DGB).

First autumn arrivals were on Holy Island—a fieldfare on 4 and 5 Sept. (SRS, RK) and a redwing on 20 Sept. (SB), early forerunners of an exceptionally heavy autumn immigration. On 22 Oct. ca.1,400 blackbirds and ca.1,500 redwings flew in at Hartlepool, while hundreds of others thronged the gardens there, and this movement was noted as far north as Holy Island. A similar large influx occurred on 5 and 6 Nov. On 27 Dec., in conditions of widespread ice and deep snow, ca.1,000 fieldfares and ca.1,800 redwings were on the fields near St. Mary's Island and ca.800 others arrived during the morning from the north-north-east and north-east, while others left to the south-east (JDP). The next day ca.5,000 passed north-west at Seaham in a two-hour morning watch. Redwings were dominant, but fair numbers of fieldfares, starlings, song-thrushes, wood-pigeons and linnets were also involved (ES). Many of the birds appeared to arrive off the sea—as did ca.100 redwings and ca.350 fieldfares in a short morning watch at Hartlepool (DME, WA). Throughout the train journey from Stockton to Newcastle on 28 Dec. flocks of redwings, fieldfares, starlings and skylarks were seen "coming in off the sea" (LM). About 2,000 redwings on Holy Island on 31 Dec. (BE).

311. Wheatear *Oenanthe oenanthe*

First was at Whalton on 17 Mar. (HT) and last near St. Mary's Island on 28 Oct. (RCI.).

317. Stonechat *Saxicola torquata*

2 or 3 pairs bred in the Northumberland hills and there was also suspected breeding on the coast. Widespread on or near the coast in winter, but no Durham reports north of Crimdon Dene.

320. Redstart *Phoenicurus phoenicurus*

1 at Darlington on 11 Apr. and others elsewhere on 13, 15 and 16 Apr. In the autumn migrants passed along the coast until Oct., with a late bird at Hartlepool on 20 Oct.

321. Black Redstart *Phoenicurus ochruros*

Only 2 reported for the start of the year: 1 at Hartlepool throughout Jan. and 1 near Port Clarence, Teesmouth, on 23 Apr. (PJS, ECG). In Oct., 1 on Holy Island, 2 near St. Mary's Island and 2 or 3 in the Teesmouth area.

322. Nightingale *Luscinia megarhynchos*

1 on Holy Island on 5 Sept. (SRS, RK, RMW). First record for the island.

324. Bluethroat *Cyanosylvia svecica*

A juvenile near St. Mary's Island on 4 Sept. (JDP).

333. Reed-Warbler *Acrocephalus scirpaceus*

A pair again bred in Northumberland.

337. Sedge-Warbler *Acrocephalus schoenobaenus*

The first was at Holywell Ponds on 15 Apr., with others at Gosforth Park, Wylam and Newton Bog on 22 Apr. (CW, BG, BL, SB).

343. Blackcap *Sylvia atricapilla*

Individuals again wintered: 1 at Rothbury, still present in Mar. (per BL); 1 at Bedlington visited a bird table in Dec. (per JDP), as did another at Longhorsley (PO). In spring arrived early: seen near Haydon Bridge on 11 Apr. (AJC) and at Wylam on 15 Apr. (SB). Autumn passage birds seen into late Oct., with the last at Fenwick on 4 Nov.—a first winter bird (ABla.).

346. Garden-Warbler *Sylvia borin*

10 Apr. was an early date for several singing birds near Morpeth (RMP). Not recorded after 7 Oct., when a late migrant was at Hartlepool.

347. Whitethroat *Sylvia communis*

An early migrant on 15 Apr. at Hartlepool, where the last was also reported—on 8 Oct.

348. Lesser Whitethroat *Sylvia curruca*

About 11 birds reported between 23 Apr. (2 on Holy Island: FC, BL) and 8 Oct. (1 near St. Mary's Island: CED).

354. Willow-Warbler *Phylloscopus trochilus*

1 sang at Capheaton on 1 Apr. (JDP, MB, BG) and at 5 places on 8 Apr. Local nesting birds arrived at a Norton-on-Tees garden on 24 Apr., the same date as last year (ALC).

356. Chiffchaff *Phylloscopus collybita*

1 sang at Dipton Woods on 2 Apr. (JDP) and another at Fenwick on 3 Apr. (ABla.). Late autumn or winter *Phylloscopus* warblers are usually this species, as were thought to be 2 at Fenwick on 5 days between 4 and 26 Nov. (A.Bla.), 1 at Sea-houses on 16 Nov. (JRM, RCP), 1 in Holywell Dene on 18 Nov. (SRS) and 1 near Gosforth Park on 9 Dec. (ER, SRB).

357. Wood-Warbler *Phylloscopus sibilatrix*

1 sang at Kirkwhelpington on 14 May (JDP)—the earliest singing wood-warbler reported. In Durham woodland 10 nests were found, and 4 others suspected, in an area ca. 2½ miles long and ¼ mile wide. 1 pair was watched building—the cock singing while the hen collected leaves; though a variety of leaves was available, only oak was chosen and this was, in fact, used in all 10 nests. Several pairs had 2 broods and 30 young were ringed (DNB, CG). Single migrants at Whitley Bay Cemetery on 29 Aug. and at Holy Island on 4 Sept. (SRS).

364. Goldcrest *Regulus regulus*

Influx noted on many Oct. days, especially during the period of exceptionally heavy immigration of *Turdidae* 20-22 Oct., when "hundreds" were reported all along the coast from Holy Island to Teesmouth.

366. Spotted Flycatcher *Muscicapa striata*

Only Apr. record was 1 at Holywell Ponds on 29 Apr. (BG) and no others until 7 May. As usual, scarce on autumn passage, but late individuals were at South Shields on 1 Oct. (FGG) and on Holy Island on 3 Oct and 7 to 10 Oct.

368. Pied Flycatcher *Muscicapa hypoleuca*

An early cock near Hexham on 22 Apr. (MB, JDP, CW). Autumn passage reached its peak in Sept., when up to 29 occurred on Holy Island on 4 Sept. (SRS). Late individuals at Whitley Bay and Hartlepool on 7 Oct. and at Bamburgh on 22 Oct. (ABla.).

370. Red-breasted Flycatcher *Muscicapa parva*

Single first winter birds occurred as follows: at Craster on 15 Aug. (per PRE), at Hartlepool on 20 Sept. (ECG, PR, GWC), at Monks' House on 3 Oct. (per PRE), at Hartlepool on 4 Oct. (RTM) and at Whitley Bay Cemetery on 22 Oct. (JDP, BL, BG).

373. Meadow-Pipit *Anthus pratensis*

Between 31 Mar. and 9 Apr. north-west passage was noticeable at Hartlepool, maximum 384 in 1 hour on 6 Apr. During this period inland passage noted near Hurworth Burn and Stanley.

376. Tree-Pipit *Anthus trivialis*

Present between 8 Apr. and 30 Sept.

379b. Water-Pipit *Anthus spinoletta spinoletta*

A very bright specimen of this race was readily identified at Crimdon Dene on 13 Apr. (ES).

380. Pied Wagtail *Motacilla alba yarrelli*

A large gathering at Stanley during Aug. reached a peak on 30 Aug., when at least 170 roosted on bushes (RMP).

382b. Blue-headed Wagtail *Motacilla flava flava*

A pair of wagtails showing the characters of this race reared 2 young near Wallsend (JDP, BG, BL *et al.*). A pair spent the summer of 1958 at the same place, but were not proved to breed.

383. Waxwing *Bombus garrulus*

Only 8 reported in Jan. and no others until 5 Nov. (1 at Holy Island: ER, BGR). About 30 reported thereafter until the end of the year, nearly all in Northumberland.

384. Great Grey Shrike *Lanius excubitor*

11 individuals reported at the start of the year, the last on 14 Apr., and 4 at the end of the year. All except 2 were in Northumberland.

389. Starling *Sturnus vulgaris*

On 2 Jan. the Sherburn roost comprised about 500,000 birds (RMP). During the autumn immigration 1 alighted exhausted on the sea at Seaton Sluice and was devoured by a greater black-backed gull (SRS).

391. Hawfinch *Coccothraustes coccothraustes*

3 reports from Northumberland and 1 from Durham.

392. Greenfinch *Chloris chloris*

"Scarcer than ever I remember" in the Haltwhistle area where many were found dead on fields of "treated" seeds in Apr. and May (MP). On 31 Dec., during the very cold spell, many greenfinches excavated hollows and tunnels in hop manure at market-gardens near Wallsend. Some of their tunnels extended 5-6 ins. and were occupied by 3 or 4 birds (FC).

393. Goldfinch *Carduelis carduelis*

A flock of ca.100 at Greenhead on 20 Sept. (MP) was much the largest of many parties reported.

394. Siskin *Carduelis spinus*

A hen siskin with 3 young visited a Haltwhistle garden on 10 July (MP). Numerous and widespread after an unusually good autumn immigration. Flocks of ca.100 in the Morpeth area in Dec. (BG, BE).

396. Twite *Carduelis flavirostris*

12, with other finches, at Amble on 15 Jan. (BL).

398. Arctic Redpoll *Carduelis hornemanni*

On 27 Nov. Mr. and Mrs. D. W. Ash saw an exhausted redpoll in dunes at Beadnell which at first "appeared to be all white apart from the tops of its wings"; a closer examination revealed the red forehead and a faint pinkish tinge to the breast. It was probably *Carduelis hornemanni*, but confirmation could not be obtained. However, two redpolls†, similar to the above, near St. Mary's Island on 31 Dec.

1961 and 1 Jan. 1962 showed unmistakably the characters associated with this "species" (JDP, CED). On the same 2 days another redpoll on Holy Island was also judged to be *Carduelis hornemanni* (SRS, RMW). In addition to these records, a bird near St. Mary's Island on 24 and 28 Dec. was unusually pale, even for a mealy redpoll, particularly on the rump, but lacked the frosty whiteness of the arctics seen there later. It was possibly the intermediate *pallascens* form inhabiting north Norway (JDP, CED). (For an account of redpoll taxonomy see *British Birds* 51, 221 and 54, 238).

404. Crossbill *Loxia curvirostra*

A pair in the Tyne valley on 6 June (BL) was the only report.

408. Brambling *Fringilla montifringilla*

Good numbers at both ends of the year. The second half of Mar., time of the return passage, produced several large concentrations including 100 at Holywell Ponds on 19 Mar. (BG, AJ, CW) and near Rothbury next day (EML, RMTG, WBB). No records between 18 Apr. (AJ) and 11 Sept. when a cock (still in summer plumage) appeared on Holy Island (RK). About 50 flew in at Hartlepool on 8 Oct., smaller numbers arriving there, and elsewhere, on other days.

416. Ortolan Bunting *Emberiza hortulana*

1 seen and heard on Holy Island on 2 Sept. (SRS, RMW).

422. Lapland Bunting *Calcarius lapponicus*

2 at the Seaton Carew tips on 2 Jan., 4 on 3 Jan. and 1 on 18 Feb., and up to 5 again in the last 3 months of the year (PJS, JAB *et al.*). The only birds reported elsewhere were 1 on the Inner Farne on 28 Apr. (per GH), odd ones on Holy Island in the autumn (SRS, RK, LPA), and a very tired one at South Shields pier on 7 Oct. (FGG).

423. Snow-Bunting *Plectrophenax nivalis*

In Jan. and Feb. a flock several times frequented the Town Moor, Newcastle, maximum 80 on 22 Jan. (DH). Numbers generally, however, were unusually poor in the winter of 1960-61. In marked contrast, the late autumn showed large concentrations, flocks of over 100 being seen near Holy Island, Blyth, Gosforth Park, South Shields, Whitburn and Crimdon Dene. At Teesmouth, 270 near Graythorpe on 19 Oct. had reached ca.1,000 by 25 Oct. (PR, GWC, CB, BU).

424. House-Sparrow *Passer domesticus*

1 at Forest Hall in early summer was all white except for 2 or 3 dark feathers in its tail (FC). Another at Hartley in Sept. was also almost pure white (BG), and 1 near Stanley in Dec. had pure white wings (RMP).

RECOVERIES OF RINGED BIRDS

Date and place ringed *Place recovered* *Date recovered*

(a) Ringed in Northumberland and Durham

BAR-TAILED GODWIT

26.9.57 *Beadnell, Northd. Ringkøbing Fjord, Denmark 6.8.61
(55°54' N. 8°14' E)

DUNLIN

14.9.56 (w)Newton, nr. Ottenby, Sweden 15.7.61
Embleton, Northd.
17.8.61 *Haverton Hill, nr. Billingham, Nr. Lézardrieux, Côtes du 2.10.61
Co. Durham Nord, France
1.9.61 *Boulmer, nr. Alnwick, Sanlucar de Barrameda, 28.9.61
Northd. Spain (36°46' N, 6°21' W)

KITTIWAKE

29.6.60 North Shields, Northd. Formby, Lancs. 24.7.61

BLUE TIT

18.9.57 (w)Seahouses, Northd. Coldstream, Berwickshire 24.1.61

SONG-THRUSH

22.10.59 (w)Seahouses Monifieth, Angus 30.6.61

REDWING

17.12.60 *Ponteland, Northd. Castandet, Landes, France 25.12.61

BLACKBIRD

22.10.57 *Seahouses Strandvik, Norway mid-Mar. 61
(60°09' N, 5°41' E)
7.12.58 Fenwick, Northd. St. Vaast la Houge, 25.12.61
Manche, France
26.12.58 Beal, Northd. Röd, nr. Os, Nordaland, 4.4.61
Norway
7.11.59 *Fenwick Husarö Island, off Stock- 28.6.61
holm, Sweden
6.3.60 *Billingham Anlaby, nr. Hull 17.2.62
29.10.60 *Fenwick Hauge, Rogaland, Norway 5.11.61
11.12.60 (w)Fenwick Nr. Kristinehamn, Värm- 5.7.61
land, Sweden
17.12.60 *West Hartlepool, Iggesund, Gävleborg, 26.8.61
Co. Durham Sweden

PIED WAGTAIL

30.4.58 *Bamburgh, Northd. Northwich, Cheshire 15.10.61

Date and place ringed *Place recovered* *Date recovered*

STARLING

27.8.57 (w)Belford, Northd. Chippenham, Wilts. 19.3.61
15.12.58 *Nr. Corbridge, Northd. Eskilstuna, Söderman- Spring 1961
land, Sweden
10.1.59 *Fenwick Nr. Shipley, Yorks. (3.5.61)

GREENFINCH

22.1.61 *Nr. West Hartlepool Scarborough, Yorks. 31.4.61

LINNET

6.9.60 *Bamburgh Middlewich, Cheshire 24.8.61
12.5.61 Holywell Ponds, Northd. Bordeaux, France 13.10.61

REDPOLL

29.8.60 (w)Craster, Northd. Izegem, Belgium 10.11.61

REED-BUNTING

20.5.56 Dinnington, Northd. Seaton Burn, Northd. 10.9.61
22.8.61 (w)Seaton Burn Nr. Penrith, Cumberland (18.12.61)

(b) Interesting local recoveries of foreign-ringed birds

KNOT

20.8.55 *Revtangen Bird Station, nr. R. Tees Estuary, nr. 5.3.61
Stavanger, Norway Haverton Hill, Co. Durham

BLACK-HEADED GULL

5.6.59 Nr. Raade, Ostfold, Norway West Hartlepool 8.5.61

REDWING

27.5.61 Finland Seahouses 31.12.61

- NOTES: 1. * Indicates bird ringed as adult or full-grown
2. (w) Indicates bird ringed as 1st winter
3. All other birds have been ringed as pullus
4. Where the date of recovery is unknown, the date of the reporting letter is given in brackets

LIST OF CONTRIBUTORS

(with apologies for omissions)

C. M. Adamson, L. P. Alder, T. W. Allison, W. Anderton, M. D. Anthony, E. L. Arnold, J. H. Arthur, D. W. Ash, M. H. Baker, J. A. Bailey, J. Bainbridge, K. Baldridge, A. H. Banks, A. Barnard, S. R. Barrett, J. M. Bayldon, C. B. Beaumont (R.S.P.C.A.), D. G. Bell, Miss D. N. Bell, M. Bell, A. Belshaw, J. Bennett, C. Bielby, A. Blackett, Mrs. Blaiklock, S. Booth, T. A. Bowbeer, S. B. Bowes, C. H. Brackenbury, Miss W. B. Brady, E. G. Brown, V. F. Brown, G. Bruce, W. Carr, R. Clementson, A. J. Clissold, B. J. Coates, G. W. Coates, F. Colley, J. G. Cook, R. Cook, Mrs. A. L. Cooper, J. C. Coulson, G. A. Cowen, Sir John M. Craster, W. S. Craster, S. Dale, J. Darling, E. M. Darlington, Miss J. Darlington, H. Dawe, J. P. Deacon, P. Dent, G. Dobeson, C. E. Douglas, R. I. Duncan, D. M. Edge, E. A. R. Ennion, B. Etheridge, P. Evans, B. Galloway, P. Gartland, E. C. Gatenby, C. J. Gent, Miss C. G. Greenwell, F. G. Grey, Miss R. M. T. Grey, J. Grierson, P. Harland, I. Harrison, S. Hayes, J. V. Henderson, Mrs. G. Hickling, L. P. Hird, P. Hogarth, P. Hogg, P. L. Hogg, D. Howey, J. P. Hurley, C. Hutchinson, Miss O. P. Jefferies, A. Jobling, W. Johnson, L. Johnston, F. Jukes, R. Key, D. Laing, Mrs. E. M. Lamb, E. Lennox, R. J. Lightfoot, B. Little, Miss E. M. Lobley, A. Macdonald, L. Magee, D. D. Mann, M. Marquiss, J. R. Mather, R. T. McAndrew, I. McKinlay, R. A. McKinlay, E. Meek, E. Miller, R. Montgomery, B. Mortimer, Mrs. J. R. Munro, M. Natrass, J. H. Neesham, R. S. Oddy, Miss P. Oliver, W. Ord, R. M. Palmer, D. T. Parkin, R. C. Parkinson, J. D. Parrack, J. C. Petyt, M. Philipson, G. Proctor, B. G. Redhead, P. Reid, C. B. E. Richardson, J. Richardson, M. G. Robinson, E. Robson, Sir Robin Rowell, D. A. Scott, E. Shearer, M. K. Sidgwick, D. W. Simpson, G. D. Sinclair, K. Smith, F. Stabler, P. J. Stead, I. F. Stewart, S. R. Stobart, J. D. Summers-Smith, H. Tegner, G. W. Temperley, Miss E. Thompson, G. Tuffnell, M. Tulloch, B. Unwin, A. Vittery, A. J. Vittery, T. G. Wallace, C. Watson, T. Winter, R. M. Wood.

ADDITIONS AND CORRECTIONS TO THE
1960 ORNITHOLOGICAL REPORT

The following information has come to light since the publication of the 1960 Report and is important enough to be mentioned here :

4. Red-throated Diver *Gavia stellata*

Seen regularly throughout Aug., Sept. and Oct.

16b. Balearic Shearwater *Procellaria puffinus mauretanicus*

1 flew south through the Farnes on 12 June (MB, DH).

19. Great Shearwater *Procellaria gravis*

1 flew north off St. Mary's Island on 3 Aug. (JDP).

20. Cory's Shearwater *Procellaria diomedea*

1† off S. Shields on 8 Aug. (JAB).

49. Gadwall *Anas strepera*

1 flew south at Hartlepool on 19 Mar. (RTM, KS).

56. Tufted Duck *Aythya fuligula*

87 flew south and 42 north at Hartlepool on 21 Oct.

57. Pochard *Aythya ferina*

ca.40 passed Hartlepool on 1 Oct.

58. Ferruginous Duck *Aythya nyroca*

The record of 1 on Gosforth Park Lake on 13 Feb. 1960, has been accepted by the British Birds Rarity Records Committee.

78b. Pink-footed Goose *Anser arvensis brachyrhynchus*

The first autumn records are for 8 and 26 Sept.

80. Brent Goose *Branta bernicla*

The maximum flock was ca.1,000 at Fenham Flats on 28 Feb. (BL).

91. Common Buzzard *Buteo buteo*

1 at Hartlepool on 17 Sept. during the big influx.

103. Osprey *Pandion haliaetus*

1 at Seaton Burn on 10 Apr. (BG, CW).

104. Hobby *Falco subbuteo*

1 at Hartlepool on 18 Sept. during the big influx (BJC) is the first Durham record for this century.

146. Great Snipe *Capella media*

1† at Holywell Ponds on 20 Feb. (JDP).

159. Common Sandpiper *Tringa hypoleucos*

1 at Hurworth Burn on 5 Nov. (RAM).

162. Spotted Redshank *Tringa erythropus*

2 Dec. records: 1 at Billingham Bottoms on 12 Dec. (PJS) and 1 in the Tees estuary on 27 Dec. (AV).

171. Little Stint *Calidris minuta*

The "200+" figure given for the total Teesmouth population in the Sept. influx includes ca.50 at Scaling Dam, Yorkshire, and a few at Hurworth Burn.

185. Avocet *Recurvirostra avosetta*

The Teesmouth bird of 21 May stayed for the rest of the month.

187. Grey Phalarope *Phalaropus fulicarius*

1 inside the Tees estuary on 15 Oct. (C. Hudson).

196. Long-tailed Skua *Stercorarius longicaudus*

Immatures at Hartlepool on 1 and 21 Oct.

205. Mediterranean Gull *Larus melanocephalus*

1† off Holy Island on 8 Sept. (MB).

252. Nightjar *Caprimulgus europaeus*

1 at St. Mary's Island on 17 Sept. (MB).

265. Wryneck *Jynx torquilla*

1 near Blyth and 1 at North Gare on 17 Sept., 2 at Holy Island on 18 Sept. and 1 at Craster on 19 Sept.

305. Dusky Thrush *Turdus eunomus*

The Hartlepool bird† was last seen on 24 Feb.

345. Barred Warbler *Sylvia nisoria*

1 at Holy Island on 27 and 31 Aug. (MB, JDP), 2 in the Whitley Bay-Blyth area on 18 Sept. (MB), 1 at Beal on 19 Sept. (BL) and 1 at Hartlepool on 21 Sept. (PJS)—this last being the first record for Durham.

413. Red-headed Bunting *Emberiza bruniceps*

A male† near New Hartley on 15-17 June (MGR, FGG).

ORNITHOLOGICAL REPORT FOR THE FARNE ISLANDS FOR 1961

Compiled by

GRACE HICKLING, M.A.

INTRODUCTION

In order to provide as complete a picture as possible of the bird life in Northumberland and Durham it has been decided to publish both the county and Farne Islands ornithological reports in the same part of the *Transactions*. Farne records have, where appropriate, been mentioned briefly in the county report, while the majority of breeding birds, as well as other species of special interest, are dealt with here in detail. An account of the year's ringing on the islands is also embodied. In both reports the classified notes, and ringing recoveries, are arranged in the order given in the *Check-list of the birds of Great Britain and Ireland* (1952), published by the British Ornithologists' Union.

Principal contributors to the report are F. I. Bodger, J. C. Coulson, T. H. Pearson, D. R. Potts, W. Shiel, B. P. Springett and the compiler.

GENERAL

On 17 February, shags, cormorants and eiders were in full breeding plumage and by 5 March some birds were back on their nesting sites—guillemots on the tops of the Pinnacles, a few kittiwakes "kittiwaking" on the cliffs and at least 20 shags already nest building on the Brownsman. Four weeks later, on 2 April, some 100 pairs of cormorants had settled on the North Wamses and several had begun nest making; eight of the shags' nests on the Brownsman contained eggs and the puffins had started clearing out their burrows.

Weather during the succeeding months was, on the whole, favourable to nesting birds. Terns, however, suffered to some extent: many eggs on the Brownsman flat were washed away by a high tide on 2 June, while heavy rain on 2 July, and a severe north-west gale on 4 July (when gusts of up to 75 m.p.h. were recorded at Berwick) caused considerable casualties among fledglings. By 3 July, guillemots and puffins showed signs of leaving—the Pinnacles were completely clear at midday on 2 July—and on 22 July it was obvious that the season

was virtually over. Most of the young kittiwakes were flying and, with the exception of a few late Sandwich and common terns, practically all the young terns were on the wing; some cormorants and shags, however, still had eggs. Last to finish nesting were the lesser black-backed and herring-gulls: gulls' eggs were, as usual, collected throughout May and June and there were still unfledged youngsters at the end of August.

Two additions, the collared dove and the blue-headed wagtail, were made to the systematic list of birds recorded for the islands and there was a new nesting species—the black-headed gull.

Once again some of the nesting birds suffered from predators. The majority of visitors do little intentional damage, but there is still egg stealing, particularly at busy periods, such as weekends. Moreover, the mere presence of large numbers of people may disturb sitting birds and so leave their eggs exposed to attack by gulls; fulmars are particularly vulnerable. The Study Centre log book records that 20 fulmars' eggs were laid on the Inner Farne between 20 May and 2 June and the watchers believed that nine or ten of these eggs, as well as the five laid on Staple Island, were taken by visitors. Damage was not confined to eggs, as is shown by an incident on the Wideopens when a boy—member of a picnic party—was discovered throwing stones at puffins.

CLASSIFIED NOTES

26. Fulmar Petrel *Fulmarus glacialis*

2 pairs nested on Brownsman, 5 on Staple Is., 1 on Roddam and Green, 1 on W. Wideopens, 20 on Inner Farne. Despite an increase of 18 nesting pairs no young were reared.

28. Cormorant *Phalacrocorax carbo*

Nest building had started on N. Wamses by 2 Apr. and on 11 May there were 113 nests: at least 90 contained eggs and 1 had small young. The adults were remarkably tame, and it was obvious that, for once, they had not been robbed. On 9 June, 77 nests counted on the Megstone.

29. Shag *Phalacrocorax aristotelis*

Breeding commenced early. 8 nests on Brownsman had eggs (max. clutch size 3) on 2 Apr. and first young hatched on 29 Apr. 128 nests counted on Staple Is., 52 on Brownsman and 17 on Inner Farne. T. Pearson reported that on 2 Aug. 4 nests on Inner Farne contained new clutches of eggs, whether laid by the original nest builders, or by a new pair, was not known. Unusual nest materials included barbed wire and orange and blue plastic cords: the latter had been removed from the dried-up corpses of seal calves. Among nesting birds was 1 ringed as an adult in 1952, while 2 pairs recorded in 1959, and 1 in 1960, were again retrapped; their partnerships had remained unaltered.

56. Tufted Duck *Aythya fuligula*

Seen off Inner Farne: 25 Apr., 1; 7 May, a pair; 2 July, 1. Only 2 previous records (in 1953 and 1957) since 1901.

60. Goldeneye *Bucephala clangula*

3 in Staple Sound on 13 Jan. and 15 May. Only previous records were 4 seen occasionally from Feb. to Apr. 1953.

67. Eider-Duck *Somateria mollissima*

Minimum of 583 nesting ducks: 425 on Inner Farne, 130 on Brownsman, 10 on Staple Is., and 18 on Longstone. On 29 Apr., single clutches of 3 eggs found on both Inner Farne and Brownsman and 2 ducks still sitting on Brownsman on 16 July. Considerable numbers of deserted nests again noted: the eggs had been carefully covered, thus suggesting that the birds had not been alarmed, but had simply not returned. The oldest duck retrapped on the islands was ringed as an adult in 1953.

During winter, eiders frequent Seahouses harbour and some become extremely tame: on one occasion, as the *Glad Tidings* was setting out, a duck came to within a yard or two, clucking for food.

69. Red-breasted Merganser *Mergus serrator*

At least four records, all in July: numbers varied from 1 to 15. Last recorded in 1953.

107. Merlin *Falco columbarius*

Inner Farne: 1 on 17 Feb.

131. Oystercatcher *Haematopus ostralegus*

At least 24 pairs nested: 5 on Inner Farne, 3 on Wideopens, 3 on Knoxes Reef, 1 on Longstone, 9 on Brownsman and 3-4 on Staple Is.

133. Lapwing *Vanellus vanellus*

3 pairs nested on Inner Farne, but no young fledged. 1 chick eaten by a herring-gull, and remaining young also probably taken by gulls.

134. Ringed Plover *Charadrius hiaticula*

Some 21 pairs nested: 10 on Brownsman, 3 on Staple Is. and at least 8 on Inner Farne.

154. Black-tailed Godwit *Limosa limosa*

Inner Farne: skull and upper mandible found on 25 Apr. Only one other record—on Longstone in 1953.

194. Great Skua *Catharacta skua*

1 or 2 between 31 July and 10 Aug.

198. Greater Black-backed Gull *Larus marinus*

Again present in large numbers in late summer; build-up first noticed on Crumstone on 19 June. A bird ringed as young at Castlecraig, Nigg, Ross and Cromarty, on 7 July, 1960, was found, long dead, on Wideopens on 28 Apr. This is the first recovery of a greater black-backed gull on the Farnes.

199 and 200. Lesser Black-backed Gull *Larus fuscus* and Herring-Gull *Larus argentatus*

First eggs found on Wideopens on 10 May and quite a number of young still here on 30 Aug. Following Dr. Ennion's retirement all gull ringing was carried out either by members of the Society, or of the Durham Colleges. Examination of 865 young birds (under J. C. Coulson's guidance) showed that 63 were herring-gulls and 802 lesser black-backs, which suggests that the number of nesting herring-gulls is larger than had been thought previously. Figures for individual islands were as follows:—Brownsman 13 l.b.b., 5 herring; Harcars 184 l.b.b., 12 herring; N. Wamses 158 l.b.b., 12 herring; S. Wamses 168 l.b.b., 4 herring; Wideopens 268 l.b.b., 25 herring; Knoxes Reef 11 l.b.b.; Megstone 2 herring; Skeney Scar 3 herring.

202. Glaucous Gull *Larus hyperboreus*

N. Wamses: 1 on 2 Apr.

208. Black-headed Gull *Larus ridibundus*

At least 1 pair nested on Inner Farne in June, but later deserted. 2 young seen, with adults, on Staple Is. and Brownsman in July. First proved nesting record for the Farnes. Increased numbers present in autumn with maximum of 8 on Wamses on 29 Oct.

211. Kittiwake *Rissa tridactyla*

On Inner Farne nest building started on 13 Apr., first egg laid 17 May, with hatching commencing 14 June and fledging on 20 July. Laying commenced a week earlier on Brownsman and by 16 July several young were on the wing. Among nesting birds was one ringed as young in 1951.

218. Arctic Tern *Sterna macrura*

First egg laid on Inner Farne on 17 May and on Brownsman on 18 May. Hatching commenced on Inner Group on 10 June with fledging on 2 July. On 24 June, 42 scrapes found on Knoxes Reef and 3 on Wideopens, but few (if any) young reared. One of the oldest arctic terns ever recovered was found nesting on Inner Farne on 22 June. It had been ringed as young on the Farnes on 6 July, 1939, and had previously been retrapped on 2 June, 1955. Among other retraps were 2 birds aged respectively 14 and 11 years.

219. Roseate Tern *Sterna dougallii*

A marked increase with at least 34 clutches on Inner Farne and 60 on Brownsman. The main Brownsman colonies were above the lower garden (13 nests), near the flat (27-28 nests) and beside the pond (17 nests). An adult caught on Inner Farne on 23 June (first retrap for the Farnes) had been ringed as young on Longstone End in 1958.

223. Sandwich Tern *Sterna sandvicensis*

All on Brownsman, the main colony (1,500-2,000 pairs) being above the N. Cove with a group of 5 nests near the upper garden. First eggs laid on 11 May, but although hatching started on 6 June, and the greater part of the colony area was

deserted by 25 June, some eggs still hatching on 22 July. A bird found dying near the N. Cove on 10 Aug. had been ringed as young at Hattstedtermarsch, Schleswig-Holstein, in 1957: this is the first foreign-ringed bird recovered on the Farnes.

224. Razorbill *Alca torda*

Over 200 counted off Inner Farne stack on 12 June—probably largest number seen at any one time. No nesting on Outer Group, but 6 nests found on Inner Farne: 1 containing 2 eggs was apparently incubated by a single pair. Only 2 young hatched.

227. Guillemot *Uria aalge*

An increase in nesting birds. On 2 June, 106 eggs counted on Brownsman and on 9 June, 40 on Megstone. For the first time on record 1 nested among kittiwakes at the north end of Brownsman and 2 among cormorants on N. Wamses.

230. Puffin *Fratercula arctica*

F. I. Bodger reported a "white" puffin on Brownsman in both 1960 and 1961. Description stated: "Only leading edge of primaries appeared black, bill not so highly coloured, eye appeared to be normal colour." 2 puffins and a guillemot retrapped on the islands in June and July had been ringed as adults in 1955.

— Collared Dove *Streptopelia decaocto*

Inner Farne: 1 on 30 Apr. First record for the Farnes.

265. Wryneck *Jynx torquilla*

Inner Farne: 1 on 26 and 27 Apr. Eighth record for the Farnes.

273. Shore-Lark *Eremophila alpestris*

Inner Farne: 1 on 20 May, a late date. Third record for the Farnes.

373. Meadow-Pipit *Anthus pratensis*

Pair nested on Inner Farne. First definite breeding record since 1953 (1959 breeding probable, but not proved).

379. Rock-Pipit *Anthus spinoletta*

At least 30 pairs nested.

380a and b. Pied Wagtail and White Wagtail *Motacilla alba*

Pair of pied wagtails nested on Inner Farne: nesting last confirmed in 1955. A white wagtail on Inner Farne on 1 May.

382a and b. Yellow Wagtail and Blue-headed Wagtail *Motacilla flava*

Outer Group: 1 yellow wagtail on 11 May and 2 June. A blue-headed wagtail identified by J. C. Coulson on Brownsman on 29 Apr. is the first recorded for the Farnes.

422. Lapland Bunting *Calcarius lapponicus*

Inner Farne: 1 on 28 Apr. Third record for the Farnes.

OTHER SPECIES

The following species, although not dealt with in detail, were recorded: Diver *sp.*, Manx shearwater, gannet, heron, mallard, teal, wigeon, long-tailed duck, common scoter, sheld-duck (breeding), grey lag-goose, swan *sp.*, peregrine falcon, kestrel, golden plover, turnstone, common snipe, curlew, whimbrel, redshank, knot, purple sandpiper, dunlin, sanderling, arctic skua, common gull, black tern, common tern (breeding), black guillemot, wood-pigeon, swift, skylark, swallow, house-martin, sand-martin, carrion-crow, hooded crow, wren, fieldfare, song-thrush, redwing, ring-ouzel, blackbird, wheatear, whinchat, redstart, robin, sedge-warbler, blackcap, whitethroat, willow-warbler, chiffchaff, goldcrest, spotted flycatcher, hedge-sparrow, starling (breeding), linnet, snow-bunting, tree-sparrow.

RINGING

During the year 8,390 young and 643 adults were ringed and the total of 9,033 (which does not include re-ringed birds) is again a record and is 2,682 greater than the corresponding figure for 1960. The numbers of individual species were as follows, the 1960 figures being given, for comparison, in brackets:—Fulmar 3(10); cormorant 200(25); shag 348(267); eider-duck 350(58); oystercatcher 1(2); ringed plover 9(6); lesser black-backed gull 802(300); herring gull 63(—); kittiwake 1,564(1,158); common tern 130(303); arctic tern 2,945(2,120); roseate tern 127(89); Sandwich tern 1,928(1,654); guillemot 217(164); puffin 326(180); wryneck 1(—); wheatear 1(—); redstart 1(1); robin 1(—); blackcap 1(1); rock-pipit 12(10); pied wagtail 2(—); starling 1(—). In addition 133 adults (113 in 1960) were re-ringed.

As usual J. C. Coulson took a large part in planning and carrying out the ringing and practically all the work on the Inner Farne was undertaken by T. Pearson and B. Springett, who spent either the whole, or the greater part of the summer on the island. They were assisted by other students from the Durham Colleges who stayed, for varying periods, in the Study Centre. Members of the Natural History Society worked mainly on the Outer Group.

Increased ringing and re-trapping has meant an increase in recoveries—there have been 413 compared with 359 reported in 1960—and it is becoming difficult to give these in full. Accordingly, changes have been made in the list that follows. This shows the total numbers of birds recovered, as well as the numbers found on the Farnes and locally—i.e. away from the islands, but within 15 miles of them. The only recoveries given in full are those beyond the local radius.

Among recoveries recorded in 1960 was the first Farne-ringed cormorant to be found in Ireland: during 1961 there was another recovery—a bird ringed, like the first, on 10 July, 1959, and, like it, shot at Lough Neagh. The cormorant killed at Vue on the R. Loire is the ninth found in France or Spain. Non-local shag recoveries showed a marked decrease—11 compared with 45 in 1960, but they included the first from Dorset. The herring-gull recovery is the first of a Farne-ringed bird, while two kittiwakes were found well inland. Farne tern recoveries were particularly interesting: the recovery of a roseate tern is the third for this species and the first outside the British Isles, while three more common terns have been found in West Africa (the first for this area was in 1960). Many more arctic terns (including three well inland) have been recovered: six were in West Africa and two in South Africa.

A certain number of kittiwakes, as well as some shags, still carry aluminium rings: these are rapidly becoming illegible and efforts to replace them with monel rings continue. Monel rings were, for the first time, used on cormorants, lesser black-backed and herring-gulls and it is hoped that the change will increase the likelihood of birds being recovered several years after ringing.

RECOVERIES OF BIRDS RINGED ON THE FARNE ISLANDS

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
CORMORANT		
(Total: 43; Farne Is.: 1; local 3)		
9.7.52	Horncliffe, Northd. (shot)	7.11.61
15.8.53	Leith, Midlothian	19.4.61
1.6.57	Berwick-on-Tweed (shot)	27.3.61
13.6.57	Grangemouth, Stirlingshire	6.4.61
19.7.57	Loch Leven, Kinross	8.4.61
10.7.59	Firth of Tay—2 birds (shot)	(20.2.61)
"	Lough Neagh, N. Ireland (shot)	4.3.61
"	Berwick-on-Tweed (shot)	4.4.61
"	Judas Gap, Cattawade Marsh, Essex	29.4.61
"	Llandrindod Wells, Radnorshire (shot)	ca.5.6.61
"	Sunderland, Co. Durham (drowned in fishing net)	(7.6.61)
"	— (ring found loose in post and forwarded by G.P.O.— received at Ringing Office 12.7.61)	
27.7.60	Nr. Kincardine-on-Forth, Fife	15.4.61
29.8.60	Glasgow, Lanarkshire	6.4.61
2.6.61	Birkhill, R. Tay, nr. Balmerino, Fife (shot)	13.11.61
"	Berwick-on-Tweed (shot)	15.11.61
"	West Haven, Carnoustie, Angus	11.12.61
9.6.61	L'Aiguillon-sur-Mer, Vendée, France	5.11.61
20.6.61	Whitburn, Co. Durham (caught in fishing net)	(15.8.61)
"	Spittal Point, Tweedmouth (shot)	1.9.61
"	Montrose Basin, Angus (shot)	16.11.61
22.7.61	Holbeach St. Mathew, Lincs.	28.10.61
"	R. Tweed (shot)	23.12.61
31.7.61	R. Tweed—4 birds (shot)	18.9.61; 27.10.61; 6.11.61; 17.11.61
"	Vue, R. Loire, Loire Atlantique, France (killed)	22.10.61
"	R. Esk, nr. Whitby, Yorks.	(30.10.61)
"	Connah's Quay, nr. Hawarden, Flintshire	19.12.61
14.8.61	Tynninghame, E. Lothian (shot)	28.10.61
"	South Shields, Co. Durham	16.11.61
"	Locoal Mendon, nr. Belz, Morbihan, France (killed)	8.12.61
"	Barrow-in-Furness, Lancs. (caught in fishing net and destroyed)	9.12.61
"	Cambois, Blyth, Northd.	(13.12.61)
"	Locoal Mendon, nr. Belz, Morbihan, France (killed)	15.12.61
"	Mistley, R. Stour, Essex	20.12.61
"	Dumbarton, Dunbartonshire	"
SHAG		
(Total: 59; Farne Is.: 46; local: 1)		
25.6.60	Portland, Dorset	(24.3.61)
9.7.60	Brancaster, Norfolk	(14.1.61)
"	Cley, Holt, Norfolk	(23.1.61)

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
SHAG—continued		
27.7.60	Pettycur, Kinghorn, Fife	4.5.61
2.8.60	Burntisland, Fife	22.5.61
"	Cellardyke, Fife	ca.30.12.60
5.6.61	Berwick-on-Tweed (shot)	18.9.61
22.6.61	Holy Is., Northd.	5.11.61
24.6.61	Seafield, nr. Kinghorn, Fife	25.12.61
29.6.61	Staithe, nr. Saltburn, Yorks.	(29.8.61)
9.7.61	R. Tees estuary (caught)	5.11.61
22.7.61	R. Tweed (shot)	27.9.61
EIDER-DUCK		
(Total: 51; Farne Is.: 46; local: 5)		
LESSER BLACK-BACKED GULL		
(Total: 17; Farne Is.: 2; local: 1)		
14.8.58	Puerto de Santa Maria, Cadiz, Spain (killed)	ca.8.2.61
4.8.59	Ryton-on-Tyne, Co. Durham	10.9.61
17.8.59	Mexilhoeira, nr. Portimão, Portugal	11.9.61
2.9.59	Leavesden, nr. Watford, Herts. (hit by aircraft)	9.10.61
13.8.60	Colindres, nr. Laredo, Santander, Spain (captured)	(18.2.61)
14.8.61	Thornton, nr. Bradford, Yorks.	5.10.61
"	Rio Souss, Ait Melloul, Morocco (killed)	1.11.61
"	Essaouira (ex Mogador), Morocco (found exhausted)	6.11.61
"	Leixoes, Douro Litoral, Portugal	8.11.61
"	Cabo de Peñas, Oviedo, Spain	16.12.61
"	Nouakchott, Mauritania, W. Africa	(23.12.61)
"	At sea, off Ifni, Spanish Morocco	31.12.61
22.8.61	Maliaño, nr. Camargo, Santander, Spain	14.9.61
"	Pasajes, Guipúzcoa, Spain (shot)	2.11.61
HERRING GULL		
(Total: 1; Farne Is.: —; local: —)		
10.8.61	Newcastle upon Tyne (killed by lorry)	(9.11.61)
KITTIWAKE		
(Total: 121; Farne Is.: 91; local: 3)		
3.7.56	*Hartlepool, Co. Durham	prob. 1959
"	*Amble, Northd.	(8.7.61)
7.7.56	Qagssimiut, Julianehåb District, Greenland (shot)	17.8.60
30.6.58	*Jarrow, Co. Durham	8.5.61
10.7.58	W. side of Karmøy Is., Rogaland, Norway (found oiled—destroyed)	15.2.61
"	*Crimdon, nr. Hartlepool	16.7.61
18.7.58	Amerdloq Fjorden, Holsteinsborg District, S.W. Greenland (shot)	28.6.59

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
KITTIWAKE—continued		
18.7.58	Dishoek, Koudekerke, Island of Walcheren, Zeeland, Netherlands (presumed dead)	9.2.61
"	Bridlington, Yorks.	16.4.61
19.7.58	Brancaster, Norfolk	20.5.61
26.6.59	Lowestoft, Suffolk (found injured)	20.5.61
27.6.59	*St. Osyth, Essex	25.3.61
18.7.59	Narssalik, Julianehåb District, Greenland (shot)	24.8.60
"	At sea, off Firth of Forth (presumed caught on ship)	26.8.61
22.7.59	Aughadown, Skibbereen, Cork, Eire	31.1.61
"	Nanortalik, Julianehåb District, Greenland (shot)	30.7.61
9.7.60	Nr. Brewood, Wolverhampton, Staffs. (inland recovery)	(12.2.61)
"	Minsmere, Suffolk	8.4.61
14.7.60	At sea, entrance to St. George's Channel (released)	1.7.61
"	Girvan, Ayrshire	14.7.61
"	St. Servan, Ille et Vilaine, France	15.8.61
"	Rennesse, Schouwen, Zeeland, Netherlands	19.11.61
15.7.60	Emstek, Niedersachsen, Germany (presumed dead— inland recovery)	(5.4.61)
2.8.60	Bay of Biscay (caught on fishing vessel)	7.2.61
29.6.61	Seaton Carew, Co. Durham	(23.7.61)
"	Redcar, Yorks.	ca.20.10.61
1.7.61	Heligoland, Germany (shot)	ca.10.11.61

COMMON TERN

(Total: 3; Farne Is.: -; local: -)

18.7.59	Lomé, Togo (found exhausted)	9.2.61
7.7.60	Takoradi, Ghana (released without ring)	31.3.61
16.7.60	Cotonou, Dahomey (caught)	(21.6.61)

ARCTIC TERN

(Total: 58; Farne Is.: 33; local: 3)

16.7.54	Linne, R. Maas, nr. Roermond, Limburg, Netherlands (inland recovery)	16.8.61
20.7.57	*Monrovia, Liberia	23.8.61
18.7.58	Nr. Port Loko, Sierra Leone (killed)	ca.4.9.61
4.7.59	*Freetown, Sierra Leone (found tangled in fish net—released without ring)	25.8.61
18.7.59	Coquet Island, Northd. (released)	24.7.61
25.6.60	*Aberlady Bay, E. Lothian (dead 7-8 weeks when found)	(15.11.61)
7.7.60	Richard's Bay, Zululand, S. Africa	5.11.61
9.7.60	Estuary of R. Kobonqaba, Transkei, Cape Province, S. Africa (found freshly killed)	8.7.61
23.7.60	Keta, Ghana (caught)	(10.8.61)
11.6.61	Coldingham, Berwickshire	17.7.61

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
ARCTIC TERN—continued		
22.6.61	Danes Dyke, nr. Flamborough, Yorks.	21.7.61
"	Blyth (came down on dredger—later flew off)	28.7.61
23.6.61	32 kms. N.W. of Quibala, Angola (inland recovery)	30.10.61
24.6.61	Carnoustie	30.7.61
"	Kirkliston, W. Lothian (found injured— inland recovery)	9.8.61
"	Bay of Biscay (presumed killed)	5.9.61
"	Cotonou, Dahomey (caught)	4.11.61
25.6.61	Crimdon, nr. Hartlepool	20.7.61
1.7.61	Luanda, Angola (found alive)	14.10.61
8.7.61	St. Andrew's, Fife	9.8.61
15.7.61	Bay of Biscay (presumed killed)	5.9.61
16.7.61	W. Hartlepool	ca.5.9.61
ROSEATE TERN		
(Total: 2; Farne Is.: 1; local: -)		
3.7.61	Takoradi, Ghana (released without ring)	27.10.61
SANDWICH TERN		
(Total: 29; Farne Is.: -; local: -)		
8.7.56	Aberlady Bay, E. Lothian	15.7.61
29.6.57	Ravenglass, Cumberland (ring no. read on live, breeding bird)	19.6.61
14.7.57	Weiga, nr. Accra, Ghana (captured)	8.1.61
18.7.58	Afiadenvigba, nr. Keta, Ghana	2.1.61
15.7.59	St. Cômes de Fresne, nr. Arromanches, Calvados, France	26.9.61
18.7.59	Nr. Tabou, Ivory Coast (killed)	8.5.61
20.6.60	Mama Beach Village, nr. Freetown, Sierra Leone (caught)	3.4.61
"	? Dakar, Sénégal (found dead, lodged in aircraft engine casing)	9.5.61
22.6.60	Nr. Dakar, Sénégal (captured)	Feb. 1961
"	Bissau, Portuguese Guinea	(2.5.61)
25.6.60	Nr. Freetown, Sierra Leone (found unable to fly—later flew off)	2.3.61
"	Lower Buchanan, Liberia (shot and wounded)	19.3.61
"	Port Bouet, Ivory Coast	3.5.61
"	Abidjan, Ivory Coast (killed on boat)	(26.6.61)
"	Grand Bassam, Ivory Coast (found exhausted—died)	5.11.61
4.7.60	La Pallice-Laleu, nr. La Rochelle, Charente Maritime, France	28.9.60
"	Dakar, Sénégal	13.1.61
"	Buchanan, Liberia (shot)	27.2.61
"	Retba, Dakar, Sénégal (hit by helicopter)	16.6.61

Date ringed	Place recovered	Date recovered
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SANDWICH TERN—continued

6.7.60	Alger, Algeria	23.3.61
20.6.61	Aberlady	29.7.61
"	Aflao (ex Lome), Ghana (caught alive, died later)	1.11.61
"	Nr. Freetown, Sierra Leone (caught)	5.11.61
22.6.61	Port Bouet, Ivory Coast (caught)	12.11.61
"	Cabo Cullera, Valencia, Spain	15.12.61
25.6.61	Nr. Keta, Ghana (caught)	28.10.61
1.7.61	Bilsdean, nr. Dunglass, E. Lothian	1.8.61
"	Nr. Huelva, Spain (killed)	24.9.61
"	Cangas, Pontevedra, Spain (shot)	1.10.61

GUILLEMOT

(Total: 19; Farne Is.: 14; local: -)

22.7.59	Hastings, Sussex	28.1.61
6.7.60	Heligoland, Germany	21.12.61
1.7.61	Off Arendal, Aust Agder, Norway (shot)	22.11.61
"	Langesund, nr. Brevik, Telemark, Norway (shot)	5.12.61
31.7.61	Nr. Kvitsøy, Boknfjorden, Rogaland, Norway (shot)	11.11.61

PUFFIN

(Total: 10; Farne Is.: 8; local: -)

20.4.57	*Kilnsea, Yorks.	27.5.61
20.6.61	Between Nymindégab and Hvidesande, Jutland, Denmark	(18.8.61)

ROCK PIPIT

(Total: 1; Farne Is.: 1; local: -)

- NOTES: 1. * Indicates bird ringed as adult.
 2. Unless otherwise stated all birds have been found either dying or dead, or are presumed dead.
 3. Where the date of recovery is unknown, the date of the reporting letter is given in brackets.
 4. "Local" recoveries include all birds (other than those on the Farnes) recovered within 15 miles of the islands.

Arctic tern recovered in the Antarctic

Since this report was prepared news has been received of one of the most notable of Farne recoveries. This was an arctic tern, ringed as young on Brownsman on 22 July, 1961, and recovered in the Southern Ocean (56°20'S, 39°30'E) on 8 December, 1961. It was killed against the Japanese whaling vessel, M.S. *Chiyoda Maru* No. 2, during a snow storm. This is the first British-ringed arctic tern to be found in the Antarctic and there have only been three other comparable tern recoveries. Details of these were as follows:—

Date and place ringed	Place recovered	Date recovered
ARCTIC TERN		
5.7.55 (juv.) Kandalaksha Reserve, U.S.S.R. (67°09'N, 32°30'E)	8m. S. of Freemantle, Australia (shot)	15.5.56
22.5.58 (ad.) Saltholm, Denmark (55°38'N, 12°46'E)	U.S.S.R. Whale ship <i>Slava</i> , Antarctic ice (65°08'S, 115°15'E) (caught)	4.2.59
COMMON TERN		
9.7.55 (pull.) Marum, Sweden (59°55'N, 18°50'E)	4m. S. of Freemantle, Australia (found dead)	7.1.56

CORRECTION TO THE 1960 REPORT

It has now been discovered that the bird ringed by Monk's House Bird Observatory on 13 April, 1958, and caught on a Portuguese fishing vessel off Belle Isle, Newfoundland, in July 1960, was not a puffin, nor had it been ringed on the Farnes. It was, in fact, a fulmar petrel, ringed at Monk's House, and the appropriate amendments should accordingly be made in the section dealing with recoveries.

PLATE 5



ASHES EAST QUARRY, STANHOPE, CO. DURHAM

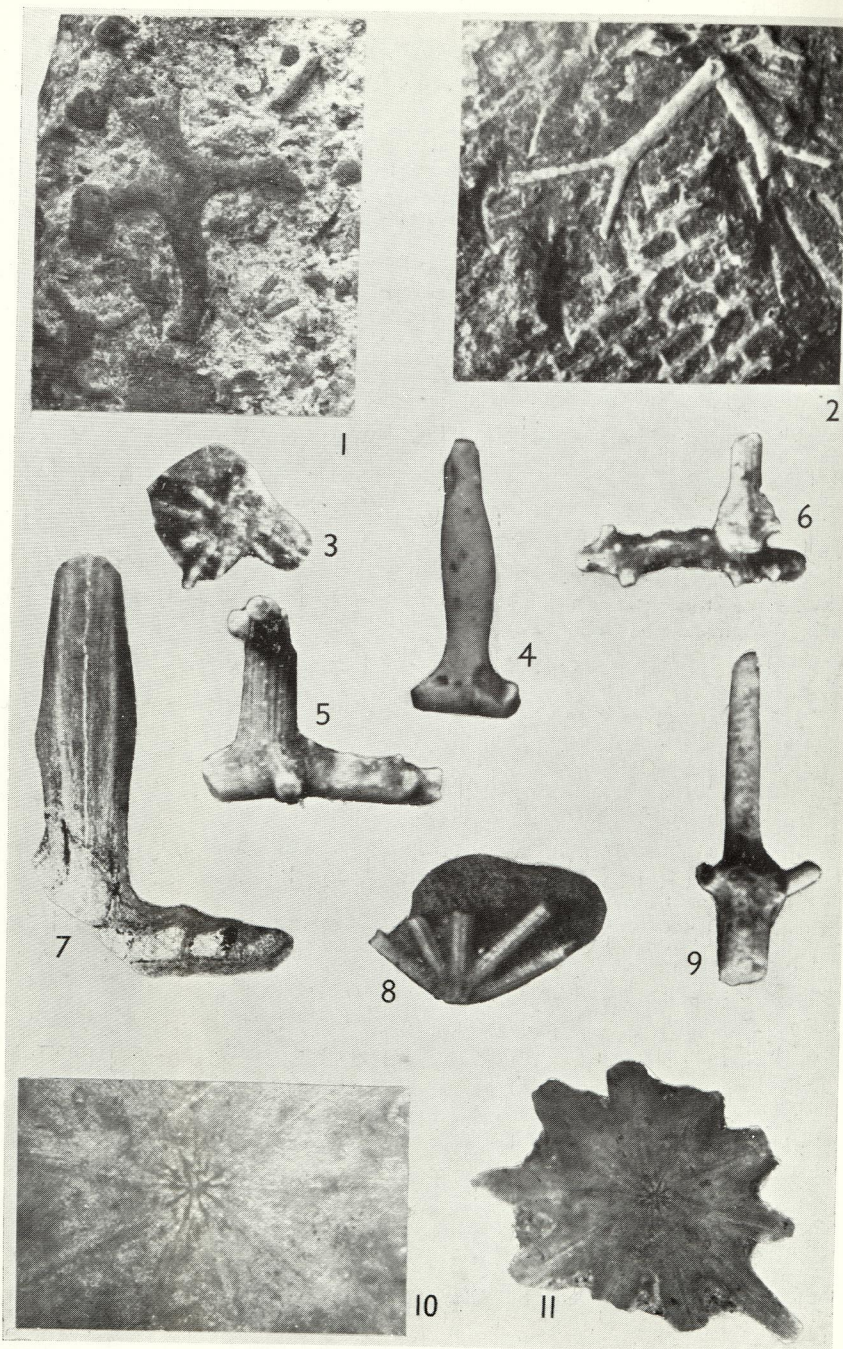
EXPLANATION OF PLATES

PLATE 5

Ashes East Quarry, Stanhope, Co. Durham. Showing the Great Limestone with its associated shale bands, from which many of the fossils described in this paper were collected.

PLATE 6

- Fig. 1. *Claviradix ashfellensis* PD.4036 holotype. Upper surface of body. x 6½
- Fig. 2. *C. cruciformis* PD.3837 holotype. Showing under surface of body. x 6½
- Fig. 3. cf. *Claviradix* sp. PD.3924. Specimen cemented to fragment of brachiopod shell. x 10
- Fig. 4. *P. radiatum* PD.1078. Side view of stem of neotype. x 15
- Fig. 5. *C. cruciformis* PD.3838, Vine Collection. Side view showing root processes which have been partly calcified by the *Fenestella*. Note that the ornament is continuous onto them. x 10
- Fig. 6. As Fig. 5. View from upper surface of body. x 10
- Fig. 7. *P. radiatum* PD.4002, East Kilbride, Lanarkshire. Thin section of stem showing junction with *Fenestella*. x 20
- Fig. 8. *P. scoticum* D.54. Under surface of body and radii of neotype. x 10
- Fig. 9. *P. vinei* PD.1076, Vine Collection. Side view showing stem, body, radii and spire. x 15
- Fig. 10. *C. ashi* PD.3854, Ashes East Quarry (NY997398), Stanhope, Co. Durham. Section through body showing granular nature of inner layer and junction of axial core in the centre. x 40
- Fig. 11. As fig. 10. Section through body and radii. x 20



BRITISH CARBONIFEROUS PALAEOCORYNIDAE

by

J. FERGUSON, F.G.S.

Department of Palaeontology, British Museum (Natural History)

ABSTRACT

A review of the mode of occurrence and stratigraphic distribution of the Palaeocorynidae is attempted and three new species are described. It is shown that although they can apparently exist independently of *Fenestella* certain features indicate that they belong to the Polyzoa. Since the material used by Duncan and Jenkins (1869) cannot be traced neotypes are proposed for *Palaeocoryne radiatum* and *P. scoticum*.

INTRODUCTION

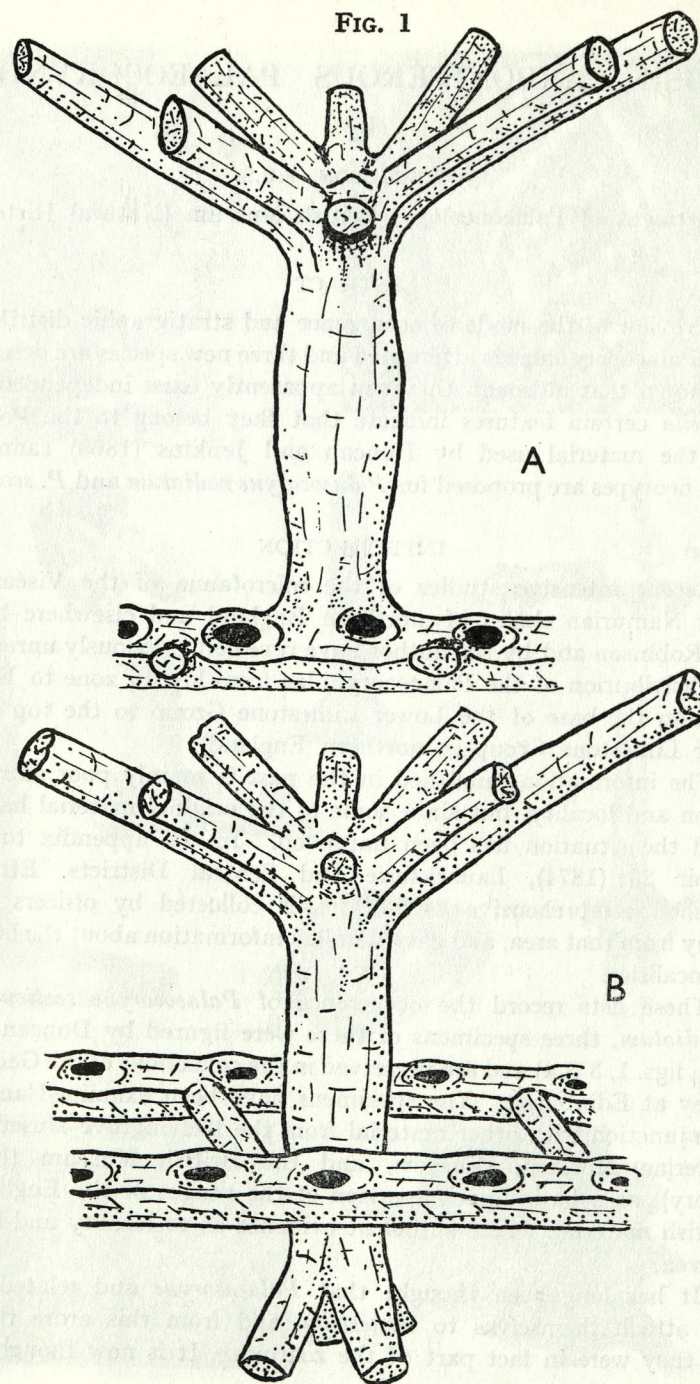
Recent intensive studies of the microfauna of the Viséan and Lower Namurian shales of northern England and elsewhere by Dr. J. E. Robinson and by the author have revealed previously unrecorded wide distribution of the Palaeocorynidae from low P_1 zone to E_2 zone (i.e. from the base of the Lower Limestone Group to the top of the Upper Limestone Group in northern England).

The information published in the past is mainly poor as regards horizon and locality, but since some of the original material has been traced the situation has been improved. In the appendix to Sheet Memoir 23 (1874), Lanarkshire and Central Districts, Etheridge published comprehensive lists of fossils collected by officers of the Survey from that area, and gave detailed information about the horizons and localities.

These lists record the occurrence of *Palaeocoryne scoticum* and *P. radiatum*, three specimens of these were figured by Duncan (1873, pl. 14, figs. 1, 3 & 4) and are preserved in the collections of the Geological Survey at Edinburgh. The specimens have been examined and used in conjunction with other material from the Kelvingrove Museum and Hunterian Museum, Glasgow, and the British Museum (Natural History), as a basis for comparison of the ranges of the English and Scottish material, where sufficient evidence as to locality and horizon is given.

It has long been thought that *Palaeocoryne* and related forms only attach themselves to *Fenestella*, and from this arose the idea that they were in fact part of the zoarium. It is now thought that,

FIG. 1



Reconstruction of (A) *Palaeocoryne* sp. (B) *Claviradix* sp. Both in association with *Fenestella* sp.

although they are associated with polyzoa, this attachment is merely one of convenience and evidence is put forward in favour of this. A comparison is also made between the Palaeocorynidae and the structure of such appendages as root and spiniferous processes and pillars of *Fenestella*, which the author regards as true outgrowths of the zoarium.

Professor M. K. Elias (in a private communication) suggested that species of *Palaeocoryne* and *Claviradix* may have an affinity for certain species of *Fenestella*. This subject has been carefully investigated, using material from the Carboniferous of Stanhope and elsewhere, and the results of this research are given in this paper.

Basically *Palaeocoryne* and *Claviradix* take the form of a small inverted cone-shaped body often with a small conical projection on the upper surface. A stout stem 1-2 mms. in length is attached to the under surface of the body and a number of fairly long (10-20 mms.) tentacle-like radii project from the outer edge of it. These radii often spread out at right angles to the stem, although they have been observed growing in an upward direction (text-fig. 1). The outer surface or periderm is variously ornamented with spines, pits and striations. In *Palaeocoryne* the base of the stem is directly connected to the zoarium of the polyzoan *Fenestella* (text-fig. 1A), while *Claviradix* has several root-like processes which it used to grasp the zoarium of *Fenestella* or to anchor itself in the mud in which it grew (text-fig. 1B).

Members of the Palaeocorynidae have only been found in shale or muddy limestones and are associated with brachiopod polyzoa faunas which flourished under these conditions. They are thought to be gregarious animals, being only rarely found singly, and are common in most beds where *Fenestella* is found.

The techniques used to collect the material are varied, the simplest being to treat quantities of shale with 40 vols. hydrogen peroxide until it has completely disintegrated and then wet-sieve it through a 32 mesh sieve: the material retained on the sieve is afterwards dried and picked over, using a hand lens (Ferguson, 1961, p. 138). Because of the delicate nature of the fossils, material *in situ* is best collected by taking large blocks of shale and splitting them up in the laboratory, where the material can be hardened, if necessary, with a 10% solution of Alvar in chloroform. Thin sections can be prepared using specimens from the washed samples. The specimen is first mounted on a slide with Canada Balsam and then ground wet on glass plate, using very fine grinding powder until the desired line of section is obtained; the slide is then carefully washed, dried and cautiously reheated to enable the specimen to be turned over. When cool, grinding is continued until the slide is the required thickness.

SYSTEMATIC PALAEOONTOLOGY

The nomenclature used here is that suggested by the author (Ferguson, 1961, p. 139), as follows with additions:

BODY—The central, inverted cone-shaped region, with a small, conical elevation on its upper surface. This is the polypite of the authors of the family (1869, p. 696) and the capitulum of Young and Young (1874, p. 685).

RADII—Thin tapering processes radiating from the edge of the body. Young and Young (1874, p. 685) used the term to replace the "tentacular processes" of Duncan and Jenkins (1869, p. 694).

STEM—A stout cylindrical support for the body. This is the hydrocaulus of Duncan and Jenkins (1869, p. 696) and the stem of Young and Young (1874, p. 684).

ROOTS—The dividing of the base of the stem into several processes which are often cellular. These are likely to have been used as anchors or to grasp objects for support (fig. 6A). This part of the organism is not present *Palaeocoryne*, *sensu stricto*, as the stem is fused onto the object on which it grew.

SPIRE—The extensions of the central cone-shaped elevation on the upper surface of the body forming a continuation of the stem.

PERIDERM—The outer laminated layer bearing the ornament in *Palaeocoryne* and continuous with the outer sclerenchyma of the *Fenestella*. Not always present in *Claviradix*.

GRANULAR LAYER—This layer forms the greater part of the inner core of the organism, and usually bears the ornament in *Claviradix*. It is not represented in *Fenestella*.

AXIAL CORE—A thin thread of crystalline calcite which in many cases is continuous and shows uniform extinction with polarized light. In others it is broken and does not exhibit good extinction; it is then best seen with normal light when it appears as a light core.

Family PALAEOCORYNIDAE Duncan and Jenkins 1869 emend. Ferguson 1961.

Genus *Palaeocoryne* Duncan and Jenkins 1869 emend. Ferguson 1961.

Type species—*Palaeocoryne scoticum* Duncan and Jenkins.

Diagnosis—Cone-shaped body with small central elevation on the upper surface. Six to ten tapering radii grow from the edge of body, and a short stem from under-body is intimately attached to zoarium of polyzoan. Outer layer or periderm variously ornamented by striations, spines and pits.

Horizon—Carboniferous of Britain and Mississippian of America.

Palaeocoryne scoticum Duncan and Jenkins 1869

Plate 6, fig. 8; text-fig. 2B.

P. scoticum Duncan and Jenkins 1869, p. 697, Pl. 116, figs. 1 & 6.

P. scotica Duncan and Jenkins; Duncan 1873, Pl. 14, fig. 6.

P. scotica Duncan; Vine 1879a, p. 52.

P. scotica (Duncan); Vine 1879b, p. 228.

P. scotica Duncan; Vine 1881, p. 341.

P. scoticum Duncan and Jenkins; Ferguson 1961, p. 139.

Amended diagnosis—Stem slender, cross section stellate; body well developed with seven radii projecting from edge. Periderm variously ornamented, with pits and spines.

Neotype here designated—British Museum (Natural History), No. D54, Vine Collection.

Horizon of neotype—Upper Carboniferous, Namurian, Upper Limestone Group, E₂ zone, Gare Limestone.

Locality—Gare, near Carlisle, Lanarkshire, Scotland.

Palaeocoryne radiatum Duncan and Jenkins 1869.

Plate 6, fig. 4; text-fig. 2A.

P. radiatum Duncan and Jenkins 1869, p. 697, Pl. 116, figs 2, 5, 7, 8 & 11.

P. radiata Duncan and Jenkins; Duncan 1873, Pl. 14, fig. 5.

P. radiata Duncan; Vine 1879a, p. 52.

Trophosome radiatum (Duncan); Vine 1879b, fig. 175.

Non. P. radiatum Duncan and Jenkins; Ferguson 1961, Pl. 10, fig. 10.

Amended diagnosis—Stem cylindrical, bulbous in centre, body developed, seven to eleven radii. Periderm ornamented with pits and striations.

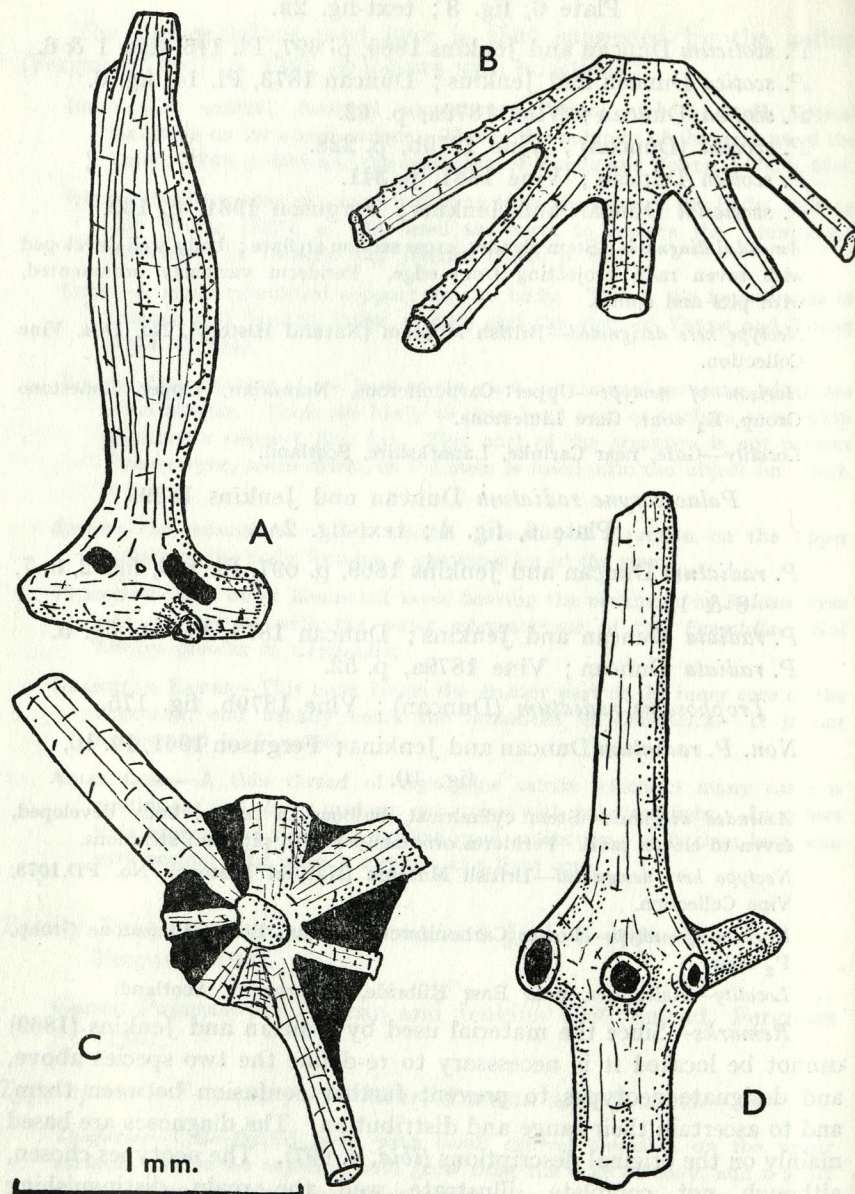
Neotype here designated—British Museum (Natural History), No. PD.1078, Vine Collection.

Horizon of neotype—Lower Carboniferous, Viséan, Lower Limestone Group, P₂ zone.

Locality—Hairmyres, near East Kilbride, Lanarkshire, Scotland.

Remarks—Since the material used by Duncan and Jenkins (1869) cannot be located it is necessary to re-define the two species above, and designate neotypes to prevent further confusion between them, and to ascertain their range and distribution. The diagnoses are based mainly on the original descriptions (*ibid.* p. 697). The neotypes chosen, although not complete, illustrate well the main distinguishing characters; i.e. *P. scoticum* is minutely spiniferous, and both its stem and radii are slender and stellate in cross section, while the stem of *P. radiatum* is bulbous, circular in cross section and often smooth.

FIG. 2



Palaeocoryne. (A) *P. radiatum* (PD.1078), side view of neotype showing junction with *Fenestella* sp. (B) *P. scoticum* (D.54), under surface of part of body and radii of neotype. (C) *P. vinei* (PD.3915), under surface of paratype. (D) *P. vinei* (PD.1076), side view of holotype showing stem, body and spire.

Both are intimately attached to the zoarium of *Fenestella* and usually have a small conical projection on the upper surface of the body.

These species are distinguished from species of *Claviradix* by their method of anchorage, and from pillars belonging to the polyzoan (in cases where only the stem is found) by thin sections. *Palaeocoryne* has a granular layer beneath the periderm which is not present in *Fenestella* or any of its various processes.

Palaeocoryne vinei sp. nov.

Plate 6, fig. 9; text-figs. 2c and 2d.

Diagnosis—Stem smooth, cylindrical, body small, with six or seven radii. Spire projecting from upper surface of body, of equal or greater length than stem, tapering toward extremity. Periderm finely striated or smooth.

Types—Holotype: British Museum (Natural History), PD.1076, Vine Collection. Paratype: British Museum (Natural History), PD.3915.

Horizon and locality—Holotype: Lower Carboniferous, Viséan, P₂ zone, Hairmyres, near East Kilbride, Lanarkshire, Scotland. Paratype: Upper Carboniferous, Lower Namurian, E₁ zone, Great Limestone, Shale D, Ashes East Quarry (NY997398), Stanhope, Co. Durham.

Remarks—This species has been named in honour of George Robert Vine. Young and Young (1874, p. 686) comment: "The pyramid in the centre of the cup is simply the prolongation of the stem beyond the contracted internodes; . . ." also they state (*ibid.*), in a footnote, that a specimen showing a second series of radii was found by Dr. Rankin, of Carlisle. Fortunately this specimen is preserved in the collections of the Hunterian Museum, Glasgow, No. D.310. An examination of the fossil has shown that it belongs to the genus *Claviradix* Ferguson and compares favourably with *C. ashi* Ferguson, the root being extremely well developed. Duncan (1873, p. 416) observed that some specimens showed the development of a spire which he explained as a second growth stage and assumed that a second body and radii could develop at its apex. No specimen has yet been found which shows this second development.

Genus *Claviradix* Ferguson 1961.

Type species: *Claviradix ashi* Ferguson 1961

Diagnosis—As for *Palaeocoryne*, but with root which is often hollow; four to ten radii.

Claviradix ashi Ferguson 1961

Claviradix ashi, Ferguson 1961, p. 141, Pl. 10, figs. 1, 2, 5-7; Pl. 11, fig. 1, text-fig. 3.

Diagnosis—Body cone-shaped, having small elevation on upper surface and ten radii growing from the edge. Stem projects from underside of body and terminates in a root process of three or more projections. The whole is finely striated and pitted.

Clavidarix stanhopensis Ferguson 1961.

Claviradix stanhopensis Ferguson 1961, p. 142; Pl. 10, fig. 3; Pl. 11, figs. 2-4; text-fig. 4.

Diagnosis—As for *C. ashi*, but with eight radii and very coarsely striated periderm.

Claviradix bifurcata Ferguson 1961.

Claviradix bifurcata Ferguson 1961, p. 142; Pl. 10, fig. 4.

Diagnosis—Stem bifid with faint longitudinal striae terminating in root process.

Claviradix gigantea Ferguson 1961

Claviradix gigantea Ferguson 1961, p. 142; Pl. 10, fig. 9.

Diagnosis—Exceptionally large *Claviradix* having seven radii, body almost discoidal with rimmed depression in the centre of the upper surface and remains of stem on the other; the whole granular in appearance.

Claviradix ashfellensis sp. nov.

Plate 6, fig. 1.

Diagnosis—Stem slender, body well developed. Four stout radii projecting from edge, each bifurcating once. Periderm granular in appearance.

Holotype—British Museum (Natural History), PD.4036.

Horizon—Lower Carboniferous, Lower Viséan, base of D₁ zone, Bryozoa Bed.

Locality—Blue Quarry, Ash Fell, Westmorland.

Claviradix cruciformis sp. nov.

Pl. 6, figs 2, 5 & 6; text-figs. 3A & 3B.

Palaeocoryne radiatum Duncan and Jenkins; Ferguson 1961, Pl. 10, fig. 10, text-figs 5B & 5C.

Diagnosis—Central stem with body not developed or ill-defined, four radii projecting from edge, each bifurcate twice. Spire projecting from upper surface of body for a short distance, ending in second set of four radii similar to first. Root consisting of two short projections above base of stem. The whole being finely striated and pitted.

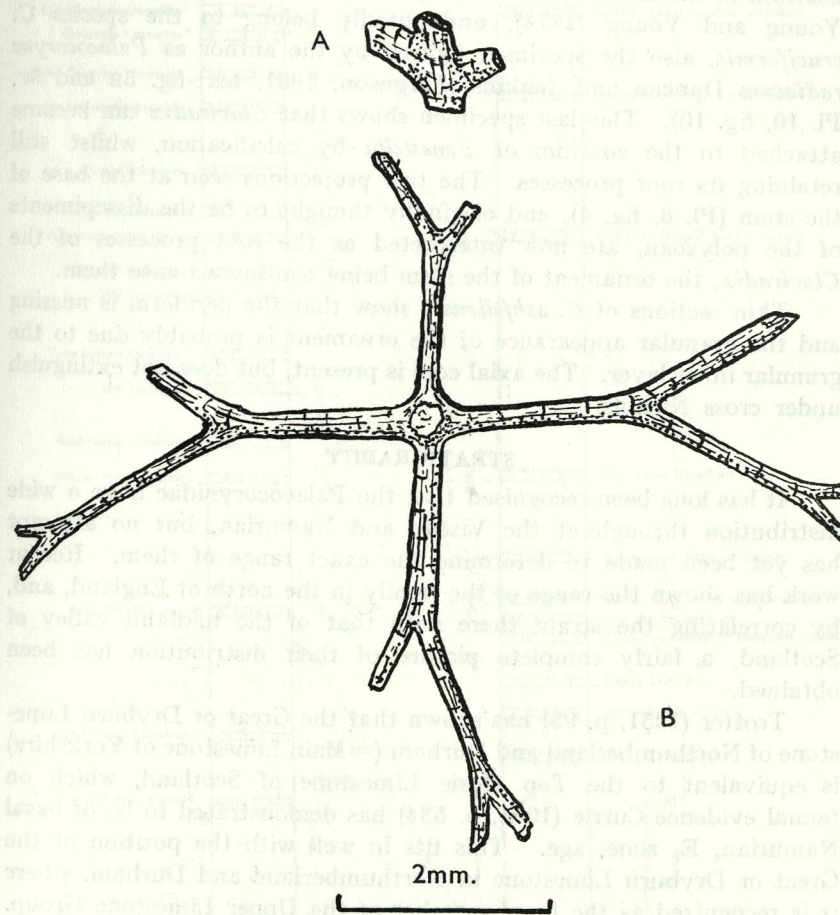
Holotype—British Museum (Natural History), PD.3837.

Horizon—Upper Carboniferous, Lower Namurian, E₁ zone, Great Limestone, Shale D.

Locality—Ashes East Quarry (NY997398), Stanhope, Co. Durham.

Remarks—This last species is not common at Stanhope, but has been found in the Upper Limestones of Scotland and elsewhere, mainly represented by fragments of the bifurcating arms. *C. ashfellensis* is generally larger and the radii are considerably thicker than those of *C. cruciformis*, also the ornament differs. No root process of the former has yet been found, but although they are found among finely comminuted polyzoa debris which includes many fragments of *Fenestella*, there is no evidence to suggest that they were attached in any way

FIG. 3



Claviradix cruciformis (A) Root of holotype (PD.3837a). (B) Reconstruction of under surface of body and radii from the holotype (PD.3837).

to a polyzoan. The counterpart of the holotype of *C. cruciformis* has been broken across to expose the root (text-fig. 3A). This consists of two stout processes given off near the base of the stem, and pointing upwards at an angle, thus forming a barb-like anchorage for the organism. The stem is seen projecting between two branches of the zoarium of the fenestellid. Some specimens referred to and figured by Young and Young (1874), undoubtedly belong to the species *C. cruciformis*, also the specimen figured by the author as *Palaecoryne radiatum* Duncan and Jenkins (Ferguson, 1961, text-fig. 5B and 5c, Pl. 10, fig. 10). This last specimen shows that *Claviradix* can become attached to the zoarium of *Fenestella* by calcification, whilst still retaining its root processes. The two projections seen at the base of the stem (Pl. 6, fig. 4), and originally thought to be the dissepiments of the polyzoan, are now interpreted as the root processes of the *Claviradix*, the ornament of the stem being continuous onto them.

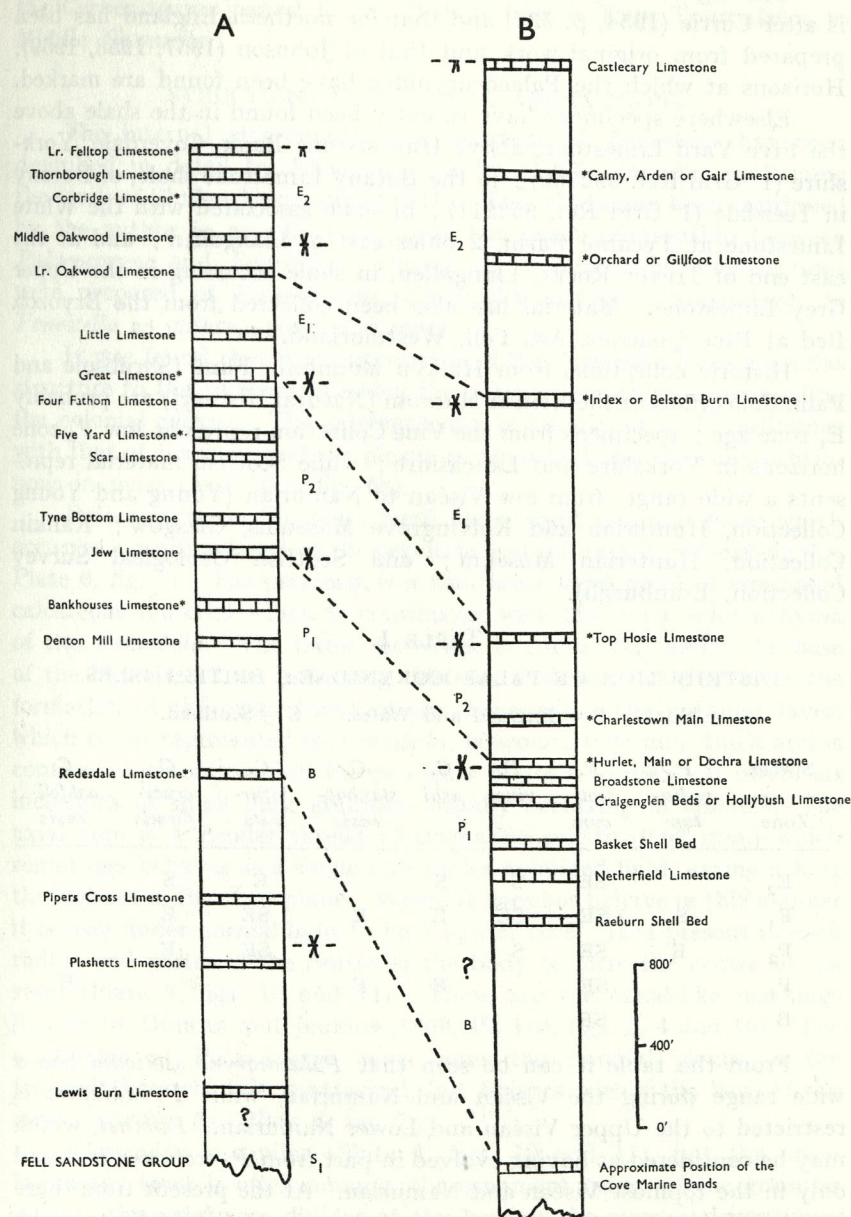
Thin sections of *C. ashfellsensis* show that the periderm is missing and the granular appearance of the ornament is probably due to the granular inner layer. The axial core is present, but does not extinguish under cross Nichols.

STRATIGRAPHY

It has long been recognised that the Palaecorynidae have a wide distribution throughout the Viséan and Namurian, but no attempt has yet been made to determine the exact range of them. Recent work has shown the range of the family in the north of England, and, by correlating the strata there with that of the midland valley of Scotland, a fairly complete picture of their distribution has been obtained.

Trotter (1951, p. 93) has shown that the Great or Dryburn Limestone of Northumberland and Durham (=Main Limestone of Yorkshire) is equivalent to the Top Hosie Limestone of Scotland, which on faunal evidence Currie (1954, p. 534) has demonstrated to be of basal Namurian, E_1 zone, age. This fits in well with the position of the Great or Dryburn Limestone in Northumberland and Durham, where it is recognized as the basal member of the Upper Limestone Group. Johnson (1957, p. 321) correlated the Jew Limestone of west Northumberland with the Hurlet Limestone of the midland valley of Scotland on goniatite evidence, placing the P_1 - P_2 boundary in the north of England here. Wilson (1952) suggested that the Cove Marine Bands are the equivalents of the Redesdale Limestone and Ironstone Bed, which may be of upper B_2 zone age. Thus one can with reasonable certainty correlate between the north of England and Scotland.

FIG. 4



Correlation of Viséan and Namurian strata: (A) Northern England.
(B) The Midland Valley of Scotland.

Text-figure 4 shows such a correlation. The section for Scotland is after Currie (1954, p. 532) and that for northern England has been prepared from original work and that of Johnson (1957, 1958, 1959). Horizons at which the Palaeocorynidae have been found are marked.

Elsewhere specimens have recently been found in the shale above the Five Yard Limestone, above Hunterstone Bank, Coverdale, Yorkshire (1" Grid Ref. 992769); in the Botany Limestone shale, of Botany in Teesdale (1" Grid Ref. 952211); in shale associated with the White Limestone at Tycanol Farm, 2 miles east of Llangollen; and at the east end of Trevor Rocks, Llangollen, in shale occurring in the Upper Grey Limestone. Material has also been collected from the Bryozoa Bed at Blue Quarries, Ash Fell, Westmorland.

Historic collections from Halkyn Mountain, Flint (Shrubsole and Palin Collections at the British Museum [Natural History]) are probably E₁ zone age; specimens from the Vine Collection represent low P₂ zone horizons in Yorkshire and Lancashire; while Scottish material represents a wide range, from low Viséan to Namurian (Young and Young Collection, Hunterian and Kelvingrove Museums, Glasgow; Rankin Collection, Hunterian Museum; and Scottish Geological Survey Collection, Edinburgh).

TABLE I.

DISTRIBUTION OF PALAEOCORYNIDAE: BRITISH ISLES.

NOTE.: E = England and Wales. S = Scotland.

Species Zone	<i>P.</i> <i>radia-</i> <i>tum</i>	<i>P.</i> <i>scoti-</i> <i>cum</i>	<i>P.</i> <i>vinei</i>	<i>C.</i> <i>ashi</i>	<i>C.</i> <i>stanhop-</i> <i>ensis</i>	<i>C.</i> <i>bifur-</i> <i>cata</i>	<i>C.</i> <i>cruci-</i> <i>formis</i>	<i>C.</i> <i>ashfelli-</i> <i>ensis</i>
E ₂		SE	S	S		E	S	
E ₁	S	SE	SE	E	E	SE	E	
P ₂	E	SE	S			SE	E	
P ₁		SE		E	E			E
B		SE						

From the table it can be seen that *Palaeocoryne scoticum* has a wide range during the Viséan and Namurian, while *P. radiatum* is restricted to the Upper Viséan and Lower Namurian. *P. vinei*, which may be considered as having evolved in part from *P. scoticum*, is found only in the topmost Viséan and Namurian. At the present time there is not sufficient material representing the species of *Claviradix* to make more than the broad generalisation that it is more common in the upper beds than the lower. Because of their preferred association with

Fenestella it is of interest to note that the range of the polyzoan during the Carboniferous period in the British Isles is from Tournaisian to Middle Namurian.

STRUCTURE AND FAUNAL ASSOCIATIONS

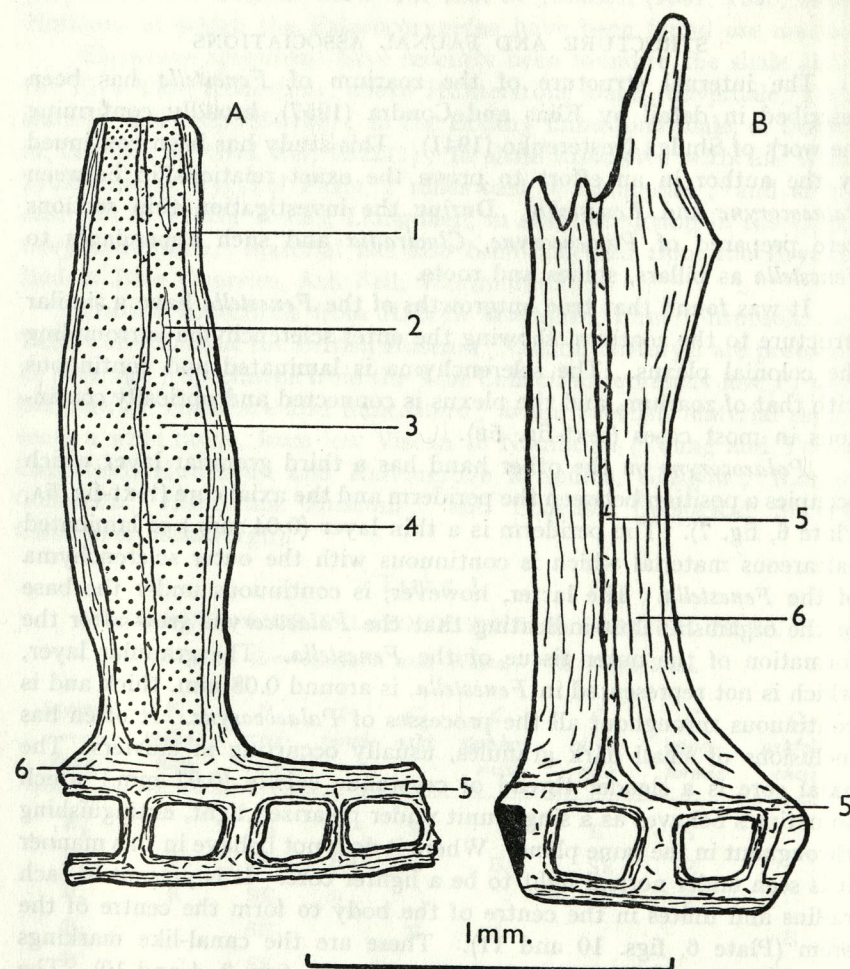
The internal structure of the zoarium of *Fenestella* has been described in detail by Elias and Condra (1957), broadly confirming the work of Shulga-Nesterenko (1941). This study has been continued by the author in an effort to prove the exact relationship between *Palaeocoryne* and *Fenestella*. During the investigation thin sections were prepared of *Palaeocoryne*, *Claviradix* and such appendages to *Fenestella* as pillars, spines and roots.

It was found that true outgrowths of the *Fenestella* have a similar structure to the zoarium, showing the outer sclerenchyma surrounding the colonial plexus. The sclerenchyma is laminated and continuous with that of zoarium, and the plexus is connected and optically continuous in most cases (text-fig. 5B).

Palaeocoryne on the other hand has a third granular layer which occupies a position between the periderm and the axial core (text-fig. 5A, Plate 6, fig. 7). The periderm is a thin layer (0.04 mm.) of laminated calcareous material which is continuous with the outer sclerenchyma of the *Fenestella*. The latter, however, is continuous under the base of the organism, thus indicating that the *Palaeocoryne* grew after the formation of the outer tissue of the *Fenestella*. The granular layer, which is not represented in *Fenestella*, is around 0.08 mm. thick and is continuous throughout all the processes of *Palaeocoryne*. It often has inclusions of small dark granules, usually occurring in clusters. The axial core is a slender thread of crystalline calcite (0.02 mm.) which sometimes behaves as a single unit under polarized light, extinguishing throughout in the same plane. Where it does not behave in this manner it is seen under normal light to be a lighter core. It is present in each radius and unites in the centre of the body to form the centre of the stem (Plate 6, figs. 10 and 11). These are the canal-like markings figured by Duncan and Jenkins (1869, Pl. 116, figs. 3, 4 and 10). The axial core of *Palaeocoryne* never joins the colonial plexus of the fenestellid to which it is attached, but finishes within the base of the stem (text-fig. 5A, Plate 6, fig. 7).

Claviradix is similar (Plate 6, figs. 10 and 11), but the outer laminated layer is often missing, the ornament being on the granular layer; the axial core divides at the base of the stem and continues into each root process. In *C. stanhopensis* there are two axial cores in each radius, all of which unite in the centre of the body. In *Palaeocoryne*

FIG. 5



Comparison of the internal structure of *Palaeocoryne* and *Fenestella*.
 (A) *Palaeocoryne radiatum* (PD.4002), partly reconstructed.
 (B) *Fenestella* sp. Pillar (PD.3977).

- | | |
|--------------------------------------|------------------------|
| (1) Periderm | (4) Axial core |
| (2) Isolated fragments of axial core | (5) Colonial plexus |
| (3) Granular layer | (6) Outer sclerenchyma |

vinei the axial core in the stem is continuous into the spire. Thus, as pointed out by Elias and Condra (1957, p. 47), *Palaeocorynidae* are not attached to the plexus of *Fenestella*, but have a closed inner system of their own. The internal structure of *Palaeocoryne* and *Claviradix*, although differing from *Fenestella* in some respects, is Polyzoan, thus the *Palaeocorynidae* must be classified with the Polyzoa.

Shrubsole comments (1881, p. 184): "My observations would lead me to limit the attachment of *Palaeocoryne* to one species of *Fenestella*, viz. *Fenestella nodulosa*, and to the pore face generally, rather than the margin of the polyzoarium. The frequency with which I noticed this association of *Palaeocoryne* with *Fenestella nodulosa* led me to go carefully over my collection, and ascertain definitely the particular species of *Fenestella* with which it was most frequently allied. The result was, that, out of ninety-seven specimens of *Palaeocoryne* eighty-five are either attached to the polypite-face of *Fenestella nodulosa* or associated with it, while twelve only are free and unattached." Unfortunately, as not all of the Shrubsole collection is preserved at the British Museum (Natural History), and since the whereabouts of the remainder are unknown, no complete reassessment of his observations can be made. Examination of the material has shown that *Palaeocoryne scoticum* has a marked preference for *Fenestella nodulosa* (*F. nodulosa* [Phillips], as interpreted by Shrubsole), but it is also found associated with *F. plebeia* M'Coy and *F. cf. hemispherica* M'Coy. One specimen referred to by Shrubsole (*ibid.*) from the Calciferous Sandstone Series of Scotland appears to be *F. carinata* M'Coy with *Palaeocoryne scoticum* attached.

Examination of the material collected from the shale horizon D, in the Great Limestone at Stanhope (Ferguson, 1961, text-fig. 2), has shown *Claviradix stanhopensis* associated with *F. plebeia* and *F. cf. quadridecimalis* M'Coy; *P. scoticum* with *F. frutex* M'Coy and *Parafenestella formosa* (M'Coy), while *C. ashi* is restricted to association with *F. frutex*, and *C. cruciformis* with *Parafenestella formosa*.

No specimens of *Palaeocoryne* or *Claviradix* were found attached to *Fenestella* from the shale above the Five Yard Limestone, owing to the fragmentary nature of the material. Two species of *Fenestella* were identified, namely: *F. plebeia* and *F. retepora* M'Coy; *Parafenestella formosa* could also be present, but until better material is available no definite conclusions can be reached. *Palaeocorynidae* collected from this bed include *P. scoticum*; *C. bifurcata* and *C. cruciformis*. Material from Carlisle, Lanarkshire (Rankin Collection) show *P. scoticum* associated with *F. frutex* and *F. plebeia*.

Two specimens of *F. plebeia*, one from Halkyn Mountain, Flint, and the other from Carluke, Lanarkshire, each have two different species associated with them, namely: *Palaeocoryne scoticum* and *Claviradix cruciformis*. No specimens collected from Stanhope show more than one species of *Palaeocorynidae* associated with one fenestellid, but they do show that many individuals can grow on one zoarium. Specimen PD.3794 (part figured here as holotype of *C. cruciformis*, Pl. 6, fig. 2) shows three individuals on *Parafenestella formosa*, and specimen G.402 (Hancock Museum; part figured, 1961, Pl. 11, fig. 1) has three individuals of *C. ashi* on *Fenestella frutex*.

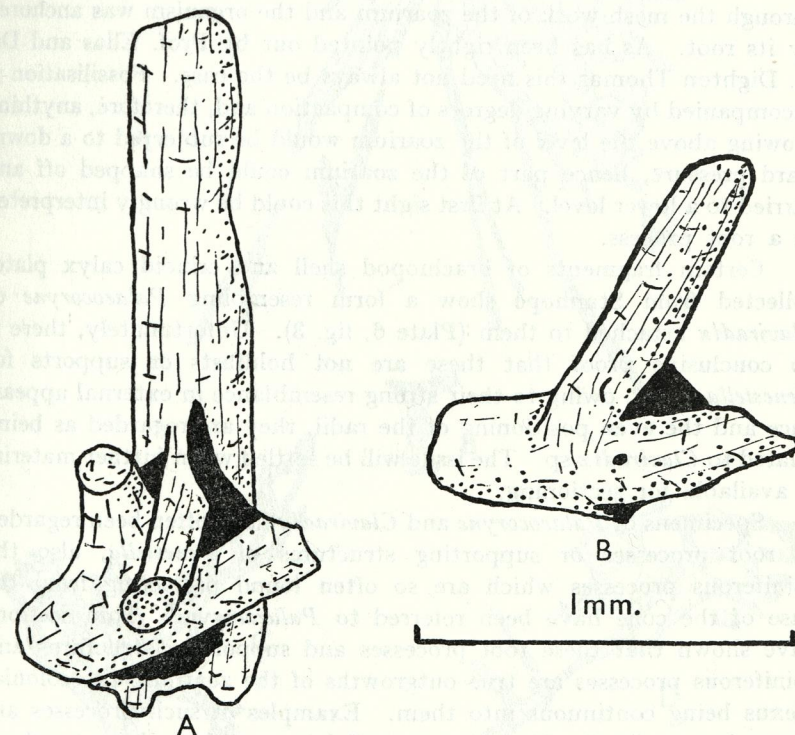
A specimen of *Hemitrypa hibernica* M'Coy collected by the author from the Lickar Limestone (Upper Carboniferous, Namurian, E₂ zone) at Howick, Northumberland (1" Grid Ref. 260174), shows two specimens of *Palaeocoryne scoticum* *in situ*. The specimen shows part of the tube-shaped zoarium with the superstructure exposed, and *Palaeocoryne* attached to the reverse face of the zoarium and growing toward the centre. This is the first recorded occurrence of this association.

Recently several horizons have been investigated which had large numbers of *Fenestella*, but no trace of *Palaeocorynidae*. This was also found to be the case in some shale bands associated with the Great Limestone at Stanhope, Co. Durham (Ferguson, 1961, p. 145). Also it was stated (*ibid.*) that *Claviradix* could exist independently. Further support is given to this idea by a specimen of *Claviradix* cf. *ashi* from the shale above the Gillfoot Limestone of Carluke (Hunterian Museum, No. D.310), which is lying on its side apparently free from any other organism.

An examination of the faunal lists given by Etheridge (1874) has shown that there are twenty-six localities where specimens of *Palaeocoryne* have been found, representing eleven horizons ranging from P₁ zone to E₂ zone. Of these eleven horizons four are from localities where no fenestrate polyzoa are recorded, while there are no polyzoa whatever at certain localities.

Investigation of artificially weathered shale samples from the beds associated with the Great Limestone at Stanhope, Co. Durham, have shown that *Claviradix* has an independent root of its own (Ferguson, 1961, p. 140). Also, as this work proceeded, it became obvious that certain specimens regarded as *Palaeocoryne* were, in fact, *Claviradix* which had attached themselves to *Fenestella*. The root initially grasped the branch of the zoarium and had then become calcified to it, thus forming a stronger anchorage. This calcification is due to the *Fenestella* and explains why some specimens of *Claviradix* have a periderm similar to *Palaeocoryne*. Text-fig. 6A, a specimen from Hairmyres, East

FIG. 6



Junction of *Palaeocoryne* and *Claviradix* with *Fenestella*.
(A) *Claviradix* sp. (PD.4004). (B) *Palaeocoryne* sp. (PD.4003).

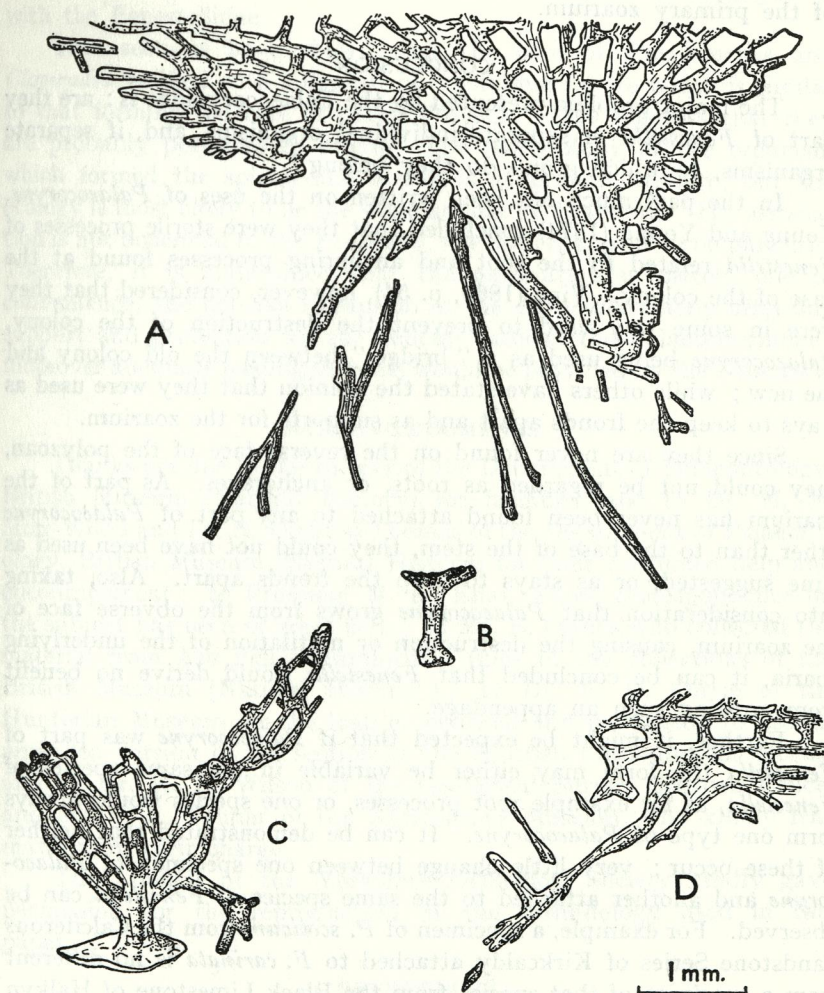
Kilbride, shows the root process of *Claviradix* grasping part of the branch of *Fenestella*. The attachment here is obvious since very little calcification has taken place, but in many cases it is difficult to determine the relationship and hence to distinguish between *Palaeocoryne* and *Claviradix*.

It was assumed by the author (Ferguson 1961, p. 145), that, since the layer of shale between the polyzoan and the associated organism was less than the average length of the stem, the latter protruded through the mesh work of the zoarium and the organism was anchored by its root. As has been rightly pointed out by Prof. Elias and Dr. H. Dighton Thomas this need not always be the case. Fossilisation is accompanied by varying degrees of compaction and, therefore, anything growing above the level of the zoarium would be subjected to a downward pressure, hence part of the zoarium could be snapped off and carried to a lower level. At first sight this could be wrongly interpreted as a root process.

Certain fragments of brachiopod shell and crinoid calyx plates collected from Stanhope show a form resembling *Palaeocoryne* or *Claviradix* attached to them (Plate 6, fig. 3). Unfortunately, there is no conclusive proof that these are not holdfasts or supports for *Fenestella*; but, owing to their strong resemblance in external appearance and the even positioning of the radii, they are regarded as being related to *Claviradix* sp. The issue will be settled when further material is available for sectioning.

Specimens of *Palaeocoryne* and *Claviradix* have often been regarded as root processes or supporting structures of *Fenestella*, also the spiniferous processes which are so often found projecting from the base of the cone have been referred to *Palaeocoryne*. Thin sections have shown that these root processes and supporting structures and spiniferous processes are true outgrowths of the zoarium, the colonial plexus being continuous into them. Examples of such processes are shown in text-fig. 7. There is a superficial resemblance between these processes and Palaeocorynidae, which is due in part to calcification by the *Fenestella*. Small supporting structures, which are morphologically similar to *Palaeocoryne*, are often grown from the reverse face of the zoarium. These grow from the zoarium at various angles, usually pointing downwards, and do not have a symmetrical arrangement of the arms as do *Palaeocoryne*; also they are often attached to some object for support. An example of such outgrowths is shown in text-fig. 7c. It has also been noticed that, at the base of many *Fenestella* colonies, although there are no zoecial apertures on the obverse face, there are some small circular apertures on the reverse

FIG. 7



Fenestella root processes. (A) *Fenestella plebeia* (D.11688), base of colony. (B) *Claviradix ashi* (G.3890) for comparison. (C) *Fenestella* sp. (D.2574) lower part of conical expansion, showing base and Palaeocoryne-like supporting processes. (D) *Fenestella plebeia* (D.2942), part of root showing spiniferous processes.

face near the root process, usually situated below the point where the main system of fenestrules commence. These are possibly the relics of the primary zoarium.

CONCLUSION

The major problem presented by the Palaeocorynidae is: are they part of *Fenestella* or separate individual organisms, and, if separate organisms, to which group do they belong?

In the past much has been written on the uses of *Palaeocoryne*. Young and Young (1874) concluded that they were sterile processes of *Fenestella* related to the root and anchoring processes found at the base of the colony. Vine (1869, p. 54), however, considered that they were in some way used to prevent the destruction of the colony, *Palaeocoryne* being used as a "bridge" between the old colony and the new; while others have stated the opinion that they were used as stays to keep the fronds apart and as supports for the zoarium.

Since they are never found on the reverse face of the polyzoan, they could not be regarded as roots, or anchorages. As part of the zoarium has never been found attached to any part of *Palaeocoryne* other than to the base of the stem, they could not have been used as Vine suggested, or as stays to keep the fronds apart. Also, taking into consideration that *Palaeocoryne* grows from the obverse face of the zoarium, causing the destruction or mutilation of the underlying zoaria, it can be concluded that *Fenestella* would derive no benefit from growing such an appendage.

Further, it might be expected that if *Palaeocoryne* was part of *Fenestella* the form may either be variable in the same species of *Fenestella*, as for example root processes, or one species would always form one type of *Palaeocoryne*. It can be demonstrated that neither of these occur; very little change between one specimen of *Palaeocoryne* and another attached to the same species of *Fenestella* can be observed. For example, a specimen of *P. scoticum* from the Calciferous Sandstone Series of Kirkcaldy attached to *F. carinata* is no different from a specimen of that species from the Black Limestone of Halkyn Mountain, Flint, attached to *F. plebeia*.

Claviradix, although it is usually found associated with *Fenestella*, is sometimes preserved in such a manner as to suggest that it could exist independently. Thin sections have shown that although the periderm is often absent, confirming their independence of *Fenestella*, *Claviradix* are very closely related to *Palaeocoryne*. Since there is no reason for *Fenestella* to grow such appendages as *Palaeocoryne* and *Claviradix*, the internal structure of which is significantly different

from that of such true outgrowths of the zoarium as pillars and roots, it must be concluded that the Palaeocorynidae are not synonymous with the Fenestellidae.

Thin sections have shown that the core of *Palaeocoryne* and *Claviradix* is filled with a deposit of crystalline calcite which is similar to that forming the core of many Polyzoa. This suggests that they are probably polyzoan in origin. The morphology of the organism which formed the spicule-like bodies is at present obscure, but the ecology is most likely to be the same as that of *Fenestella*. The association is not beneficial to the *Fenestella*, nor does it appear to be parasitic. Therefore, it is maintained that the association is merely one of convenience, the net-like expansion of the *Fenestella* colony affording support and protection for the delicate radii of the Palaeocorynidae; moreover adequate feeding currents would be provided by the *Fenestella*.

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A NOTE ON SOME COLLECTIONS OF CORIXIDAE (HEMIPTERA-HETEROPTERA) FROM LOWLAND DURHAM

by

D. T. CRISP, B.Sc., PH.D.

Zoology Department, Durham Colleges in the University of Durham*

Bold (1872) produced a list of the Corixidae of Durham and Northumberland, but later workers (for example, Butler, 1923) have expressed doubts about the accuracy of some of Bold's identifications. The present author has examined Bold's material in the Hancock Museum, Newcastle upon Tyne, and found that none of the specimens bears a locality label and some are incorrectly identified according to the work of Macan (1956). In addition, there are scattered records in the *Vasculum*, which give little information about the habitats, and Massee (1955) lists twenty species that have been found in County Durham. It therefore seems worthwhile to put on record collections of Corixidae made in County Durham by the present author during the period 1954-58.

The results from upland waters are included in Crisp (1962a) and the present note deals only with thirty-seven small bodies of water at or below an altitude of 500 ft., most of them within a ten mile radius of Durham City.

The species taken are listed in Table 1 and details of the habitats studied and the samples collected are shown in Tables 2 and 3. Specimens of each species have been deposited in the Hancock Museum.

The data have several interesting features:—

(1) *Cymatia bonsdorffi* and *Corixa dentipes* are additions to Massee's (1955) list for County Durham.

(2) *C. germari* is a relatively little-known species, but was found in two of the thirty-seven bodies of water which were studied. Each of these habitats had an inorganic substratum with margins sloping

*Present address—The Nature Conservancy, Merlewood Research Station, Grange-over-Sands, Lancashire

steeply into water 1 m. (3 ft.) or more in depth. This agrees with published information on the habitats of this species—Walton (1943), Crisp (1962a, 1962b).

(3) In general, the distribution of the species between the habitats agrees with the conclusion of Macan (1954), but the pattern of distribution does not emerge very clearly and there is a tendency for relatively large numbers of species to be found in many of the habitats. It is also noteworthy that the six most abundant species in Table 1 are species which are known to fly readily—Leston and Gardner (1953), Leston (1954), Lansbury (1960, 1961) and Brown (1951-2).

Macan (1962) suggests that the presence of a large number of species of corixids in an unstable habitat indicates the occurrence of considerable immigration by flight. It is also likely that there would be some obscurity in the distribution pattern of the Corixidae in an area where most of the bodies of water were unstable and the population of these insects was, in consequence, highly mobile. It is, therefore, possible that the distribution of the species between the habitats studied reflects the fact that most of the water bodies in County Durham are of small size and probably subject to drying up, temporary deoxygenation, and sudden changes caused by the activities of man and domestic livestock.

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The work was done in the Durham Colleges' Zoology Department whilst the author held a research studentship from the Department of Scientific and Industrial Research.

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TABLE 1

LIST OF SPECIES, TOGETHER WITH TOTAL NUMBERS
OF SPECIMENS COLLECTED

Species	Total number collected	Number of habitats
<i>Corixa distincta</i> (Fieb.)	398	18
<i>C. praeusta</i> (Fieb.)	221	18
<i>C. lateralis</i> (Leach)	198	5
<i>C. sahlbergi</i> (Fieb.)	177	17
<i>C. nigrolineata</i> (Fieb.)	167	15
<i>C. dorsalis</i> (Leach)	166	21
<i>C. punctata</i> (Illig.)	92	19
<i>C. fossarum</i> (Leach)	82	7
<i>C. semistriata</i> (Fieb.)	49	5
<i>C. limitata</i> (Fieb.)	40	6
<i>C. concinna</i> (Fieb.)	32	4
<i>C. falleni</i> (Fieb.)	24	7
<i>C. linnei</i> (Fieb.)	15	6
<i>C. germari</i> (Fieb.)	7	2
<i>C. dentipes</i> (Thoms)	1	1
<i>Cymatia bonsdorffi</i> (C. Sahlb.)	1	1

TABLE 2
SUMMARY OF WATER BODIES STUDIED

Habitat number	reference	Altitude (ft.)	Area (m ²)	Maximum depth (m)	Bottom material	Enriched by farm animals	Vegeta- tion
1	NZ/342430	300	1200	0.7	P,C	+	Je
2	NZ/277461	250	55	1.3	C,S	+	Je
3	NZ/345424	375	75	1.0	C,M	?	Je,R
4	NZ/216304	250	40	0.3	C,M	+	Gr
5	NZ/356427	500	6	0.7	M,S,L	?	L
6	NZ/261463	300	170	1.4	M	+	Gr,Ca
7	NZ/273415	175	30	1.0	M,L,C	+	Gr,Je,T
8	NZ/290415	150	7500	1.0+	Sa,C,S		P,M
9	NZ/290415	150	20	1.3	C,S,L		
10	NZ/265465	250	2250	1.3+	C,S		
11	NZ/285460	175	1500	1.3+	C		T,P
12	NZ/274474	200	675	2.0+	C,A		Gr
13	NZ/285460	175	12	1.0	L		T,P
14	NZ/318366	300	15	1.0	C,M		P,R
15	NZ/283435	125	170	1.3	M,C,A	+	P
16	NZ/318367	300	300	0.7	M		P
17	NZ/343385	450	3000	1.0+	C,P,A		P,Je,L
18	NZ/339431	350	1000	0.5	P,L		
19	NZ/318365	300	300	1.3	C,P,A		P,Je,R
20	NZ/339432	350	20	0.7	P		
21	NZ/318369	300	15	1.0	C,P,A		Gr,P,R
22	NZ/233448	250	10000	1.0	M,L	?	Gl,Je,Eq
23	NZ/264495	350	6000	0.6+	C,L		Je
24	NZ/330408	300	625	1.3	M,L	?	Je,El
25	NZ/330408	300	—	0.7	C	?	Ca
26	NZ/277388	100	8000	2.0+	M,L		N,Je,Ph,T
27	NZ/276416	150	2	1.0	L		El,Eq,T,Cl
28	NZ/276416	150	0.3	0.2	M		
29	NZ/271463	275	12	0.3	C	+	Gr
30	NZ/282368	350	75	0.7	C,M	+	
31	NZ/345424	375	50	0.3	M	?	Gr,Je
32	NZ/345424	375	50	0.1	M	?	Gr,Je
33	NZ/345424	375	50	0.1	M	?	Gr,Je
34	NZ/345424	375	75	1.0	M	?	Gr,Je
35	NZ/277451	225	6000	0.3	M,L		Gr
36	NZ/216303	250	500	0.3	M	?	T
37	NZ/339431	350	600	0.7	M		Gr

KEY TO ABBREVIATIONS:

- (a) Bottom materials:—P=pit debris, C=clay, S=stones, M=mud, Sa=sand, A=ashy material, L=dead leaves and other vegetation.
- (b) Plants:—Je=*Juncus effusus*, Ji=*J. inflexus*, L=*Lemna minor*, Ca=*Callitriche aquatica*, Gl=*Glyceria fluitans*, Eq=*Equisetum limosum*, T=*Typha latifolia*, P=*Potamogeton natans*, R=*Ranunculus* sp., N=*Nuphar luteum*, Gr=submerged grass, Ph=*Phragmites communis*, Cl=*Cladium mariscus*, El=*Elodea* sp. M=*Myriophyllum* sp.

TABLE

SPECIES ANALYSES OF THE COLLECTIONS: NO CORIXIDAE
BUT NOT INCLUDED

Water body	Date	<i>C. punctata</i> (Illig.)	<i>C. fossarum</i> (Leach)	<i>C. sahlbergi</i> (Fieb.)	<i>C. linnei</i> (Fieb.)	<i>C. dorsalis</i> (Leach)	<i>C. falleni</i> (Fieb.)	<i>C. distincta</i> (Fieb.)
1	25.2.57	3	—	—	—	2	—	—
2	5.2.57	2	—	—	—	3	—	9
3	28.2.57	30	9	—	—	2	10	189
4	18.3.57	1	—	—	—	—	—	—
5	25.2.57	—	—	1	—	1	—	—
6	7.10.56	—	—	—	—	2	—	—
7	19.3.57	—	—	23	—	—	—	—
8	15.10.56	—	—	—	—	16	5	3
8	14.7.58	—	—	—	—	10	1	1
9	15.10.56	5	1	10	4	1	—	1
9	24.1.57	14	—	7	3	2	—	1
10	19.10.56	1	—	1	—	—	—	1
11	5.2.57	8	—	—	1	2	—	—
12	4.12.56	4	—	4	—	3	—	1
13	5.2.57	—	—	6	—	5	—	—
14	13.2.56	—	—	—	—	9	—	1
15	1.11.56	2	20	—	—	—	1	75
16	26.11.56	—	—	2	—	—	—	—
17	11.2.57	—	—	2	—	35	2	1
18	25.2.57	1	—	2	—	—	—	—
19	13.12.56	—	—	—	1	19	2	—
20	25.2.57	—	—	—	—	—	—	—
21	26.11.56	2	1	—	—	42	3	1
22	6.2.57	1	—	—	—	3	—	—
23	9.2.57	2	—	38	5	2	—	—
23	16.8.57	2	—	5	—	—	—	10
24	13.2.57	7	—	2	—	4	—	1
25	13.2.57	1	—	—	—	2	—	1
26	5.11.54	3	17	54	—	—	—	25
26	4.5.55	3	17	13	—	—	—	21
26	1.10.56	—	17	1	1	1	—	56
27	14.2.57	—	—	6	—	—	—	—
28	7.6.57	—	—	—	—	—	—	—
Totals		92	82	177	15	166	24	398

3

WERE FOUND IN HABITATS LISTED IN TABLE 2,
IN THIS TABLE

<i>C. praenusta</i> (Fieb.)	<i>C. concinna</i> (Fieb.)	<i>C. nigrolineata</i> (Fieb.)	<i>C. lateralis</i> (Leach)	<i>C. semistriata</i> (Fieb.)	<i>C. limitata</i> (Fieb.)	<i>C. germari</i> (Fieb.)	<i>C. dentipes</i> (Thoms)	<i>Cy. bonsdorffi</i> (C. Sahlb.)	Totals
—	2	4	178	—	—	—	—	—	189
2	18	2	—	—	—	5	—	—	41
1	—	94	2	3	31	—	—	—	371
1	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	2
7	—	1	—	—	1	—	—	—	11
1	—	5	—	—	—	—	—	—	29
—	—	—	—	—	—	—	—	—	24
10	—	—	—	—	—	2	—	—	24
2	—	—	—	23	—	—	—	—	47
2	—	2	—	14	—	—	—	—	45
—	9	7	16	—	1	—	—	—	36
—	—	1	—	—	—	—	—	—	12
2	—	6	—	—	—	—	—	—	20
—	—	—	—	—	—	—	—	—	11
1	—	8	—	—	1	—	—	—	20
—	—	10	1	7	5	—	—	—	121
2	—	—	—	—	—	—	—	—	4
—	—	—	—	—	—	—	—	—	40
—	—	19	—	—	—	—	—	—	22
—	—	—	—	—	—	—	—	—	22
—	—	2	—	—	—	—	—	—	2
5	—	—	—	—	—	—	—	—	54
—	—	4	—	—	—	—	—	—	8
6	—	—	—	—	—	—	—	—	53
—	—	—	—	2	—	—	—	—	19
2	—	—	—	—	—	—	—	—	16
5	—	—	1	—	—	—	—	—	10
61	—	—	—	—	—	—	1	—	161
86	—	—	—	—	—	—	—	1	141
25	3	—	—	—	—	—	—	—	104
—	—	—	—	—	1	—	—	—	7
—	—	2	—	—	—	—	—	—	2
221	32	167	198	49	40	7	1	1	

THE GREY SEALS OF THE FARNE ISLANDS

Report for the period 1 October 1961 to 30 September 1962

by

J. C. COULSON, B.Sc., PH.D. and GRACE HICKLING, M.A.

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INTRODUCTION

The Nature Conservancy again made a grant to the Society, enabling further observations to be made on the Farne Islands colony of the grey seal *Halichoerus grypus* (Fabr.), and this report deals briefly with the results obtained. The Council wishes to thank all those who carried out the actual field work: these included C. M. Adamson, C. Almond, Miss S. Appleby, M. Baker, Miss D. N. Bell, Dr. and Mrs. Carruthers, Miss D. Cowell, Mr. and Mrs. Dale, G. Dobeson, W. J. Douglas, Mr. and Mrs. Gibson, Miss C. Greenwell, Mrs. Haden, J. Haden, A. Hingston, T. Morgan, B. Mortimer, J. Neesham, Rev. D. A. Quine, J. Ratcliffe, J. Richardson and W. Shiel, as well as students from the Zoology Department of the Durham Colleges. In addition, many members made frequent, but unsuccessful attempts to get out to the islands and their contribution was no less valuable than those who were in the more fortunate parties.

SEASONAL BEHAVIOUR

Counts of seals from October 1961 to September 1962. Owing to bad weather only nine counts were made and the numbers present (given

in Table 1) never reached the totals recorded in the previous period (July 1960 to September 1961: Coulson and Hickling, 1962). The number on 29 June 1962 is the lowest recorded since 1956, the year in which counts were first made. On 27 June 1956, 132 seals were seen while another small count—255—was on 4 July 1960: on all these three days there was a moderate northerly swell and on 29 June 1962 this increased rapidly, making it impossible to approach the outlying islands closely. The swell, and the fact that it was neap tide, meant a considerable reduction in the area of rock exposed at low water and only four of the animals counted were hauled out.

The count on 30 October was made when the breeding season was well under way. Unfortunately, the weather deteriorated rapidly as the wind increased from the south, making counting difficult. Moreover, the Callers, Knivestone and South Goldstone remained awash. The position of the hauled-out seals on Staple Island and the Harcars had changed in the preceding 24 hours: on 29 October, following a strong northerly wind, 52 (all cows) were near the South-east Hole on Staple while 200-250 were on the south side of the Harcar. Next day the group near the Hole had disappeared, although a new-born calf was on the nearby rocks and 12 cows were on the adjacent flat. On the Harcar only 16 animals remained scattered on the south side while at least 400 were on the north.

Blind bull. On 27 January a blind bull was hauled out on the south beach of the South Wamses. Despite the noise made in crossing the shingle two observers approached to within 12 feet and noted that he seemed to be in good condition. At first sight his eyes appeared normal, for there was no sign of the white film which sometimes covers one or both eyes (Hickling, 1962). Closer examination with binoculars showed, however, that the left eyeball was much enlarged while the right one was affected to a lesser extent.

THE BREEDING SEASON

Spread of the breeding season. On 13 October there were no seals on Staple Island, while on the North Wamses, although a bull and two cows were on the rocks on the east side, there was no sign of a calf. The next visit was on 29 October, by which time 127 calves had been born. On Staple Island the oldest calf was thought to be 12-14 days old (moult had started on its muzzle). Among those on the North Wamses was one which was three-quarters moulted; its age was estimated at 14+ days and it may well have been born soon after the last visit.

TABLE 1
COUNTS OF SEALS PRESENT THROUGHOUT THE YEAR

Island	1961		1962						
	Oct. 13	Oct. 30	Feb. 21	Apr. 25	May 5	June 29	July 9	July 20	Aug. 29
1 { Megstone ...	40	6	—	4	2	50	140	100	44
1 { South Goldstone	36	—	—	3	17	—	—	—	—
2 { Inner Farne ...	—	—	—	—	—	—	—	—	—
2 { Wideopens ...	7	—	—	—	—	7	—	—	9
2 { Scarcars ...	26	25	1	90	2	15	14	45	35
2 { The Bush ...	12	—	—	—	26	—	—	—	—
3 { Staple Is. ...	2	12	3	—	—	—	—	—	—
3 { Gun Rock ...	3	—	—	—	—	—	—	—	—
3 { Brownsman ...	2	—	540	—	—	1	—	—	—
3 { South Wamses	1	—	490	—	—	—	—	—	—
3 { North Wamses	4	80	2	130	—	—	2	—	3
3 { Nameless Rock, Sandbags and Roddam & Green	4	—	65	206	—	—	—	—	—
4 { Big Harcar ...	25	416	67	20	—	6	—	4	8
4 { Little Harcar ...	—	—	—	—	—	12	—	—	4
4 { Blue Caps ...	—	3	—	—	—	16	—	—	14
5 { Northern Hares	1	—	95	318	—	—	—	—	—
5 { Longstone End	235	3	—	3	300	90	195	1	93
5 { Longstone (E. side)	62	—	—	125	12	—	—	295	5
6 Knivestone ...	200	—	—	160	450	—	290	450	84
7 { Crumstone, Calf & Little Rock	300	50	275	229	315	—	160	240	112
7 { Callers	145	—	—	13	99	—	—	—	115
Total ...	1105	595 ¹	1538	1301	1223	197	801	1135	526
Wind ...	Light & variable	S-SW 3-4	SE 1	SE 2	SE 2	N 3-4	SE 2-3	SW 3	W-NW 2-3
Swell ...	—	N (slight)	N (slight)	SE (slight)	—	N (moderate, increasing rapidly)	—	S (slight)	—
Tide ...	2 days after high spring	Neap	High spring	Half-way between spring and neap	High spring	Taking off from neap	Neap	Spring	2 days before high spring
Time of low water	1130	1245	1015	1250	1015	0710	1435	1130	0930
Time of count	1035	1100	1000	1245	1000	1025	1350	1015	1100
	-1215	-1300	-1200	-1405	-1200	-1120	-1600	-1435	-1230

NOTE: ¹ Breeding animals are not included in this total.

As usual more than half of the calves were born before mid-November and breeding had practically ceased by the end of the third week in December. On 27 January 1962 there were no calves on Staple Island, Brownsman or the North Wamses, although there was one, aged about 14 days, on the South Wamses. It was, accordingly, surprising to see four young seals on the breeding islands on 21 February. Two were on Staple Island, the first on the rocks above the South-east Hole and the second well up on the flat: they subsequently returned to the water. The other two were on Brownsman—one above Pinnacles Haven and the other near the beacon lighthouse. Both were rather undersized female second coaters and were probably at least four weeks old for, after a while, they went off into the sea. It seems unlikely, therefore, that they were born subsequent to the January visit.

As in previous years there was a marked difference between the date by which the first half of the calves had been born on the four breeding islands; Brownsman and the South Wamses being about a week behind Staple Island and the North Wamses. (Table 2).

TABLE 2

THE DATE BY WHICH THE FIRST 50% OF THE CALVES HAD BEEN BORN
ON EACH OF THE BREEDING ISLANDS

Staple Island	...	...	6 November
North Wamses	...	...	8 November
South Wamses	...	...	14 November
Brownsman	...	...	16 November

Calves on the Crumstone and Harcar. On 30 October a calf was seen, with a cow, well up on the east side of the Crumstone and, according to W. Shiel, there was a similar birth in 1960. These are unusual occurrences, for although both Selby and Bolam mention calves on the Crumstone, this island is an unsuitable breeding site and, so far as is known, there are no recent breeding records (Hickling, 1962). The fate of the 1961 calf is unknown, but it may well have been swept away by the north-east gales of early November. In recent years breeding has taken place sporadically on the Big Harcar and on 10 November 1961 three calves, all first coaters, were on the north side.

Calf population and mortality rate in 1961. Counts of both live and dead animals were again made on the main breeding islands and these results have been used to compile Table 3. Births on these islands

totalled 1,137, giving a known total for the Farnes of 1,141. 204 calves were found dead. The average mortality rate for the main breeding islands was 17.9%, which is a slight increase on the mortality in 1960.

TABLE 3

CALF POPULATION AND MORTALITY RATE, 1961
NUMBER OF CALVES (ALIVE AND DEAD) BORN BETWEEN VISITS

Date of visit	Brownsman	Staple Island	North Wamses	South Wamses
29.10.61	1	95	28	3
1.11.61	2	41	1*	*
9.11.61	38	169	*	*
10.11.61	5	8	4*	*
16.11.61	37	117	319	37
17.11.61	7	5	*	*
24.11.61	*	*	35	23
25.11.61	*	*	4	—
1.12.61	64	52	*	*
18.12.61	14	8	*	*
19.12.61	*	*	12	7
27.1.62	—	—	—	1
No. born	168 (228)	495 (517)	403 (224)	71 (43)
No. found dead on island	22 (27)	114 (109)	60 (29)	8 (1)
Percentage mortality	13.1% (11.8%)	23.0% (21.1%)	14.9% (12.9%)	11.3% (—)

Percentage mortality for four main breeding islands, 1961 = 17.9% (16.3%)

NOTES (1) An * indicates that no landing was made on that day.
(2) 1960 figures, where applicable, are given, for comparison, in brackets.

MARKING CALVES

Tagging. This was again carried out on the tail, most of the animals being marked by the method used in 1960 (Coulson and Hickling, 1962). On 25 November a new type of tag was used: this is a cattle ear tag, made of nylon, and consisting of two rectangular strips, $1\frac{3}{8}$ ins. by $\frac{3}{8}$ ins., joined at one end by a short, thick pin which is inserted through the flesh, so allowing free movement of the strips. Only

27 calves were marked and, unfortunately, none has yet been recovered. The reduction in the total number tagged—459 compared with 815 in 1960—is largely due to the fact that one of us (J.C.C.) was unable to visit the islands as frequently as in previous years.

Finding of stainless steel tag. In July 1962 one of the original tags—Hancock Museum No. 13—was found, below high water mark, among shingle in the North Cove of the Brownsman. It had been put on a calf on the east beach on 1 November 1952 (Telfer and Watt, 1953) and, except for the disappearance of the original high polish, was in perfect condition. It is impossible to say what had happened to it during the intervening nine years.

Recoveries. Details of all recoveries, together with sight records of tagged or colour-marked Farne seals, are given in Table 4. Among these are four more foreign recoveries—three from Norway and one from Holland—while at least two of the animals found in this country were over a year old.

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TABLE 4

RECOVERIES OF FARNE MARKED SEALS

(a) ANIMALS WHOSE TAG NUMBERS WERE READ

No.	Date marked	Recovery details	Date recovered
5356	5.11.59	Portsoy, Banffshire. Tags found in salmon stake nets (75 weeks)	mid-Apr. 1961
6017	24.11.60	Marske-by-the-Sea, N. Yorks. (58 weeks)	26.12.61
6286	29.10.61	Isle of May (17 weeks)	24.2.62
6336	17.11.61	Longhoughton, Northd. Found dead (3 weeks)	3.12.61
6340	29.10.61	Eyemouth, Berwickshire. Found dead in salmon nets (13 weeks)	28.1.62
6356	14.12.60	Off Farne Is. Found dead in seine net (60 weeks)	10.1.62
6410	29.10.61	Bamburgh, Northd. Found dead (7 weeks)	12.11.61
6416	9.11.61	6½ m. E. of Berwick-on-Tweed. Drowned in salmon drift net (15 weeks)	21.2.62
6422	"	Altens, nr. Girdle Ness, Kincardineshire. Drowned in salmon bag net (17 weeks)	1.3.62
6430	"	Filey, N. Yorks. (8 weeks)	31.12.61
6431	"	Usan, nr. Montrose, Angus. Shot (10 weeks)	17.1.62
6436	"	Aberdeen. Found dead (9 weeks)	5.1.62
6445	"	6 m. E. of Arbroath, Angus. Caught in drift net (19 weeks)	13.3.62
6447	"	Portsoy, Banffshire (9 weeks)	6.1.62
6449	"	Nr. Crail, Fife (6 weeks)	16.12.61
6455	1.11.61	Holy Island, Northd. Probably dead (18 weeks)	6.3.62
6457	18.12.61	7 m. off Berwick-on-Tweed. Caught in drift net (10-14 weeks)	Feb. 1962
6458	1.11.61	5¼ m. E.N.E. of Burnmouth, Berwickshire. Drowned in salmon drift net (17 weeks)	28.2.62
6476	"	Hartlepool, Co. Durham (14 weeks)	1.2.62
6487	"	Firth of Forth. Tag found (13 weeks)	29.1.62
6494	"	Gåsvear, Solund, Norway (61°11' N, 4°41' E). Caught in trammel net (14 weeks)	3.2.62
6526	10.11.61	Nr. Johnshaven, Kincardineshire. Drowned in salmon bag net (18 weeks)	7.3.62
6529	"	Nr. Skegness, Lincs. (15 weeks)	15.2.62
6530	"	Eyemouth, Berwickshire. Found entangled in lobster pot (18 weeks)	9.3.62
6531	"	Off Coquet Is., Northd. Drowned in salmon drift net of <i>Harvest Queen</i> (35 weeks)	ca. 7.7.62
6535	"	Marsden, nr. South Shields, Co. Durham. Destroyed (5 weeks)	10.12.61

TABLE 4—continued

No.	Date marked	Recovery details	Date recovered
6561	29.10.61	Whalsay, Shetland. Found dead (10 weeks)	1.1.62
6565	"	(1) Oosterland, Wieringen, Netherlands. Climbed dyke and found in pasture 1½ m. inland (6 weeks)	2.12.61
		(2) Found on jetty, W. Terschelling, Netherlands	29.12.61
6610	10.11.61	Ratray Head, Aberdeenshire (15 weeks)	17.2.62
6624	"	Off south-east coast of Norway (58°13' N, 2°15' E). Caught, dead (15 weeks)	21.2.62
6632	18.12.61	Solsvik på Sotra, Norway (60°26' N, 4°58' E). Caught in trammel net (9 weeks)	2.2.62
6634	17.11.61	Seaton Sluice, Northd. Caught in net; cut free and returned to sea (12 weeks)	4.2.62
6636	"	Nr. Montrose, Angus. Found dead (6 weeks)	25.12.61
6650	"	Filey, Yorks. (7 weeks)	{ 29.12.61 31.12.61
6652	"	Isle of May (15 weeks)	25.2.62
6670	"	5 m. off Eyemouth, Berwickshire. Drowned in salmon drift net (22 weeks)	mid-Apr. 1962
6676	18.12.61	Skegness, Lincs. (5 weeks)	4.1.62
6678	"	Sunderland, Co. Durham. Destroyed (6 weeks)	16.1.62
6736	17.11.61	5 m. off St. Abb's Head, Berwickshire. Drowned in salmon drift net of <i>Star Divine</i> (20 weeks)	4/5.4.62
6748	"	85 m. N.E. by N. of Humber Lightvessel. Caught, dead, by M.V. <i>Dormy</i> (18 weeks)	17.3.62
6765	16.11.61	Balmedie, Aberdeenshire. Drowned in salmon bag net (32 weeks)	19.6.62
6770	17.11.61	(1) Whitby, Yorks. Found, surrounded by fox tracks and with small wound. Swam away (6 weeks)	24.12.61
		(2) Marske-by-the-Sea, N. Yorks.	26.12.61
		(3) South Gare, R. Tees estuary	{ 27.12.61 28.12.61
6771	"	Redcar, N. Yorks. (6 weeks)	27.12.61
6806	18.12.61	10 m. off Sandefjord, Veierland, Norway. Caught in fishing net (3-7 weeks)	Jan. 1962
6820	17.11.61	5 m. off Montrose, Angus. Killed in salmon drift net (18 weeks)	19-23.3.62
6830	29.10.61	Seaham Harbour, Co. Durham. Body found entangled in trawl net (18 weeks)	1.3.62

NOTE: Approximate age at time of recovery is given in brackets. Unless otherwise stated all animals have been recovered alive and in a number of cases are known to have returned to the sea.

TABLE 4—*continued*

(b) SIGHT RECORDS OF TAIL-TAGGED OR COLOUR-MARKED ANIMALS

Place	Date seen
(i) <i>On the Farnes (tail-tagged)*</i>	
Knivestone 1, Callers 2 (1960)	13.10.61
Brownsman's Gut 1 (probably 1960)	2.5.62
Knivestone 1 (1960)	5.5.62
Staple Island 1	12.5.62
Scarcars 1 (1960)	29.6.62
The Bush 1, Longstone End 1, Blue Caps and Little Harcar 3	6.7.62
Knivestone 1, Megstone 1	9.7.62
Longstone (east side) 1	20.7.62
Knivestone 2, Callers 1	29.8.62
* Unless otherwise stated all were 1961 calves.	
(ii) <i>Away from the Farnes (tail-tagged)</i>	
R. Tyne, South Shields. 1 frequented area near outlet of main sewer	June to Oct. 1961
Gourdon, Montrose. 1 seen swimming in harbour	6-7.1.62
Isle of May. At least 2 hauled out on shore	25.2.62
„ 1 hauled out on shore	30.8.62
(iii) <i>Away from the Farnes (red colour-marked)</i>	
Seahouses. 1 seen swimming in harbour	17.12.61
Scarborough, Yorks. 1 seen travelling along footpath of Marine Drive	2.1.62

(c) UNIDENTIFIABLE RECOVERY

Letter, dated 27.3.62, received at London Zoo, recording seal recovered 7 m. N.E. of Coquet Is., Northd. Number not mentioned, and tag lost in post.

Supplementary Report: the 1962 breeding season

by

J. C. COULSON, B.Sc., PH.D., and GRACE HICKLING, M.A.

The period 1 October 1962 to 31 March 1963 was exceptionally stormy and only nine visits could be made to the Farnes. As a result, although the latter part of the breeding season was covered reasonably adequately, there were no field observations for the five weeks from 20 October to 25 November, the period during which most of the births occurred. This fact, combined with an unexpected delay in the publication of the 1961-62 report, has led to the decision to add a brief supplementary report dealing with (1) pre-breeding season behaviour, (2) calf population and mortality rate, (3) tagging and (4) recoveries of marked animals between 1 October 1962 and 30 April 1963. Results of four counts of hauled-out seals are also included (Table 1).

Pre-breeding season behaviour. Visits were made on 19 and 20 October, when three calves had already been born, but there were still comparatively few adults near the nursery islands—on 19 October, for example, the total was seven bulls and 19 cows. Next day the numbers had risen to 29, of which at least nine were bulls. On the first day two bulls were in the water off Staple Island, but by the following day, when the first calf had been born on this island, both were on shore and the cows had increased from four to eight. These observations give further confirmation to the belief that, at the Farnes, adults haunt the breeding islands for only a short period before births commence while bulls do not come ashore permanently until about the time that the first calf appears.

Calf population and mortality rate in 1962. Births on the four main breeding islands totalled 1,116 (see Table 2) while 169 calves were found dead. This gives an average mortality rate, for these islands, of 15.1%. In addition, two calves were born on Big Harcar.

TABLE 1
COUNTS OF HAULED-OUT SEALS (1 OCTOBER 1962 — 30 APRIL 1963)

Island	1962			1963
	Oct. 3	Oct. 19	Oct. 20	Apr. 26
1 { Megstone ...	93	43	34	4
South Goldstone	—	—	—	—
2 { Inner Farnes ...	—	1	1	—
Wideopens ...	—	5	30	1
Scarcars ...	16	31	25	62
The Bush ...	—	—	—	30
3 { Staple Is. ...	1	6	10	—
Gun Rock ...	1	—	—	2
Brownsman ...	2	1	6	—
South Wamses ...	1	—	—	—
North Wamses ...	93	18	13	—
Nameless Rock, Sandbags and Roddam & Green	5	6	12	—
4 { Big Harcar ...	—	270	{ 275	{ 325
Little Harcar ...	—	135		
Blue Caps ...	72	114	56	—
5 { Northern Hares	30	—	1	—
Longstone End	280	384	220	4
Longstone (E. side)	10	—	—	130
6 Knivestone ...	32	9	6	290
7 { Crumstone, Calf & Little Rock	148	232	144	433
Callers ...	3	1	2	26
Total ...	787	1256	835	1307
Wind ...	W	N	—	S
	2	1-2		light
Swell ...	—	N	N	S
		(slight)	(slight, increasing rapidly)	(slight)
Tide ...	3 days after spring	3 days after spring	4 days after spring	High spring
Time of low water ...	1215	1335	1415	1100
Time of count ...	1150	1135	1150	1100
	-1410	-1430	-1535	-1250

TABLE 2

CALF POPULATION AND MORTALITY RATE, 1962

NUMBER OF CALVES (ALIVE AND DEAD) BORN BETWEEN VISITS

Date of visit	Brownsman	Staple Island	North Wamses	South Wamses
19.10.62	—	—	1	—
20.10.62	—	1	1	—
25.11.62	256	501	*	*
27.11.62	6	2	226	39
4.12.62	20	21	4	9
6.12.62	3	1	*	*
22.12.62	11	3	3	5
28.1.63	1	—	—	2
No. born	297 (168)	529 (495)	235 (403)	55 (71)
No. found dead on island	47 (22)	83 (114)	30 (60)	9 (8)
Percentage mortality	15.8% (13.1%)	15.7% (23.0%)	10.6% (14.9%)	16.3% (11.3%)

Percentage mortality for four main breeding islands, 1962 = 15.1% (17.9%)

NOTES (1) An * indicates that no landing was made on that day.
(2) 1961 figures, where applicable, are given, for comparison, in brackets.

Tagging. 297 calves were tagged, 157 with nylon cattle ear tags. Several animals marked with these nylon tags have been recovered and in all cases this new method of marking seems to have been satisfactory. The tags themselves were in good condition, while the original wound, made when the tag was inserted (into the caudal fold, not the tail) had healed cleanly. This fact, together with speed and ease of application, suggests that their use may well be extended.

Recoveries of marked seals — 1 October 1962 to 30 April 1963. Table 3 gives details of 23 seals recovered during this period: it also includes sight records of tagged animals. Among the recoveries are four whose tag numbers were read by lightkeepers on the Isle of May, but one of these readings, which appears to be that of a 1961 calf, is open to doubt and is being rechecked. No. 6643 is an interesting recovery, for yearlings are seldom found among the breeding animals.

TABLE 3

RECOVERIES OF FARNE MARKED SEALS

(a) ANIMALS WHOSE TAG NUMBERS WERE READ

No.	Date marked	Recovery details	Date recovered
6617	10.11.61	Fifth buoy light, middle of R. Tees (55 and 58 weeks)	25.11.62 12.12.62
6643	17.11.61	Staple Is. Hauled out on rocks (55 weeks)	4.12.62
6718	25.11.62	Isle of May (8-9 weeks)	6.1.63
6735	"	Nr. Broughty Ferry, Angus. Shot (23 weeks)	26.4.63
6789	"	Isle of May (9 weeks)	21.1.63
6849	27.11.62	Aberdeen. Shot near salmon net (14 weeks)	13.2.63
6860	4.12.62	Merie, Balmedie, Aberdeenshire. Found in salmon stake net (15 weeks)	20.2.63
6861	"	Seaburn, Sunderland, Co. Durham. Washed up dead (8 weeks)	2.1.63
6870	"	Catterline, Kincardineshire. Found, with another (untagged) seal, in salmon bag net (16 weeks)	27.2.63
6871	"	3 m. S.E. of Johnshaven, Kincardineshire. Found drowned in cod net of M.B. Rosemary (13-14 weeks)	4.2.63
9211	22.12.62	Johnshaven. Killed in salmon bag net (13 weeks)	21.2.63
9217	"	Lunan Bay, Angus. Killed in salmon fly net (17 weeks)	2.4.63
A 012	25.11.61	Isle of May (60 weeks)	25.1.63
A 040	25.11.62	3 m. S.E. of Scurdy Ness, Montrose, Angus. Drowned in cod net (14 weeks)	19.2.63
A 043	"	Mouth of R. Tweed. Found, probably dead (13 weeks)	4.2.63
A 046	"	Newtonhill, Kincardineshire. Caught in salmon bag net (14 weeks)	19.2.63
A 071	"	Tentsmuir Sands, Tayport, Fife. Found dead (8 weeks)	13.1.63
A 086	27.11.62	Den Helder, Netherlands. Found, starving and exhausted, on sea-dyke (9 weeks)	12.1.63
A 107	25.11.62	Catterline. Killed in salmon bag net (18 weeks)	26.3.63
A 129	"	Newtonhill. Caught in salmon bag net (19 weeks)	22.3.63
A 132	"	Isle of May (13 weeks)	15.2.63
A 145	"	Lunan Bay. Shot in salmon fly net (14 weeks)	22.2.63
A 153	"	Peterhead, Aberdeenshire. Seen in harbour of refuge (7 weeks)	7.1.63

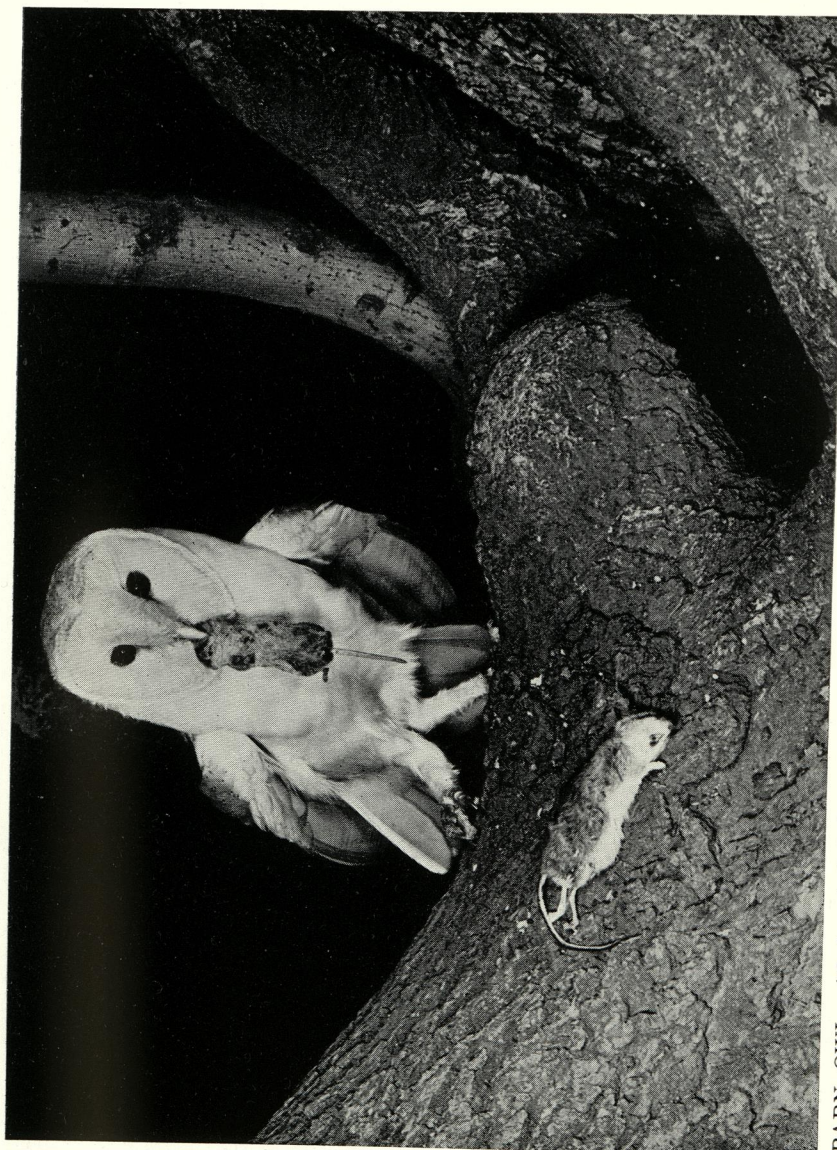
TABLE 3—continued

(b) SIGHT RECORDS OF TAIL-TAGGED ANIMALS

Place	Date seen
<i>On the Farnes*</i>	
Crumstone 2, Big Harcar 1, Longstone End, 1 N. Wamses 1 (1960)	19.10.62
Crumstone 1, Big Harcar 1	20.10.62
Longstone 1	28.4.63

* Unless otherwise stated all were 1961 calves.

FIG. 7



Photograph by James Alder

BARN OWL with long-tailed field mice

ORNITHOLOGICAL REPORT FOR NORTHUMBERLAND AND DURHAM FOR 1962

Compiled from the notes and records of members of
the Natural History Society of Northumberland,
Durham and Newcastle upon Tyne, the Teesmouth
and Tyneside Bird Clubs, and other observers

by

D. G. BELL, B.A.

INTRODUCTION

No detailed summary of the ornithological year as a whole is given in this introduction, as it is hoped that the general picture will emerge from the individual items: they have been written with this in mind. (The need for economising space has been very pressing.) It will, however, be helpful to draw attention to some of the salient features. These include spells of unusual cold, with prolonged ice and widespread deep snow which extended into January and started again in December; the cold, late spring, with consequent late arrival of summer-migrants and delayed nesting; the unprecedented March "wreck" and August concentration of fulmars; the absence along the coast, in early autumn, of any noticeable fall of "drift" migrants or of grounded outgoing summer visitors, and the large immigration in October (especially on 11 October) of many kinds of birds from the continent.

Thanks to increasingly intensive watching, a comparatively large number of rarities was seen, but, once again, many reports were not sufficiently detailed. To improve this situation a special form for the submission of unusual records has been devised and a specimen is circulated with this report.

The special joint records committee for the two counties, formed in 1962, this year consisted of Messrs. E. L. Arnold, J. C. Coulson, C. E. Douglas, P. Evans, B. Little, J. D. Parrack and P. J. Stead. I am extremely grateful to these gentlemen for their invaluable help, and must again sincerely thank the many observers who submitted records and made the report possible; their names are listed after the ringing recoveries. A special word of thanks must go to Mr. M. Bell, of the Tyneside Bird Club, who copied a phenomenal number of records on to the cards.

It should be noted that in this report, first, the word "Durham" refers to the county only and, second, the symbol † indicates a record accepted by the *British Birds* Rarities Committee.

CLASSIFIED NOTES

1. Black-throated Diver *Gavia arctica*

Reported frequently off the Northumberland coast, but again none in Durham. All records refer to the first 5 and last 4 months of the year. 2, in partial summer plumage, were at Holy Island on 22 Apr. (ER), and 1, in full plumage, was at Beadnell on 24 May (JSA).

2. Great Northern Diver *Gavia immer*

Ones and twos often seen in Northumberland in the first 4 and last 3 months of the year. 1 at Holy Island on 22 Oct. was still in summer plumage (DGB). Only Durham records: 1 at Hartlepool on 12 May (RTM) and 1 at Crimdon Dene on 13 Oct. (FGG, ECG, PJS).

4. Red-throated Diver *Gavia stellata*

Present all the year in both counties and numbers as high as usual. The biggest counts were off Cresswell in Dec. (up to ca.80: MM, IH), but ca.40 were off Ross Links on 7 Apr. (BG, BL) and 36 off Alnmouth on 20 Oct. (DGB). 1 stranded on ice at Swallow Ponds on 24 Dec. (IH) was the only diver of any species reported inland.

5. Great Crested Grebe *Podiceps cristatus*

2 young reared in Northumberland and 1 in Durham, a third nest in Northumberland being unsuccessful. Non-summer records give a total of some 15 individuals in both counties, mostly on the coast.

6. Red-necked Grebe *Podiceps grisegena*

Seen in the usual north Northumberland coastal haunts at beginning and end of the year. Last spring record: 2 off Ross Links on 7 Apr. (BG, BL). First autumn record: 1 in Holy Island harbour on 6 Sept. (JMB, CED). 1 in full breeding dress on Cowpen Marsh on 6 May (ECG, JKS) was a most unusual occurrence. In Oct., 1 stayed a fortnight near South Shields pier (FGG, JAB) and, from 10 Oct. to 30 Dec., 2 or more were seen irregularly at Teesmouth (BU, JAB, PJS). 3 appeared off Seaton Sluice on 12 Dec. (DC, PG).

7. Slavonian Grebe *Podiceps auritus*

A few in north Northumberland in Jan. and Feb., but ca.45 were off Ross Links on 24 Mar. (JMB), most of which were still present on 7 Apr. (BG). Isolated autumn reports include 1 at North Gare 13-21 Oct. (PJS, ECG, IM)—the only Durham record for the year.

8. Black-necked Grebe *Podiceps nigricollis*

No reports.

14. Storm Petrel *Hydrobates pelagicus*

1 on Billingham Pond during a westerly gale on 29 Oct. was watched for 10 minutes at ranges down to 8 feet. First thought to be a house-martin, it later showed its dark underparts, webbed feet and square tail (PD).

16a. Manx Shearwater *Procellaria puffinus puffinus*

Seen intermittently in Northumberland Mar. to June, but movement increased in July and remained fairly heavy until Sept. Over 100 flew north off Holy Island on 12 Sept. (ER), but the biggest movement appeared to be on 8 Aug., when 183 flew north off Cresswell in 9 hours (BE) and 34 off Hartley in 2 hours (SRS, RMW). 2 records for Oct. and 2 for Nov. In Durham, where birds passed between 12 May and 13 Oct., the heaviest movement was also on 8 Aug., when 97 flew north off Souter Point in 2½ hours (JAB). Numbers in both counties were, however, far fewer than last year. Most birds flew north.

16b. Balearic Shearwater *Procellaria puffinus mauretanicus*

Specimens of this west Mediterranean race of the Manx shearwater were identified flying north on the following dates:

8 Aug.: 1, Cresswell (BE)

15 Sept.: 1, St. Mary's Island (JDP)

18 Sept.: 2, St. Mary's Island (SRS, RMW, JDP)

19 Sept.: 1, St. Mary's Island (JDP)

In addition to the above, a bird, which was apparently of this race, flew north at Seaham on 18 Sept. (ES)—very possibly 1 of the birds seen the same day in Northumberland.

19 Great Shearwater *Procellaria gravis*

2 flew south at St. Mary's Island on 7 Aug. (JDP) and 2 or 3 flew north at Cresswell on 8 Aug. (BE).

20. Cory's Shearwater *Procellaria diomedea*

1† flew north-west at Holy Island on 11 Sept. (LPA).

21. Sooty Shearwater *Procellaria grisea*

7 Aug.: 5, Hartlepool (RTM) and 1, Hartley (SRS, RMW)

8 Aug.: 1, Hartley (SRS, RMW) and 2, Cresswell (BE)

18 Aug.: 2, Souter Point (JAB)

21 Aug.: ca.12, Hartlepool (RTM)

22 Aug.: ca.12, Hartlepool (RTM)

23 Aug.: 3, Hartlepool (RTM)

26 Aug.: ca.15, Hartlepool (PJS, JAB) }

27 Aug.: 4, Hartlepool (RJL, CB) }

These birds were doubtless attracted by the wreck of sprats upon which they were seen feeding along with fulmars.

18 Sept.: 24, Hartlepool, in a force 6 NW-NE wind (AV, AJV, IM) and 1, St. Mary's Island (SRS, JDP, RMW)

19 Sept.: 1, Hartlepool (JVH)

7 Oct.: 1, St. Mary's Island (DGB)

15 Oct.: 1, St. Mary's Island (CED)

10 Nov.: 4, Cresswell (MM)

11 Nov.: 1, Hartlepool (PJS, JKS)

26. Fulmar *Fulmarus glacialis*

8 dead fulmars washed up at Seaton Sluice in late Feb. were the first evidence in the 2 counties of the widespread, unprecedented "wreck" of this species. On 2 Mar., 19 more (with some kittiwakes) were found between Seaton Sluice and

Meggie's Burn, all but 1 in good condition (MM, IH). On 4 Mar., 3 were found near Seaton Carew (ECG) and in subsequent weeks odd birds were found along most of the tideline of both counties. Just before the "wreck," numbers were noticeable close inshore, including a small percentage of dark birds, which also figured in the totals of dead ones. On 26 May, 284 flew north at Hartlepool (RTM, PHar) and over 89 at St. Mary's Island (CED), but unprecedented numbers passed Hartlepool in Aug. Here, apart from 95 on 7 Aug., few were seen until 19 Aug. when numbers began to increase. On 21 Aug., in a force 4-5 west wind, ca. 1,400 flew north and ca. 200 south; on 22 Aug. in a force 5-6 west-north-west wind, ca. 1,800 flew north and ca. 250 south; on 23 Aug. birds were feeding and difficult to count, but in a force 3 south-west wind ca. 1,000 flew north and ca. 200 south. Movement was not noted during the next few days (south-west wind continuing), but was resumed on 26 Aug. when, after a "low" approached from the west, the wind was south, later south-west, force 7; at 1015 a flock of over 500 flew south and thereafter, at a rate of ca. 30 per minute, a total of 7,500-8,000 flew south before 1630. Next day, one-minute counts every 15 minutes throughout the whole of the watching period (0850-1650) gave an average of ca. 47 per minute: some 21,000 birds, perhaps more, must have flown north in the force 6 north-west wind. A few dark fulmars are included in the above totals, maximum 5 on 26 Aug. On this date 164 flew north in one hour off St. Mary's Island (JDP), the only Northumberland movement which could be correlated with the above. There can be no doubt that the concentrations of 26-27 Aug. were due to the wreck of sprats in the Tees Bay at that period.

The species was recorded every month. On 14 June, 10 sitting birds in the Kyloe Hills (PRE).

27. Gannet *Sula bassana*

Recorded every month. Northerly movement began early—ca. 20 per hour at Seaton Sluice on 17 Feb. (MM)—and from Apr. until Sept. (except in June) frequently involved hundreds of birds. Biggest count on 8 Aug., when 1,087 flew north, and 19 south, at Cresswell (BE).

28. Cormorant *Phalacrocorax carbo*

At least 34 on Marsden Rock on 17 July, including 12 sitting on nests (DGB). On 1 Mar., at Crimdon Dene, ca. 230 shags and/or cormorants flew south in 2 flocks; some were immature cormorants, but the rest were not specifically identified (ES). On 11 Mar. flocks of 10 and 50 cormorants flew south at Hartlepool (PR). Only inland record: 1 at Holywell Ponds on 7 Apr. (SRS, RMW).

30. Heron *Ardea cinerea*

No bird seen at the Durham colony before 7 Apr.—much later than usual—and the number of pairs subsequently noted showed a further decline: on 7 May 8 nests contained young (VFB). At the Northumberland colony, birds were also late in returning; broken eggshells on 19 May indicated 1 occupied nest, but no young were seen (AJC). On 27 June, 2 adults accompanied a recently-fledged juvenile on Holy Island (LDJ), where other birds were seen intermittently throughout the year. The biggest concentration reported was 12 on Cowpen Marsh on 19 July (ECG).

37. Little Bittern *Ixobrychus minutus*

An immature, found dead on 13 Oct. below telegraph wires at Fishes Stead, 2 miles south of Etal in north Northumberland, was sent by the Hon. M. E. Joicey to the Hancock Museum, where it was identified by G. W. Temperley.

38. Bittern *Botaurus stellaris*

1 on a pool at Ryal, near Hexham, on 25 July (ELA, JA), was first seen a few days earlier by Mr. and Mrs. Crump.

45. Mallard *Anas platyrhynchos*

On 28 Jan., Colt Crag Reservoir, Sweethope Lough, Fontburn Reservoir and Gosforth Park held a total of 2,130 (BG, JDP). Over 500 birds twice recorded at Holywell Ponds and at least 7 broods reared there. In the Tees estuary, peak numbers for beginning and end of year were 366 on 24 Mar. (ECG) and 600 on 14 Nov. (PJS). During a marked northerly movement of duck on 18 Nov., 198 passed Hartlepool and 275 Cresswell.

46. Teal *Anas crecca*

Largest concentrations of the year were ca. 400 in Gosforth Park at the end of Aug. (BG) and 285 at Holywell Ponds on 11 Nov. (JDP). Some 200 flew north in a duck movement at Teesmouth on 13 Oct. (DGB), but the species was noticeably scarce there by the end of the year. In Northumberland, 8 young reared from a nest of 11 eggs (JMB).

47. Garganey *Anas querquedula*

Rather late in arriving: a pair at Hurworth Burn on 15 Apr. (JAB). Thereafter, up to 3 occurred on Cowpen Marsh and up to 4 on each of 4 Northumberland waters. Last recorded—2 at Gosforth Park on 4 Sept. (SRB). No breeding records.

49. Gadwall *Anas strepera*

1 or 2 occurred at Newton, Havannah and Cresswell Ponds, Gosforth Park, Hallington Reservoir, and at Teesmouth. Records refer to Apr., May, Aug., Sept., Oct. and Dec. Altogether not more than 10 birds involved: fewer than last year.

50. Wigeon *Anas penelope*

Peak numbers were again on Fenham Flats—several thousand at beginning and end of the year—but birds were present in every month. Northerly movement in autumn, especially on 16 Sept., 13 Oct. (ca. 400 at Hartlepool), 30 Oct. and 18 Nov.

51. American Wigeon *Anas americana*

A drake seen regularly with wigeon at Holywell Ponds 24 Feb.-25 Mar. was found by SRS and RMW, and seen subsequently by many other observers; on 6 and 8 Mar. it was on the sea off Hartley (DGB, MB, PJS). This individual may well have been the bird glimpsed at Holywell Ponds in Dec. 1961 and thought to have been an American wigeon (AJ). The only previous Northumberland occurrence was a drake shot on Fenham Flats on 8 Nov. 1951.

52. Pintail *Anas acuta*

Records for all months except June. Maximum: ca. 15 on Fenham Flats on 13 Oct. (FS). These had arrived in the duck movement noted on that day all along the coast. Next in size was a flock of 8 in the Tees estuary on 9 Sept.

53. Shoveler *Spatula clypeata*

No reports until 11 Feb., when a pair at Hurworth Burn (BU, ES), but thereafter widely distributed and in good numbers. Durham maximum was 14 on Cowpen Marsh in Aug., but Gosforth Park had 70 or more in Aug. and Sept. (ER, BG) and Holywell Ponds 50-60 in Nov. and Dec. (CED, AB). A brood of 9 was the largest recorded from 5 known nests in Northumberland (RC).

55. Scaup *Aythya marila*

Recorded in every month, but exceptional numbers on 18 Nov.: a total of 788 flew north with other duck at Hartlepool in 8 hours in a northerly gale (PJS, JKS)—the largest movement of this species ever recorded at Teesmouth—while 861 flew north in 6 hours at St. Mary's Island (JDP) and 484 at Cresswell (MM). On the same day scaup appeared inland at Crookfoot Reservoir (PJS) and Whittledene Reservoir (CMA). Birds occurred on 6 other inland waters throughout the year.

56. Tufted Duck *Aythya fuligula*

Highest counts reported were:

Whittledene Reservoir: ca.188 in Jan. (TW, ER, SRB)

Gosforth Park Lake: ca.160 in Jan. (ER, SRB)

Holywell Ponds: ca.120 in Mar. (AB)

Bolam Lake: 85 in Dec. (AM, CMA)

Hartburn Lake: 50 in Apr. (CMA)

Crookfoot Reservoir: 38 in Apr. (RTM)

Hurworth Burn Reservoir: 32 in Feb. (ES)

A count at 17 Northumberland waters on 25 Feb. gave a total of 313 (Tyneside B.C.). More coastal records than formerly, maximum 29 flying north at Hartlepool on 13 Oct. 25 young reported in Durham and 19 in Northumberland.

57. Pochard *Aythya ferina*

Seaton Burn again produced the biggest numbers—ca.180 in early Mar. (ER)—but up to ca.100 occurred at Holywell Ponds and Gosforth Park. A count at 17 Northumberland waters on 28 Feb. gave a total of 196 (Tyneside B.C.) Seen coastally on 5 dates. On 5 Nov., a remarkable flock of 90-100 flew south at Seaham in a fresh south-east wind and was counted 3 times as it flew by at about 80 yards range (ES). On 18 Nov., the day of the largest Durham inland concentration of the year, 23 flew north at Cresswell in 4 hours (MM) and 44 were on Crookfoot Reservoir (PJS).

60. Goldeneye *Bucephala clangula*

Recorded in every month except June. 22 was the biggest single inland flock, but a count at 17 Northumberland waters on 28 Feb. gave a total of 67 (Tyneside B.C.). Northerly movement off St. Mary's Island in Nov. included 70 in 4 hours on 10 Nov., and 98 in 6 hours on 18 Nov., the latter count including a flock of 24 (JDP). Also on 18 Nov., 46 flew north at Hartlepool.

61. Long-tailed Duck *Clangula hyemalis*

A wintering party off Seaton Carew reached a peak of 10 on 20 Jan. (DGB, PJS), the largest single flock recorded in the Tees Bay for 20 years. Apart from this flock, there are no records for either county between 6 Jan. and 3rd Mar., when

44 (the biggest 1962 count) were off Stag Rocks (JMB). Very scarce for the rest of the year. A few occurred in Greatham Creek in spring (6 individuals in Mar.) and autumn. Only inland record: 1 on Fishburn Lake 13-18 Nov. (ES, DGB).

62. Velvet Scoter *Melanitta fusca*

Most records in July and Nov., and none for Feb., May, or June. Apparently absent from Durham in the first half of the year. By far the biggest concentration was ca.30 on the sea off Stag Rocks on 4 Nov. (ELA).

64. Common Scoter *Melanitta nigra*

Present in every month, greatest numbers in July-Aug. when northerly movement was a regular feature. Largest counts were:

15 July: ca.700 in Cresswell Bay (MM, BE, IH)

25 July: ca.450 flew north off Hartley (SRS, RMW)

26 July: 365 flew north off Hartley (SRS, RMW), 331 off Seaham (ES) and 335 off Hartlepool (RTM)

7 Aug.: ca.580 flew north off Hartlepool (RTM, RJL)

Inland records: 2 at Holywell Ponds 26-27 Feb. (BE, SRS), 4 on Smiddyshaw Reservoir on 11 Aug. (ES), 1 at Crookfoot Reservoir on 14 Oct. (DGB) and 1 on the Tyne at Howdon on 6 Nov. (DC).

67. Eider-Duck *Somateria molissima*

The Seaton Sluice flock reached a peak of 75 on 4 Nov. (FGG), but over 500 occurred in the Holy Island area (ER, PRE). At Teesmouth, eiders were only absent June-Sept., maximum 17 in Dec. (ALC, DSS). Others flew north there and at Seaham. A pair successfully bred on the Northumberland mainland.

69. Red-breasted Merganser *Mergus serrator*

Recorded in every month except June; maximum 29 at Bamburgh on 18 Mar. (RSR, RMW). In Durham, Crimdon Dene again proved the most attractive wintering place for this species, with a peak of 18 in Feb. (ES).

70. Goosander *Mergus merganser*

3 broods (9 young) seen in Northumberland. On 28 Jan., 49 on Colt Crag Reservoir, 23 on Fontburn Reservoir, 14 on Whittledene Reservoir and 6 on Sweethope Lough, gave a total (92) higher than any count in recent years (JDP). In contrast, there are only 5 isolated Durham records for the year, 4 of them coastal and all lone birds except 3 in Greatham Creek on 30 Dec. (PJS).

71. Smew *Mergus albellus*

A pair on Greenlee Lough on 20 Jan. (BG, MM, IH). A "redhead" there, and a drake on Whittledene on 3 Feb. (IH, ER), may have been the same birds. Greatham Creek: a drake on 27 Mar. (DWS) and a "redhead" on 30 Dec. (PJS).

73. Sheld-Duck *Tadorna tadorna*

Recorded in every month. The Tees estuary remains the wintering stronghold, but the peak of 648 on 10 Feb. (ECG) was well below recent maxima. Only 2 broods (15 young) seen there and 4 (29 young) in Northumberland. 9 near Hexham on 22 July were presumably on moult migration, and 1 at Grindon Lough on 18 Feb. was perhaps returning after moulting (AJC).

75-78. Grey geese sp.

Noticeably scarce in Durham, even in Oct. when many hundreds are usually reported. A skein of *ca.*200 over South Shields on 6 Dec. (FGG) was by far the biggest. 22 geese flying at tree-top height over Stocksfield on 5 June were certainly "grey," but the species was not determined (GAC).

75. Grey Lag-Goose *Anser anser*

Some 220 flew in to Holburn Moss on 1 Jan. (SRS, RMW) and in the Rothbury area numbers reached a peak of *ca.*300 in early Apr. (IH). On 18 Oct., *ca.*60 flew in to Fenham Flats (FS) and *ca.*300 were seen near Wooler on 30 Nov. (LDJ). Smaller numbers elsewhere in Northumberland, but none definite in Durham.

78a. Bean Goose *Anser arvensis arvensis*

Up to 14 occurred at Grindon Lough Jan.-Mar. (ELA, JAB, SRB) and on 18 Feb., 17 at Sweethope Lough (BE, IH, CW). On 9 Dec., 26 reported at Colt Crag (IH).

78b. Pink-footed Goose *Anser arvensis brachyrhynchus*

Majority seen flying overhead Jan.-Feb. and Oct.-Dec., but 2 feeding with the bean geese at Grindon Lough in Jan. (ELA). First autumn record: 1 passing Whitburn on 17 Sept. (ES).

80. Brent Goose *Branta bernicla*

The usual Holy Island flock reached *ca.*600 in Jan. (SRS, RMW) and Dec. (RN). Away from that area the only reports were 2 passing North Gare on 3 Feb. (ECG), a strong-flying bird in Greatham Creek on 22 June (GST) and 2 passing St. Mary's Island on 11 Nov. (MM).

81. Barnacle-Goose *Branta leucopsis*

2 flew north at St. Mary's Island on 24 Apr. (DTP, RMW). On 12 Oct., 47 on Fenham Flats were later joined by about 20 more and at dusk they all mounted high and set off westwards (FS). 3 flew north over the Tees estuary on 13 Oct. (DGB, ALC).

82. Canada Goose *Branta canadensis*

Northumberland records include: Sweethope Lough (up to 30), Colt Crag Reservoir (22), Hallington Reservoir (24), Newton Bog, Holywell Ponds and Gosforth Park Lake. The records are too numerous to detail, but there is undoubtedly some overlapping. In Durham, 14 flew in over the Tees estuary from the direction of Hartlepool on 23 June (BT).

84. Mute Swan *Cygnus olor*

6 nests reported in Northumberland and 2 in Durham: at least 5 young reared. Big counts were *ca.*150 in Budle Bay in Jan. (FC, AB) and 176 on Fenham Flats in Oct. (FS). A herd of 58 flying south at Seaton Carew on 8 Dec. (ECG) is the largest ever recorded at Teesmouth. Odd birds on the sea at Seaton Sluice (6 Jan.) and Tynemouth (8 May), and 6 at Seaham (22 July).

85. Whooper Swan *Cygnus cygnus*

The regular Fenham Flats herd reached 150 or more at the beginning and end of the year. Inland, maxima were 28 at Hallington Reservoir on 25 Feb. (RMTG, WBB) and 30 on Grindon Lough on 4 Nov. (RG, EL). None seen between 16 May

(a lingering bird in the Hazelrigg area) and 11 Sept. (4 at Beal), except for a disabled bird at Hartburn, Northumberland, in Aug. (MGR). 2 at Hurworth Burn in Nov. and 1 at Seaham in Dec. (ES).

86. Bewick's Swan *Cygnus columbianus*

Up to 12 at Holy Island Jan.-Mar. (ER, BL), where an early bird was noted on 19-20 Oct. (ER, DGB). 1-3 occurred on the Northumberland lakes in Feb.-Mar. and 1 at Blaydon Ponds on 8 Dec. (FC, PG, DC). Hurworth Burn showed 2 in Feb.-Mar. (ES, BU) and 4 on 24-26 Dec. (ES, DGB), while 8 others visited the Reclamation Pond, Teesmouth, on 26 Dec. (PJS).

Eagle sp.

A bird that had wintered in the Cheviots was reported to B. Little in Apr.: it had been seen by several people.

91. Buzzard *Buteo buteo*

Lone birds seen several times in west Northumberland in Mar., Apr. and June. Isolated reports came from Gosforth Park, Staward Peel, Bamburgh and the Kylee Hills. Only Durham record: 1 over Hartlepool on 26 Sept. (BU, ECG).

93 Sparrow-Hawk *Accipiter nisus*

The odd reports from the Newcastle area, Dipton, Ashington, Lowick, Hartburn, Rothbury, Hurworth Burn, Turisdale, Fishburn and Teesmouth total more than in 1961. It is to be hoped that the full legal protection recently accorded this interesting species will produce further records, including some breeding ones.

95. Kite *Milvus milvus*

A specimen† of this magnificent bird of prey was watched soaring near Belford on 20 Apr. (CS, DCS).

98. Honey-Buzzard *Pernis apivorus*

1 at Tranwell, near Morpeth, on 4 Nov. (BL).

99. Marsh-Harrier *Circus aeruginosus*

1 over the Tyne at Hexham on 18 Mar. (JMB); 1 at Gosforth Park on 4 May (CW, TW) was considered a different bird from 1 on 6 and 11 May at Holywell Ponds (CED); 1 at Cowpen Marsh 12-14 May (PHar, RTM, ECG, IFS) was considered different from 1 there on 23 June (ECG, PHar); of 2 at Cresswell on 18 Aug. (ER, BE, BL) 1 was later found shot and taken to the Hancock Museum (JDP), while the other lingered in the area until 22 Aug. (TW, GDS, JMB). No year this century has produced so many records—involving 7 individuals—of this rare raptor.

100. Hen-Harrier *Circus cyaneus*

A "ring-tail" at Greenlee Lough on 3 Feb. (SRB, ER), and also seen near Haydon Bridge.

103. Osprey *Pandion haliaetus*

1, mobbed by rooks, flew over Chester-le-Street at roof-top height on 29 May (JAB). During the third week of May, 1 hunted Usway Burn, south of The Cheviot (per BL). At dawn on 14 July, 1, which was flying west, joined the

S.S. *Leda* about 1 hour's sailing time from Tynemouth and later flew inland over the Marsden-Whitburn area (BL). Another at Berwick-on-Tweed on 16 July (CHB) and 1 at Brinkburn, in Coquetdale, on 7 Oct. (per JMC).

105. Peregrine Falcon *Falco peregrinus*

Only reports: 1 on Fenham Flats on 1 and 8 Jan. (MM, ER) and 21 Oct. (FS); 1 at the Reclamation Pond on 3 Mar. (DME, WA); 1 at Hurworth Burn on 24 Mar. (RJI); 1 at Hartlepool on 13 Oct. (JKS, ALC).

107. Merlin *Falco columbarius*

15 young successfully reared in Northumberland. Occurred fairly widely in winter.

110. Kestrel *Falco tinnunculus*

Over 30 passed south-west at Hurworth Burn in ca.45 minutes on 12 Aug. (ES). Near Greatham Creek 1 was filmed "anting" on 22 Sept. (VFB).

116. Partridge *Perdix perdix*

A white bird at Hack Hall on 25 Mar. (BE). 1 came in off the sea at Tynemouth on 29 Sept. (BE).

120. Water-Rail *Rallus aquaticus*

Records for 8 Northumberland and 2 Durham localities over 8 months of the year, maximum ca.30 in Gosforth Park in Jan. (BG, MB).

121. Spotted Crake *Porzana porzana*

1 found dead on Farne Islands on 28 July (GH). Another found dead at Greatham Creek by G. Youdale on 6 Oct. and identified by J. A. Bailey and P. J. Stead.

125. Corncrake *Crex crex*

Reports from some 9 localities in summer, but few confirmed.

126. Moorhen *Gallinula chloropus*

During the hard spell in Jan. single moorhens visited bird tables at Forest Hall and Killingworth (FC, BG). A bird found near Coxhoe on 17 Nov. had become entangled in a length of fishing-line which had finally severed one of its legs. The bird was in a pitiful condition and still trailed the tangled nylon, several thorny twigs and its completely severed leg. V. F. Brown was obliged to kill this bird, a sad victim of carelessness.

127. Coot *Fulica atra*

Maximum: 191 on Holywell Ponds in Sept. (CED). Bolam Lake showed a new peak of 147 on 14 Jan. (AM). Fishburn Lake had 69 in Oct. (DGB), the largest Durham count.

131. Oystercatcher *Haematopus ostralegus*

Again bred in the Tyne and Coquet valleys. A white oystercatcher reappeared at Seaton Sluice on 24 Apr. (SRS, RMW). The biggest flock was ca.500 on Seaton Snook on 7 Dec. (DGB).

134. Ringed Plover *Charadrius hiaticula*

Nesting reported at Holy Island, and in Coquetdale, where an early nest with 3 eggs was found on 24 Apr. (JDP, MB). From about the third week of May, greatly increased numbers at Teesmouth, with ca.400 on 27 May (RTM, JAB),

a date when flocks of 120 and 50 were at Alnmouth (PY). These are the biggest flocks of the year. 33 at Hurworth Burn on 25 May, and up to 10 at Tursdale 15-22 May, were part of the movement, which presumably consisted of northerly breeding birds on passage (see Ornithological Reports for 1960 and 1961). At St. Mary's Island, 35 on 30 Aug. was exceptional (JDP). At Teesmouth, the autumn peak was over 120 on 26 Aug. (JAB).

139. Grey Plover *Charadrius squatarola*

Scarce, ca.86 in Budle Bay on 24 Mar. (JMB) being easily the biggest concentration. Inland: 3 at Swallow Ponds on 4 Mar. (FC, PG).

143. Turnstone *Arenaria interpres*

Present in every month. Numbers in excess of 100 reported only from Holy Island, the Farnes and St. Mary's Island. Inland: lone birds at Hurworth Burn on 3 June (ES), Holywell Ponds on 6 Aug. (CED) and Whittledene Reservoir on 5 Sept. (ELA).

145. Common Snipe *Capella gallinago*

Flocks of 30, 100, and 20, flying north at North Shields on 21 Jan. (AB), were probably hard-weather migrants. In autumn, increase on inland ponds noted from the end of July, with a fresh influx in mid-August. Immigration in Oct. —seen at several coastal points—contributed to some large inland counts of which easily the biggest was 380 at Holywell Ponds on 11 Nov. (JDP).

147. Jack Snipe *Lymnocyrtus minimus*

Present Jan.-Apr., the last being 3 on Cowpen Marsh on 30 Apr. (RTM). An exceptional record was 1 at Ashington on 29 July (MM, BE), followed on 25 Aug. by 1 at Shotton, where the species was found in good numbers at the beginning and end of the year—maximum ca.15 on 8 Mar. (DWS).

148. Woodcock *Scolopax rusticola*

Maximum numbers seen at beginning and end of year, especially along the north Northumberland coast, where 105 shot in 5 days in Dec. (JMC).

150. Curlew *Numenius arquata*

250 flew in at dusk to the Tees estuary on 6 July (ALC). Over 300 at Holy Island in the autumn (DGB, ER).

151. Whimbrel *Numenius phaeopus*

First arrival at Teesmouth on 13 Apr. (GST) and others between 23 Apr. and 12 May: rather scarce, and only 4 spring records for Northumberland. Wide-spread in autumn, however; maximum 35 at Teesmouth in Aug. Late individuals in Greatham Creek on 7 Oct. (JAB) and at Holy Island on 21 Oct. (DGB).

154. Black-tailed Godwit *Limosa limosa*

1 flying north off Seaton Sluice on 18 Mar. (ER). Up to 7 on Cowpen Marsh between 15 Apr. and 16 May (JAB, PJS). 3 at Newsham, Northumberland, on 22 Apr. (JDP) and up to 5 at Grindon Lough between 23 Apr. and 13 May (AJC, ELA). In autumn, there are 7 reports between 25 July and 19 Sept.

156. Green Sandpiper *Tringa ochropus*

2 spring records: 2 at Holywell Ponds on 25 Apr. (JDP) and 1 on Cowpen Marsh 12-13 May (PHar, RTM). Occurred widely in autumn from 12 July until 14 Oct. (1 at Stanley: RMP). Usually in small numbers, but 10 near Coxhoe on 5 Aug. (ES). On 29 Dec., 1 was twice disturbed from a spring near Alnwick (EM).

157. Wood Sandpiper *Tringa glareola*

2 spring records: 1 on Cowpen Marsh 13-16 May (PHar, ECG) and 1 at Holywell Ponds on 27 May (CED). Numerous autumn records from 6 July until 1 Oct. (1 near Coxhoe); maximum 6-7 at Holywell Ponds and Cowpen Marsh in Aug.

159. Common Sandpiper *Tringa hypoleucos*

Seen daily from 20 Apr. Last record: 1 at Swalwell on 16 Oct. (JSB).

161. Redshank *Tringa totanus*

Some 1,000 on the ice-free Reclamation Pond on 6 Jan., during the bitter weather, probably represented most of the north Teesmouth population (VFB). In Oct., 600 frequented the same pool (PJS) and ca.180 St. Mary's Island—an exceptional concentration (JDP).

162. Spotted Redshank *Tringa erythropus*

1 at Holy Island on 25 Mar. (PRE) and 2 on Cowpen Marsh on 12 May (IFS, PHar). Numerous and widespread in autumn, from 14 July, with 10 or more at 4 localities. Last record: 1 at Teesmouth on 21 Oct. (PJS, ECG).

165. Greenshank *Tringa nebularia*

About 8 on spring passage from 10 Apr. to 22 May. Widespread in autumn, from 11 July (1 near Durham: ES). Up to 20 occurred at Teesmouth in late Aug. Last recorded on 13 Oct.: 1 at Tughall (WSC) and 1 near the Reclamation Pond (PJS).

169. Knot *Calidris canutus*

10,000-12,000 at Seaton Snook on 14 Jan. (JAB) is the largest Teesmouth count since 1953, though it does not far exceed the probable annual winter maximum. Inland: 2 at Holywell Ponds on 28 Jan. (AB) and 2 at Grindon Lough on 28 Apr. (CED).

170. Purple Sandpiper *Calidris maritima*

Well distributed along rocky coasts, but none between 20 May and 14 July. St. Mary's Island and Bamburgh were the most favoured haunts (up to ca.120 at each), but fewer reports than usual from Hartlepool.

171. Little Stint *Calidris minuta*

Only spring record: 1 on Cowpen Marsh on 20 May (ECG). Widespread, in small numbers (maximum 6 together), on autumn migration; occurred July to Oct., the last being a juvenile on the shore at Boulmer on 20 Oct. (DGB).

176. Pectoral Sandpiper *Calidris melanotos*

1† on Cowpen Marsh 12-17 Sept. (PJS, JAB, ALC, PR *et al.*).

179. Curlew Sandpiper *Calidris testacea*

Only spring record: 1 on Cowpen Marsh on 16 and 20 May (DME, WA, ECG). On 25 July a flock of 8 in summer plumage flew south, calling, at Seaham (ES). In Northumberland, a total of 11 or so occurred at Newbiggin, Cresswell and Whitley Bay. Teesmouth had up to 6 in Aug., but only 1 in Sept. and 1 on 13 Oct. (FGG, PJS).

181. Sanderling *Crocethia alba*

St. Mary's Island produced the biggest counts, with 110 in Mar. (AB).

184. Ruff *Philomachus pugnax*

A wintering bird at Bamburgh was seen Jan.-Mar. (ELA, BG). Spring records involve 6 birds, including 3 at Holywell Ponds on 11 Apr. (AB). Widespread from 15 July, a flock of ca.50 on the Reclamation Pond 16-19 Aug. (PJS, JAB) being the largest ever recorded at Teesmouth. In Northumberland, numbers over 20 occurred at Cresswell (MM, BE) and Boulmer (PRE). Last record: 1 off Seaton Sluice on 20 Oct. (MM, MB).

187. Grey Phalarope *Phalaropus fulicarius*

1 photographed at Cresswell Ponds on 4 Feb. (JMB). (The description of a phalarope at Seaham on 14 Dec. conforms to red-necked, except that no pale streaks were visible on the back (ES): it is relevant to note that there was a red-necked phalarope on the Yorkshire side of Teesmouth on 16 and 23 Dec.)

189. Stone Curlew *Burhinus oedicnemus*

1 seen feeding at Seaton Sluice on 16 Sept. (AB, PG). This is the first Northumberland record since 18 Aug. 1927, when 1 occurred on Whitfield Moor.

193. Arctic Skua *Stercorarius parasiticus*

1 harried a gull at Crimdon Dene on 2 Feb. (ES). Records include 5 in May, 2 in June, innumerable July-Oct., and several for Nov., the last being 1 at Tynemouth on 18 Nov. (BE, IH). In Northumberland, daily counts only exceeded 50 on 3 occasions, but at Hartlepool totals in the hundreds were recorded on at least 7 days in Aug. Attracted by the exceptional concentration of gulls (q.v.) in the Tees estuary, unusually high numbers of arctic skuas persisted there in the second week, with a peak of 150 on 26 and 28 Aug. (JAB, PJS); many of these birds were pale phase. During this period up to 35 occurred on the Reclamation Pond and 16 on Dorman's Pool and Cowpen Marsh (VFB, PHar). At Cullernose, on 29 July, an adult made several mock attacks on a collie dog engaged in rounding up sheep (WSC).

194. Great Skua *Catharacta skua*

Only spring record: 1 at St. Mary's Island on 4 Mar. (JDP). Autumn records refer to the period 14 July-18 Nov. In Northumberland, much the biggest count was 13 off Hartley on 12 Sept. (SRS, RMW). Numbers at Hartlepool, a place apparently unrivalled for skua movements, were exceptionally high: in Aug. alone, birds passed on at least 13 days, ca.95 flying north and ca.45 south on 22 Aug., while in Sept. up to 50 were seen in a day. One of the Hartlepool birds caught a kittiwake in mid-air and, helped by another "bonxie," drowned it and ate part of it (PHar, CB).

195. Pomarine Skua *Stercorarius pomarinus*

Innumerable records between 22 July (1 at Cresswell: MM, MB) and 18 Nov. (2 at Cresswell: MM). Northumberland records, though far fewer than the Durham ones, concern 17 days during this period, maximum 8 off Hartley on 12 Sept. (SRS, RMW). All the Hartlepool records are eclipsed by the passage of 26 Oct., when 195 flew south in the northerly gale; these birds passed singly, and in flocks up to 22, and included 3 dark phase (KB, ECG). In the north-westerly gale of 28 Oct., 5 flew up the Tees estuary past North Gare and disappeared over Middlesbrough (PJS), a phenomenon which has been observed before in similar conditions.

196. Long-tailed Skua *Stercorarius longicaudus*

An adult at Hartlepool on 26 Aug. and a juvenile (watched with arctics for 1½ hours at distances down to 15 yards) at North Gare on 2 Sept. (JAB). Off Seaham: a juvenile (with arctics) on 12 Sept. and an adult flying north on 20 Sept. (ES).

Gulls sp.

Attracted by the wreck of sprats, exceptional numbers of gulls thronged the Tees estuary in Aug., with a peak of at least 60,000 in the middle of the month (JAB, PJS).

199. Lesser Black-backed Gull *Larus fuscus*

A nest with at least 2 chicks on Marsden Rock on 14 July (DGB). Birds occurred in all months, but only in Northumberland in Jan.-Feb. and Nov.-Dec., when a few were regularly on the Tyne. 39 at Tursdale on 28 June (ES), and 20-30 on Seaton Snook on 16 Aug. (JAB), are new local records, but up to 70 occurred near Gosforth Park and Ashington (BG, CW, MM): at all seasons the species is undoubtedly more common in Northumberland than in Durham.

202. Glaucous Gull *Larus hyperboreus*

No records for Jan., May, June or July. Of 15 or so birds reported in other months, only 1 or 2 were fully adult. Noteworthy are 1 at Hartley on 15 Aug. (SRS, RMW) and 1 off Hartlepool on 21 Aug. (RTM).

203. Iceland Gull *Larus glaucooides*

A total of ca.8 seen in the first 6 months, unusual dates being 7 June, when an immature was at Holywell Ponds (JDP, CED, ELA), and 30 June, when a sub-adult was on the Tyne (BG, BL). In the second 6 months only 1 reported: off St. Mary's Island on 18 Sept. (JDP, SRS, RMW).

205. Mediterranean Gull *Larus melanocephalus*

The Hartlepool bird† was noted on 6 occasions between 1 Jan. and 24 Mar. On 16 Sept. it returned for its seventh consecutive winter there, being seen irregularly into 1963.

207. Little Gull *Larus minutus*

Hurworth Burn was drained in the summer, so there was little to attract *Larus minutus* and none was seen before Sept. However, some flood-water collected there in the autumn and the following counts were made:

9 Sept.: 25 (20 juv.)

10 Sept.: 35 (16 juv.)

13 Sept.: 10

16 Sept.: 6

18 Sept.: 10

23 Sept.: 15 (6 juv.)

25 Sept.: 3

4 Oct.: 1

7 Oct.: 5

9 Nov.: 1 (ES *et al.*)

The 1962 gathering was thus later than in 1961, owing, no doubt, to the earlier lack of water, but it is interesting to speculate where the birds were before Sept., for no alternative gathering place is known. At Seaham on 5 Nov., 27 (5 juv.) flew south in a fresh south-west wind between 1245 and 1330: the movement was still continuing when the observer left (ES). Others occurred in Mar. (1), Apr. (1), May (1), July (5), Aug. (10), Oct. (3) and Nov. (1). Records refer to both counties.

208. Black-headed Gull *Larus ridibundus*

Some 9 breeding colonies reported, but few nesting successes. At least 4 apparently melanistic individuals seen, and 1 trapped, in the Seahouses area Dec. 1961-Jan. 1962 (PRE, ELA *et al.*). (For details, see *Brit. Birds* 55, 216 and 275; 56, 115-116.) In contrast, an all creamy-white individual visited Fishburn Lake 13-18 Nov. Very faintly buffish on the wings, there was only a hint of the usual dark smudge behind the eyes, which were dark (ES, DGB, ECG, PJS).

209. Sabine's Gull *Xema sabini*

An adult† flew south at Hartlepool on 29 Sept. (PJS, ECG, PHar, CB).

211. Kittiwake *Rissa tridactyla*

A nest on the window ledge of a factory at Gateshead overlooking the Tyne (south bank) was 8½ miles (in a straight line) from the sea. 1 egg was laid and hatched successfully, the young bird (which was ringed) leaving the nest on 27 July. Neither parent was ringed so presumably had not come from the North Shields warehouse colony, which still flourishes (AM).

Some heavy northerly movements reported: on 12, 13, 24, 25 and 26 May, between 120 and 600 per hour off Seaton Sluice (RSR, RMW) and on 25 and 26 May at Beadnell (JSA); no return movement was seen on these days. Similar scale movement occurred off south Northumberland on 26 July, 7 Aug., 8 Sept. and 12 Sept.; on the last date 4,310 flew into a strong northerly wind in half an hour off St. Mary's Island in the evening (JDP). On 26 Oct., southerly passage at ca.3,500 per hour off St. Mary's Island in the morning reversed to ca.2,800 per hour heading north by late afternoon as the strong north-north-east wind moderated (JDP).

At least 6,000 congregated in the Tees estuary in Aug. and early Sept. (PJS, JAB).

212. Black Tern *Chlidonias niger*

1 on spring passage—in full plumage—on Cowpen Marsh on 4 May (NG, RTM, CB). From 27 July birds occurred fairly widely, the most favoured places being Tees-mouth where 65 congregated on 20 Aug. (RTM), and Cresswell, where up to 8 occurred in Aug. (BE). Last record: 8 on the Reclamation Pond on 6 Oct. (VFB, PE, PJS).

217 and 218. Common Tern *Sterna hirundo* and Arctic Tern *Sterna macrura*

The first was at Seaton Sluice on 7 Apr. (SRS), and the last at Marsden on 31 Oct., when *ca.* 20 flew north in half an hour (ES). Biggest numbers were in Aug. By evening on 5 Aug., Cresswell bay was filled with "many tens of thousands of mixed terns, making calculations almost impossible" (MM). Sweethope Lough was visited by 1 *S. macrura* in 19 May (TW) and Gosforth Park by 5 *S. hirundo* on 29 July (BG). 6 young successfully reared from 2 common tern nests far inland in Northumberland, while a pair of arctics nested on the mainland.

219. Roseate Tern *Sterna dougallii*

Away from the Farnes, where 2 still present on 13 Sept. (PRE), birds identified on numerous occasions May-Sept. Maximum: 8 flying south at Seaham on 25 July (ES).

222. Little Tern *Sterna albifrons*

First recorded on 23 Apr.—3 at Hartlepool and 1 in Greatham Creek (BU, PJS). 29 on Seaton Snook on 29 July (JAB) was by far the largest concentration reported, and there is only a handful of Northumberland records. Breeding attempted at 2 localities (1 in each county), but success is doubtful.

223. Sandwich Tern *Sterna sandvicensis*

5 birds in Mar., of which the first was 1 at Seaton Sluice on 26 Mar. (SRS, RMW). Last record: some 10 at Whitburn on 10 Oct. (ES). Bred on the Northumberland mainland.

226. Little Auk *Plautus alle*

1 found dead at Holy Island on 8 Apr. (BG). Single birds off Cresswell and St. Mary's Island on 10 Nov. (MM, JDP). No other records.

229. Black Guillemot *Cephus grylle*

5 records, all for Farne Islands.

232. Stock-Dove *Columba oenas*

Among the few records submitted, much the biggest concentration was 30-35 near Coxhoe on 11 Feb. (ES).

235. Turtle-Dove *Streptopelia turtur*

Reported from only 3 localities in each county. At a Durham site, the female of a pair was shot and found to contain an egg, but 2 other pairs succeeded in rearing a total of 3 young in the same area.

— Collared Dove *Streptopelia decaocto*

Reported from West Hartlepool (up to 27 resident in July: RMT), Sunderland (2: BU), Gosforth (2 or more: BL) and Hexham (2: JHA).

237. Cuckoo *Cuculus canorus*

2 reports for 21 Apr.—at Seaton Burn (ER) and Embleton (WSC). Others from 23 Apr., but again rather scarce.

241. Barn-Owl *Tyto alba*

3 pairs bred near Newcastle and 7 young fledged (ER). No other breeding reports, but birds occurred widely, if infrequently. Air-guns killed 2 at Sleekburn in Mar. (per JDP).

247. Tawny Owl *Strix aluco*

1 roosting on Holy Island on 8 Apr. (BG, BL). At least 1 young reared in Gosforth Park (BE, IH).

248. Long-eared Owl *Asio otus*

Up to 11 again seen in 1 of 3 Northumberland roosts. Another roost in south Durham contained up to 10 birds.

249. Short-eared Owl *Asio flammeus*

Widespread, particularly in Northumberland, and seen all months.

252. Nightjar *Caprimulgus europaeus*

Very few reports, but in south Durham 3 pairs and an odd male located: 2 of the pairs each reared 2 broods (JAB).

255. Swift *Apus apus*

Again arrived on 21 Apr.—1 at Swallow Ponds (IH); another on 22 Apr. at Newton (PRE). 2 northerly movements in July: on 1 July at Cresswell, 300 in 2 hours, ahead of a cold front over the North Sea (SRS, RMW) and on 11 July "hundreds" near Consett, ahead of an approaching thunderstorm (ES). Strong southerly passage first noted on 19 July at Craster (WSC). Late lingerers on 4 Oct. (1 over Cullernose: PRE) and on 9 Oct. (2 over Tynemouth: MM, IH).

263. Greater Spotted Woodpecker *Dendrocopos major*

Birds seen in Oct. and Nov., in coastal localities such as Sunderland, South Shields, North Shields, Tynemouth, Cullercoats, Cullernose Point, Holy Island and Berwick, not normally frequented by this species, are perhaps referable to the northern form. Unfortunately, few beak or plumage details accompany these records, but the persistence of red on the crown as late as 28 Oct. on 1 of the Tynemouth birds is rather suggestive of *D. m. major* (MGR).

264. Lesser Spotted Woodpecker *Dendrocopos minor*

Seen at intervals in a south Northumberland wood, including a pair in April. No other records.

273. Shore-Lark *Eremophila alpestris*

5 wintered at Teesmouth from 24 Dec. 1961 until 4 Mar. 1962 (ECG *et al.*).

274. Swallow *Hirundo rustica*

First noted on 14 Apr.: 1 in Coquetdale (BE, FC, PG); 2 on 18 Apr. and more thereafter. A roost of *ca.* 1,000 in reeds in Gosforth Park in late summer (ER, BG). A bird, which was white except for brown head, back and rump, feeding with swallows and martins near Wingate on 9 Sept. (DWS). On 4 Nov., a late bird at Cullernose (PRE) and another, or the same, at Whitley Bay (JDP).

276. House-Martin *Hirundo urbica*

First noted on 14 Apr.: 1 in Coquetdale (FC); others on 20 and 22 Apr. Birds arrived late at the Cullernose cliff-nesting colony, only 1 being observed by 13 May (WSC). However, 137 nests were counted there on 22 July, most apparently occupied (JDP). Late lingerers at Cullernose on 1 Nov. (PRE) and near Cramlington on 3 Nov. (MM).

277. Sand-Martin *Riparia riparia*

1 near Lemington on 28 Mar. (per BL) and 1 at St. Mary's Island on 5 Apr. (JDP), but no others until 15 Apr., and none in Durham before 20 Apr. There are 2 late records: 1 at Gosforth on 1 Oct. and 1 at Cullernose on 23 Oct. (PRE).

278. Golden Oriole *Oriolus oriolus*

A male near Wooler on 26 June (AE).

279. Raven *Corvus corax*

Of 10 nests reported, 6 successfully produced young and 4 were robbed.

280. Carrion-Crow *Corvus corone corone*

A roost of over 120 at Shotton in Feb. (DWS). 38 young reared from 11 nests near Newcastle (FC). At Fontburn, on 25 Nov., a party of 5 tried unsuccessfully to outmanoeuvre and catch a small bat (BE).

281. Hooded Crow *Corvus corone cornix*

A few (maximum flock: 5) at Teesmouth, and in Northumberland, in the early months. The description of a bird seen regularly at Cresswell from 8 July (SRS, RMW *et al.*) corresponds to hybrid *cornix* x *corone*, and another near Beadnell on 8 July was possibly also a hybrid (PRE). Surprisingly scarce at the end of the year, only 4 lone birds reported—at Crimdon Dene, South Shields, Whitley Bay and Seaton Delaval—and these were merely on passage.

282. Rook *Corvus frugilegus*

The new Haymarket (Newcastle) colony had 5 occupied nests by 31 Mar., increasing to 16 in Apr. (RMP). Several tens of thousands flew west in the evening of 9 Dec. at Riding Mill—in one long straggling flock (MM, BE).

289. Blue Tit *Parus caeruleus*

Evidence of autumnal movement again. On 26 Sept., after a day of arrival of drift-migrants, 16 were in Whitley Bay cemetery and 25 at the Collingwood Monument, Tynemouth (JDP). At Monk's House, 7 on 29 Sept. heralded a period of movement lasting until 6 Oct., birds coasting both north and south in small numbers (PRE).

293. Willow-Tit *Parus atricapillus*

Nested near Newcastle and Thorpe Thewles.

296. Nuthatch *Sitta europaea*

Reports from Durham City, Castle Eden Dene, and Shotton, but a pair with young near Barnard Castle (GAC) is the only breeding record.

302 and 304. Fieldfare *Turdus pilaris* and **Redwing** *Turdus musicus*

Some stayed late: ca.30 fieldfares at Gosforth Park on 3 May (FC) and 35 redwings at Hartley on 12 May, feeding on stubble (JDP). In autumn, the first arrivals were single birds: fieldfare on Holy Island on 10 Sept. (ER) and redwing near Earsdon on 29 Sept. (JDP), but no very big influx was apparent until 11 Oct.; on this date thousands arrived all along the north-east coast. Accurate counting was impossible, but some random figures were: ca.1,400 fieldfares and ca.8,000 redwings in fields at Hartley (ER); over 2,000 came in off the sea at Seaton Sluice in 25 minutes; a peak of ca.100 per minute just after noon at Crimdon Dene, mostly redwings, but also including some fieldfares, blackbirds and other passerines (ES). On 27 Dec., ca.29,000 redwings were estimated to fly north at Whitley Bay (JDP), as did "thousands" at Seaham next day (ES), the movement continued at Whitley Bay, and at Cresswell, and was still in progress on 29 Dec.

307. Ring-Ouzel *Turdus torquatus*

On 11 Oct., during the immigration of other *Turdidae*, 3 appeared on Holy Island, 1 at Monk's House, 1 at Cullernose, 1 at Hartlepool and 1 at North Gare—presumably Scandinavian birds.

308. Blackbird *Turdus merula*

On 1 Jan. a bird at Darlington had the upper mandible projecting upwards at right angles to the lower. The tongue was used a great deal in feeding—almost as a substitute for the upper mandible. Berries were taken very rapidly and the bird was pugnacious and in fine condition, despite its remarkable deformity (VFB).

311. Wheatear *Oenanthe oenanthe*

1 at Seaton Burn on 31 Mar. (ER, SRB) was the first, and 1 at North Shields on 11 and 14 Nov. (AB, ER) the last.

317. Stonechat *Saxicola torquata*

2 pairs bred successfully on the Northumberland coast.

320. Redstart *Phoenicurus phoenicurus*

1 at Horden on 21 Apr. (BU) and elsewhere on 24 Apr. Of several late records, single birds at Whitley Bay cemetery on 13 Oct. (TW), Tynemouth on 14 Oct. (MGR), and Holy Island on 21 Oct. (DGB) were probably Scandinavian birds.

321. Black Redstart *Phoenicurus ochruros*

Some 9 individuals reported in Mar.-Apr. and Sept.-Oct. Only 1 in Durham.

324. Bluethroat *Cyanosylvia svecica*

1 at St. Mary's Island on 27 Sept. (IH); a first-winter bird trapped at Hartlepool on 12 Oct. (PR, RTM, PJS, DGB).

325. Robin *Erithacus rubecula*

In Apr. an influx of robins showing characteristics of the continental race *E. r. rubecula* was observed; for example, ca.35 at St. Mary's Island on 17 Apr., 37 at Hartlepool on 19 Apr., at least 20 on Inner Farne 17-20 Apr. and 12 ringed at Monk's House on 20 Apr. (PRE, SRS, RMW *et al.*). Even larger numbers in autumn, coincident with the thrush immigration, were probably also continental.

333. Reed-Warbler *Acrocephalus scirpaceus*

First heard at the Northumberland breeding site on 12 May (MGR). On 13 Oct., 1 trapped at Fenwick (ABI) and another reported near Seghill (AB). In view of the notable influx of birds from the continent on that date these were almost certainly continental birds.

343. Blackcap *Sylvia atricapilla*

Three records of wintering birds visiting bird-tables or gardens: a female at Longhorsley until early Mar. (PO per ELA); during the same period a male at Berwick (FB); a female at Craster Tower at the start of the year (per WSC). Spring arrival was late: 1 on 24 Apr. being easily the first. Scattered numbers arrived in the influx of 8-14 Oct.

345. Barred Warbler *Sylvia nisoria*

1 at Hartley on 15 Aug. (SRS, RMW); 1 at Cresswell on 30 Sept. (JCD).

346. Garden-Warbler *Sylvia borin*

On 23 Apr. the first single birds were at Holy Island and Seaton Burn (PRE, BE, IH). Several arrived in the period 8-13 Oct.

347. Whitethroat *Sylvia communis*

The first was 1 in Whitley Bay cemetery on 23 Apr. (CED); others from 26 Apr.

348. Lesser Whitethroat *Sylvia curruca*

Bred in and near Wynyard Park (ALC, ECG) and near Fenwick (ABI). Odd migrants in Sept. at Holy Island, Monk's House, Whitley Bay cemetery, Tynemouth and Hartlepool. A late bird at Marsden quarry on 15 Oct. (JAB).

354. Willow-Warbler *Phylloscopus trochilus*

First records: 1 in Gosforth Park on 16 Apr. (MB) and another at Dipton on 18 Apr. (BL). In autumn, the only noticeable fall of migrant willow-warblers occurred in Aug.—maximum 35 at Hartlepool on 25 Aug. *Phylloscopi* involved in the influx of 13 Oct. may have been either *P. trochilus* or *P. collybita*: ca.10 at South Shields (MB, JMB) and 1 at Hartlepool; also 1 at Craster on 15 Oct. They were presumably of continental origin.

356. Chiffchaff *Phylloscopus collybita*

2 heard singing in Castle Eden Dene on 11 Apr. had increased to ca.10 by 14 Apr. (BU), but very scarce elsewhere until much later.

357. Wood-Warbler *Phylloscopus sybilatrix*

At least 2 singing near Stocksfield on 5 May (TW).

359. Arctic Warbler *Phylloscopus borealis*

1† at Hartley on 15 Aug. (SRS, RMW) constitutes the third record for Northumberland, both the previous birds occurring on Holy Island—on 27 Sept. 1924 and 9-12 Sept. 1951. (A probable also occurred there on 16 May 1953.)

360. Yellow-browed Warbler *Phylloscopus inornatus*

4 records of this rare species: 1† at Tynemouth on 8 Oct. (JMB, MB, JDP); 1† at Whitley Bay cemetery 13-14 Oct. (SRS, BG *et al.*); 1† at Blyth cemetery 13-15 Oct. (BE, TW *et al.*); 1† at Hartlepool cemetery from 14 Oct. until 6 Nov. (JAB, PJS *et al.*).

361. Pallas's Warbler *Phylloscopus proregulus*

1† at Hartlepool 12-13 Oct. (JAB *et al.*) is the first Durham and seventh British record of this tiny Siberian vagrant (See *Brit. Birds* 56, 112). Northumberland has 1 record—at Monk's House 13-14 Oct. 1951.

364. Goldcrest *Regulus regulus*

Influx in spring: on 23 Apr., 7 arrived off the sea at Monk's House and over 20 at Holy Island; on 24 Apr., ca.25 were in Holywell Dene and on 27 Apr., 15 in Whitley Bay cemetery. Several influxes in autumn, especially 11-14 Oct., though they were reckoned in dozens rather than, as last year, in hundreds.

365. Firecrest *Regulus ignicapillus*

1 at Tynemouth 27-29 Sept. (JMB, JDP *et al.*).

366. Spotted Flycatcher *Muscicapa striata*

Earliest record: 1 near Haydon Bridge on 7 May. A scattering of coastal migrants in autumn included 7 at Hartlepool on 25 Aug. 1 in Whitley Bay cemetery until 30 Sept. was the last seen.

368. Pied Flycatcher *Muscicapa hypoleuca*

Late migrants: 1 at Monk's House on 1 Oct. (PRE) and 2 at Tynemouth on 2 Oct. (JMB); of 2 at Whitley Bay cemetery on 13 Oct., 1 remained until 18 Oct. (MM *et al.*).

370. Red-breasted Flycatcher *Muscicapa parva*

An adult cock and a first-winter bird at Tynemouth on 26 Sept., the latter remaining until 29 Sept. (JMB, BE, JDP). Another first-winter bird at South Shields 12-13 Oct. (FGG).

376. Tree-Pipit *Anthus trivialis*

Present between 30 Mar. (a bird singing in Gosforth Park: ER) and 11 Oct. (1 heard calling over Monk's House: PRE).

379b. Water-Pipit *Anthus spinoletta spinoletta*

A pipit showing the characters associated with this race was watched at St. Mary's Island on 17 Mar. (SRS).

382. Yellow Wagtail *Motacilla flava*

First record: a male at Whitley Bay on 13 Apr. (JDP).

383. Waxwing *Bombus garrulus*

Ones and twos fairly widespread Jan.-Mar. 2 seen near Blagdon on 28 Oct. (MM, BE, IH) and 2-3 watched almost daily in Sunderland 9-22 Nov. The latter ate large quantities of whitebeam berries and often ate snow (BU).

384. Great Grey Shrike *Lanius excubitor*

1 at Prestwick Carr on 11 Feb. (SRB), 1 on Holy Island on 11 Oct. (DS) and 1 near the Reclamation Pond on 14 Oct. (JCM).

389. Rose-coloured Starling *Sturnus roseus*

An adult† in full plumage in the Tynemouth boating-lake area 21-24 Aug. was found by M. Cowley and seen later by J. D. Parrack, J. M. Bayldon *et al.*; it was

usually in the company of starlings. Records of this species are always open to the possibility that the bird is an "escape," although this individual showed no signs of having been in captivity.

391. Hawfinch *Coccothraustes coccothraustes*

4 reported, including an adult female caught and ringed at Hartlepool on 19 Apr. and found dead there next day (RTM, RJL).

394. Siskin *Carduelis spinus*

2 at Staward on 9 and 16 June (CED). Fairly widespread at the beginning and end of the year, with flocks of up to 30 at Norton (ALC), Darlington (MGR) and Gosforth Park (IH, MM).

395. Linnet *Carduelis cannabina*

A white linnet, with a yellow bill and only a few brown feathers, was near Graythorp on 19 Aug. (PJS, ECG).

396. Twite *Carduelis flavirostris*

1 seen (and heard) with linnets at Graythorp pool on 7 Jan. (RTM, PR, RJL) is the first Teesmouth record for about 10 years, and the only 1962 record in the 2 counties.

397. Mealy Redpoll *Carduelis flammea flammea*

1 trapped at Monk's House on 2 Jan., and 2 others seen at Seahouses (PRE); up to 12, with lesser redpolls, at Shotton between 18 Feb. and 11 Mar. (DWS); 2 seen with lessers at Port Clarence tip on 21 Jan. had increased to 10 by 24 Feb. (ECG, PJS); 1 trapped at Craster on 17 Oct. (PRE). Others reported.

402. Scarlet Grosbeak *Carpodacus erythrinus*

A juvenile† at Holywell Ponds 22-23 Sept. (JPD, JPD, JMB, CED).

Crossbill sp.

Only 1 report in the early months: 1 in Dipton woods on 3 Feb. (PH). A tired male on a clothes line at Shotton on 9 July, and 2 parties in Kyloe woods 11-12 July, suggest an influx. Birds present at Seaton Burn in Aug. may have been there longer and stayed into 1963 (MWR). From Sept. until the end of year, numerous reports came from both coastal and inland localities. Few of these birds were critically examined for the features of the parrot crossbill, but some of this species may well have been involved. K. Williamson writes of an influx of *Loxia pytyopsittacus* at Fair Isle (and probably elsewhere) on 27-28 Sept. and in early Oct., especially 11 Oct. Several coastal reports in the 2 counties match these dates well; for example, 1 at Castle Eden Dene on 29 Sept. (DWS), 21 circling over Monk's House at 1630 on 11 Oct. and later flying inland (PRE), and 1 on Holy Island on 13 Oct. (DS). Common crossbills, *L. curvirostra*, were still moving out of south Sweden in large numbers about the same time, and it is possible that both species were involved in our own records.

408. Brambling *Fringilla montifringilla*

Good numbers at the beginning and end of the year, but no records between 30 Apr., when ca.20 were still in Holywell Dene (AB, ER), and 23 Sept., when a male accompanied chaffinches in Gosforth Park (BG).

420. Little Bunting *Emberiza pusilla*

1† trapped in Gosforth Park on 22 Oct. (CW).

421. Reed-Bunting *Emberiza schoeniclus*

By far the biggest concentration was a roost of up to 1,000 in Gosforth Park in Oct. (CW, JDP *et al.*).

422. Lapland Bunting *Calcarius lapponicus*

The only reports were:

Holy Island: 1 on 13 Oct. (CJ) and ca.12 on 21-22 Oct. (DGB)

Killingworth: 4 on 5 Mar. (BL) and 1 on 25 Nov. (BG)

North Gare: 2 off the sea on 12 Oct. (JAB)

Seaton Carew tip: 1 in Jan.

423. Snow-Bunting *Plectrophenax nivalis*

At the beginning and end of the year flocks exceeding 100 wintered in several open localities in the Newcastle-Gateshead area—the Town Moor and school playing-fields being favoured haunts—and there are several other inland records of small parties. The last of several Apr. records was 1 still at Hartlepool on 22 Apr. (PHar, RTM). The autumn arrival was unusually early all along the coast: 1 at Holy Island on 10 Sept., 4 on 11 Sept. and 8 on 12 Sept. (ER, SRB); 2 on Inner Farne on 13 Sept. (PRE); 2 at Goswick on 14 Sept. (MGR). Numbers at Teesmouth were rather low, 150 at Seaton Carew in Nov. being the biggest flock, but up to ca.1,000 thronged the shores of Holy Island in Dec. (BL, ER).

RECOVERIES OF RINGED BIRDS

(a) Ringed in Northumberland and Durham

Date and place ringed	Place recovered	Date recovered
EIDER-DUCK		
28.8.59(juv)Seahouses, Northd.	Gullane, E. Lothian	8.3.62
LAPWING		
6.5.56 Stannington, Northd.	St. Paul les Dox, Lourdes, France	12.1.62
26.5.60 Nr. Wooler, Northd.	Noye, Coruña, Spain	7.1.62
RINGED PLOVER		
22.8.60(juv)Newton, Northd.	Bassin d'Archachon, Gironde France	13.5.61
BAR-TAILED GODWIT		
26.9.57 *Beadnell, Northd.	Ringkøbing Fjord, Jutland, Denmark	6.8.61

<i>Date and place ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
DUNLIN		
8.9.61 *Boulmer, Northd.	El. Aquin, Spanish W. Africa	18.2.62
28.8.62 *Nr. Port Clarence, Co. Durham	Somme, France	15.10.62
RUFF		
1.9.60 *Embleton, Northd.	Chichester Harbour, Hants.	25.11.62
KITTIWAKE		
17/25.6.59 N. Shields, Northd.	At sea, approaches to English Channel	23.4.62
29.6.60 N. Shields	Flatey, Skjálfandi, N. Iceland	14.10.61
REDWING		
4.12.60 *Ponteland, Northd.	Nr. Pujols, Gironde, France	6.3.62
BLACKBIRD		
12.4.58 *Haydon Bridge, Northd.	Shanballymore, Mallow, Cork	7.1.62
13.10.59 *Seahouses	Östervala, Västmanland, Sweden	Aug.62
14.10.59 (w)Seahouses	Sviland, Rogaland, Norway	11.10.62
25.10.59 (w)Fenwick, Northd.	Ballinamallard, Fermanagh, N. Ireland	(15.1.62)
11.12.60 (w)Fenwick	Heligoland, Germany	9.2.62
23.5.61 Gosforth, Northd.	Ballygowan, Co. Down, Eire	28.1.62
11.11.61 *Fenwick	Nr. Halden, Östfold, Norway	29.10.62
18.11.61 *Wallsend Swallow Ponds, Northd.	Varenquebec, Manche, France	28.12.61
21.1.62 *Gosforth	Schiermonnikoog, Frisian Islands, Netherlands	ca.21.3.62
23.2.62 *Gosforth	Stockholm, Sweden	23.4.62
REDSTART		
16.6.62 Hamsterley S.F., Co. Durham	Vila Flôr, Tras os Montes, Portugal	ca.28.9.62
BLACKCAP		
17.9.60 *Newton	Wadi Shahrou, Hammana, Lebanon	Apr.62
WHITETHROAT		
26.6.59 *Fenwick	Braganca, Tras os Montes, Portugal	15.10.62

<i>Date and place ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
PIED FLYCATCHER		
16.6.62 Hamsterley S.F.	La Guardia, Pontevedra, Spain	8.9.62
HEDGE-SPARROW		
11.5.57 *Gosforth	Gosforth	18.1.62
MEADOW-PIBIT		
13.9.59 (w)Seahouses	Arces-sur-Gironde, France	14.7.62
ROCK-PIBIT		
3.1.62 *Seahouses	North of Faroe Islands	9.5.62
PIED WAGTAIL		
21.3.58 *Bamburgh, Northd.	Slough, Bucks.	27.2.62
GREY WAGTAIL		
2.4.61 *Fenwick	Honiton, Devon	7.1.62
STARLING		
8.11.58 *Beal, Northd.	Nurmijärvi, nr. Hyvinkää, Uusimaa, Finland	12.6.62
10.1.59 *Gosforth	Coleford, nr. Frome, Somerset	15.3.61
11.1.59 *Gosforth	Demiansk, Novgorod, U.S.S.R.	June.59
17.1.59 *Gosforth	Skjold, nr. Neslun, Hordaland, Norway	2.6.59
1.1.62 *Wolviston, Co. Durham	Koed, Kolind, Jutland, Denmark	2.4.62
SISKIN		
18.9.60 *Seahouses	Halen, Limburg, Belgium	12.10.61
LINNET		
22.8.61 (juv)Seahouses	Santander, Spain	1.1.62
24.6.62 Holywell Ponds, Northd.	Azur, Landes, France	13.10.62
REDPOLL		
25.8.60 *Craster, Northd.	Wednesbury, Staffs.	9.9.62
29.7.61 (juv)Fenwick	Bommershoven, nr. Overrepen, Limberg, Belgium	28.10.61
21.8.61 (juv)Craster	Jumet, Hainant, Belgium	10.10.61
LESSER REDPOLL		
12.8.61 *Fenwick	Halen, Limburg, Belgium	10.10.61

*Date and place ringed**Place recovered**Date recovered*

(b) Interesting local recoveries of foreign-ringed birds

BARNACLE-GOOSE

20.7.62	*Dunöyane, Hornsund, Spitsbergen	Coquet Is.	Sept.62
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GREATER BLACK-BACKED GULL

26.6.62	Gt. Ainov Island, Murmansk, U.S.S.R.	Lambton Park, Chester- le-Street, Co. Durham	26.11.62
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BLACKBIRD

8.7.62(juv)	Kolsundet, Lake Malaren, W. of Stockholm, Sweden	Gosforth	1.12.62
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STARLING

. .	(w)Finland	Benton, Northd.	3.2.62
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- NOTES: 1. *Indicates bird ringed as adult or full-grown
 2. (w) Indicates bird ringed as 1st winter
 3. (juv) Indicates bird ringed as juvenile
 4. All other birds have been ringed as pullus
 5. Where the date of recovery is unknown, the date of the reporting letter is given in brackets

LIST OF CONTRIBUTORS

C. M. Adamson, A. F. Airey, L. P. Alder, W. Anderton, E. L. Arnold, J. H. Arthur, J. S. Ash, M. H. Baker, J. A. Bailey, J. Bainbridge, K. Baldridge, A. H. Banks, P. G. R. Barbier, S. R. Barrett, J. M. Bayldon, C. B. Beaumont (R.S.P.C.A.), D. G. Bell, M. Bell, A. Belshaw (=AB), J. Bennett, E. G. Bevans, C. Bielby, A. Blackett (=AB1), R. A. Blackett, J. S. Booth, T. A. Bowbeer, C. H. Brackenbury, F. Brady, Miss W. B. Brady, W. M. Brady, E. G. Brown, V. F. Brown, R. Clementson, A. J. Clissold, F. Colley, D. Collinson, Mrs. A. L. Cooper, J. C. Coulson, G. A. Cowen, M. Cowley, Sir John Craster, W. S. Craster, J. Darling, J. C. Darnell, D. Davenport, J. P. Deacon, P. Dent, Miss V. Dobson, C. E. Douglas, G. Duncan, A. Eaton, D. M. Edge, B. Etheridge, P. Evans, P. R. Evans, B. Galloway, P. Gartland, E. C. Gatenby, C. J. Gent, I. C. Gent, N. Grant, F. G. Grey, Miss R. M. T. Grey, P. Harland (=PHar), I. Harrison, J. V. Henderson, Mrs. G. Hickling, L. P. Hird, P. Hogg, R. J. Horton, D. Howey, H. Hunter, Miss O. P. Jefferies, A. Jobling, L. D. Johnston, M. Kelly, D. Laing, E. Lennox, R. J. Lightfoot, B. Little, Miss E. M. Lobley, A. Macdonald, L. G. Macfarlane, J. C. Manson, M. Marquiss, R. T. McAndrew, I. McKinlay, E. Meek, E. Miller, B. Mortimer, Mrs. J. H. Munro, M. Nattrass, J. H. Neesham, R. Norman, Miss P. Oliver, W. Ord, R. M. Palmer, D. T. Parkin, R. Parkin, J. D. Parrack, M. Philipson, P. Reid (=PR), C. B. E. Richardson, J. Richardson, Hon. M. W. Ridley, M. G. Robinson, E. Robson, P. Routledge, D. R. Seaward, E. Shearer, D. W. Simpson, G. D. Sinclair, J. K. Smith, C. Souter, D. C. Souter, F. Stabler, P. J. Stead, I. F. Stewart, S. R. Stobart, D. Summers-Smith, H. Tegner, G. W. Temperley, G. S. Tuffnell, M. Tulloch, A. M. Tynan, B. Unwin, A. Vittery, A. J. Vittery, C. Watson, T. Winter, R. M. Wood, P. Yeoman.

CORRIGENDA

- (1) Vol. XIV, No. 1. p. 35, 423. SNOW-BUNTING. Correct date "August 16" to read "September 16."
 (2) Vol. XIV, No. 4. p. 122. BLACKBIRD RECOVERIES. Insert * before "Fenwick, Northd." and "Beal, Northd."

ORNITHOLOGICAL REPORT FOR THE FARNE ISLANDS FOR 1962

Compiled by

GRACE HICKLING, M.A.

INTRODUCTION

Last year's decision to publish both the county and Farne Islands ornithological reports in the same part of the *Transactions* received general approval and a similar procedure has been adopted for the 1962 reports. In both reports the classified notes, and ringing recoveries, are arranged in the order given in the *Check-list of the birds of Great Britain and Ireland* (1952), published by the British Ornithologists' Union.

Principal contributors to this report are Mrs. A. Flowers, F. Y. Bodger, J. C. Coulson, R. Drent, T. H. Pearson, G. R. Potts, W. Shiel, B. P. Springett, G. F. van Tets and the compiler.

GENERAL

From the point of view of weather 1962 was a difficult year and there were long periods when it was impossible to visit the islands. The early months were cold and stormy and it was not until mid-April that there was any sign of spring. On 25 April the effect of the long winter on the vegetation was still apparent for, although the grass and campion were just starting to grow, nettles and docks showed practically no sign of life. On the other hand, the effect on the birds was much less marked than had been expected, for puffins, guillemots and shags all had eggs. Two eiders had started laying on Brownsman, but lack of vegetation meant that, not only was there practically no cover for them, but there was also a shortage of their usual nesting material. By 1 May, although there was still very little grass, the campion was making rapid progress and a week later it was in bloom. Nevertheless, it never really recovered from the initial set-back and this, combined with subsequent weather conditions, meant that there was not the normal lush growth. As a result, there was much less cover than usual for the terns—a fact that may perhaps account, at least in part, for the decrease in the breeding success of both Sandwich and roseate terns.

In late May, northerly gales forced the Brownsman Sandwich terns to change their breeding site, so delaying the start of nesting; the gales also affected the arctic terns, most of which started laying at least ten days later than in 1961. The last week in June was again very stormy and on the morning of 24 June the west-north-west wind rose to force 9-10. The gale carried spray over the whole of Inner Farne, battering down and withering nearly all the flowering plants. Brownsman was less affected, but most of the campion on the west side was flattened. The birds, too, suffered: on Inner Farne at least three shags' and many kittiwakes' nests were destroyed, while other young kittiwakes died in the nests. July was another bad month and in the first week northerly gales wiped out the kittiwake colony at the north end of Brownsman. Next came heavy rain. This started on the afternoon of 10 July and continued for over 12 hours. The effect on the Brownsman Sandwich terns was disastrous and many chicks, including some well-grown youngsters, were found dead. On Inner Farne the Sandwich terns had suffered from the earlier bad weather and, as a result, there was a marked fall in the numbers fledged.

More gales followed and in the early morning of 19 July a sudden, very heavy south-east swell got up. A maelstrom of water poured into Pinnacles Haven, damaging the watchers' boat, and drowning many young kittiwakes and shags on both Brownsman and Staple Island. August again brought gales, this time mainly from the south-west or west, but, fortunately, by then most of the young birds were on the wing and there was little damage.

Once again no terns or eiders nested on Longstone End and it is apparent that the continuous disturbance to which, in recent years, birds attempting to nest there have been subjected, has driven them away from this long-established breeding ground.

Although there were observers on Inner Farne from the end of March until mid-August there was only one period when passerines were recorded in any numbers. On 15 April, the wind was south-east and this was followed, next day, by an easterly wind and slight fog. During the night of 16/17 April some 25 robins arrived and these remained, in dwindling numbers, until 26 April. Other migrants seen on Inner Farne during this period included several blackbirds, five fieldfares, five goldcrests, five meadow-pipits, four linnets, four bramblings, three hedge-sparrows, two black redstarts, one or two wheatears, and a chaffinch, house-sparrow, yellow hammer, skylark and song-thrush. It is interesting to note that there was a big fall of robins on Fair Isle between 17-19 April and that among other species

recorded were hedge-sparrows, chaffinches, bramblings and yellow hammers. No students were in the Study Centre in the autumn, but on 19 October several blackbirds, redwings and fieldfares were on the islands: these were obviously the remnants of the previous weekend's large *Turdidae* immigration.

Two species seen in 1962 had been recorded only once before. These were the great spotted woodpecker and the spotted crake. The previous woodpecker record was in 1949 whilst it is exactly 100 years since a spotted crake was last seen on the Farnes.

Unusual visitors were two bar-headed geese. They were first noticed on Staple Island on 26 May and a single bird was frequently seen on the Inner Group between 28 July and 8 August. The bar-headed goose is an Asiatic species, breeding in Central Asia and wintering in India, and it was obvious that the Farne birds (which were seen also on the nearby mainland) were escapes although it was not until April 1963 that their origin was discovered. As the result of a curious set of circumstances it was then learned that they had been reared, in 1960, by Mr. G. L. Reid at Hawkhurst, in Kent. They were left unpinioned, and in May 1962 were chased away by their parents, turning up shortly afterwards on the Farnes.

CLASSIFIED NOTES

16. Manx Shearwater *Procellaria puffinus*

18 flying over Staple Sound on 23 July is largest single flock ever recorded at the Farnes.

26. Fulmar Petrel *Fulmarus glacialis*

16 pairs nested on Inner Farne, 3 on Brownsman and probably 8 on Staple Island. No young hatched on Outer Group, but 7 hatched and 4 reared on Inner Farne—remaining eggs lost to gulls or visitors.

28. Cormorant *Phalacrocorax carbo*

Nested on both N. Wamses and Megstone. Counts of nests on N. Wamses as follows: 26 Apr., 31 (some with eggs); 5 May, 60 (30 with eggs); 23 July, 70 (36 with eggs). Nest count on Megstone on 29 July gave 55 occupied (10 with eggs), 3 disused and 1 partially washed away.

29. Shag *Phalacrocorax aristotelis*

Breeding commenced later than in 1961. 1 pair on Inner Farne had eggs by 18 Apr. and on 25 Apr. most of the 47 nests on Brownsman contained eggs. On 14 May 1 nest on Brownsman, and 1 on Staple Is., had small young (in 1961 first Brownsman young hatched on 29 Apr.). Approximately 150 pairs nested on Staple Is., 54 on Brownsman and 27 on Inner Farne. A nest with 2 eggs found on Brownsman on 29 Aug. Nesting birds included 2 ringed as young in 1951 and 3 ringed as adults in 1952.

45. Mallard *Anas platyrhynchos*

On 25 Apr. a pair seen on Brownsman. 3 days later a duck flew off the north end of this island and search revealed the beginnings of a nest. No eggs were laid and birds disappeared on 4 May. Last confirmed breeding record was on N. Wamses in 1939.

53. Shoveler *Spatula clypeata*

Seen flying over Staple Sound: 15 Aug., 3; 16 Aug., 4. Last recorded in 1959.

56. Tufted Duck *Aythya fuligula*

A further record: a pair off Inner Farne on 27 Apr.

67. Eider-Duck *Somateria mollissima*

707 ducks known to have nested: 536 on Inner Farne, 11 on Staple Is. and at least 160 on Brownsman. On 25 Apr. 2 nests, each with 2 eggs, found on Brownsman: 3 days later both were empty, but a new nest contained 1 egg. On Inner Farne first duck laid on 26 Apr. and first ducklings hatched 24 May. F. Y. Bodger reports that Brownsman clutches were smaller than usual (mostly 2, 3, 4 and 5 eggs), but that more ducks hatched off young. Once again considerable numbers of eggs remained unhatched, including clutches of 10, 12 and 16.

69. Red-breasted Merganser *Mergus serrator*

A further record: 5 off Inner Farne on 11 July.

73. Sheld-Duck *Tadorna tadorna*

At least 7 pairs seen, but only 2 known to have reared young.

75. Grey Lag-Goose *Anser anser*

On 23 July 2 grey geese (thought to be grey lags) flew off S. Wamses towards Big Harcar and numerous goose-pellets subsequently found on both N. and S. Wamses. 5 days later 4 grey lags reported on Harcar. With the exception of 2 seen off Longstone on 6 Aug. 1960 this is the first summer record since the shooting, in 1958, of several birds of the party which, since 1951, had paid annual summer visits to the Outer Group.

107. Merlin *Falco columbarius*

Inner Farne: 1 on 20 Apr., 19, 20 and 28 May, 5 Aug.

120. Water-Rail *Rallus aquaticus*

Staple Is.: 1 on 6 Dec. An infrequent visitor, usually in late autumn and winter, and last recorded on 1 Nov. 1959.

121. Spotted Crake *Porzana porzana*

Brownsman: 1 found dead, with its head wedged tightly in a crack, on 28 July. Second record for the Farnes, the last being shot on Longstone in Apr. 1862.

127. Coot *Fulica atra*

Inner Farne: 1 on 24 June. Second record for the Farnes.

131. Oystercatcher *Haematopus ostralegus*

Minimum of 20 nesting pairs: 4 on Inner Farne, at least 3 on Wideopens and Knoxes Reef, 3-4 on Staple Is., and 10-14 on Brownsman.

133. Lapwing *Vanellus vanellus*

1 pair nested on Inner Farne, but no young reared.

134. Ringed Plover *Charadrius hiaticula*

Some 12 pairs nested: 2 on Staple Is., 5 on Brownsman and at least 5 on Inner Farne. F. Y. Bodger commented that this was the smallest number he had ever known on Staple and Brownsman.

145. Common Snipe *Capella gallinago*

Many more records than usual. From 1 to 3 seen on Inner Farne throughout Apr. and at least 12 on this island on 6 Dec.

156. Green Sandpiper *Tringa ochropus*

Inner Farne: 1 on 15 Aug. Brownsman: 2 on 16 Aug. Last recorded in 1956.

162. Spotted Redshank *Tringa erythropus*

Inner Farne: 2 on 20 Oct. Fourth record for the Farnes.

198. Greater Black-backed Gull *Larus marinus*

The large numbers present, in recent years, during late summer, have been mainly on outlying islands, but this year birds were seen on breeding islands. In late June and July from 1 to 8 were recorded frequently on Inner Farne and on 7 July a pair of adults, with several immatures, were on Staple Is. Nearby were 2 or 3 puffin corpses, turned inside out—obviously by these gulls.

202. Glaucous Gull *Larus hyperboreus*

1 flew up Brownsman's Gut on 28 Apr.

208. Black-headed Gull *Larus ridibundus*

1 pair again nested on Inner Farne. 1 young hatched, but later killed by terns.

211. Kittiwake *Rissa tridactyla*

An increase of some 100 pairs (to 506 nests) on Inner Farne and birds spreading south in main Brownsman colony. Very large numbers of non-breeding (mainly immature) birds present in late June. Similar parties have been noted occasionally in the past (e.g. in 1954 and 1955), but 1962 numbers were exceptional. On 16 June big concentrations on north end of Brownsman, and on S. Wamses shingle beach, and from 17 to 24 June between 2,000 and 4,000 counted daily on Knoxes Reef and the Wideopens with smaller parties on Inner Farne. Maximum was on 26 June, when flocks on Knoxes and the Wideopens totalled over 7,000.

217. Common Tern *Sterna hirundo*

1 found breeding on Inner Farne had been ringed as young on Coquet Island on 10 Aug. 1959.

218. Arctic Tern *Sterna macrura*

Little change in numbers on Inner Farne, but birds had extended nesting area northwards over top of island. Gales in late May delayed start of laying and no chicks hatched before 21 June (in 1961 hatching commenced on 10 June). Some birds still laying on 9 July. No count made on Brownsman, but fewer pairs nested near the cottage and upper garden and general impression suggested a decrease in numbers. Eggs seen on 24 May, but only sporadic laying until 28 May and many

early eggs taken by gulls. First young hatched on 20 June. Good fledging success on both islands and few young birds found dead. Retraps included two birds aged respectively 15 and 12 years.

219. Roseate Tern *Sterna dougallii*

A marked decrease in numbers. 30 adults seen together on Inner Farne, but only 12 clutches identified and 9 young found. On Brownsman, main colony (10-15 nests) was above the lower garden with small colony (5 nests) near the pond and upper garden. Average clutch size appeared to be smaller than usual.

223. Sandwich Tern *Sterna sandvicensis*

First recorded on 15 Apr. 356 pairs nested on Inner Farne, above St. Cuthbert's Cove; first eggs laid on 17 May and first young hatched on 7 June. Average clutch size was 1.2 (THP), but bad weather caused many casualties and only 200 ringed. Birds settled above the N. Cove of Brownsman in mid-May, but strong northerly gales resulted in move to area near upper garden where 1,122 clutches counted on 25 June. Hatching started here on 18 June. In mid-Aug., at least 20 young Sandwich terns, as well as 3 arctic terns, were found with a deformed wing: this was smaller than the other, normal, wing and all the joints appeared to be fused together. The youngsters were still being fed by their parents (THP). On 1 July 2 birds, ringed as young on the Farnes in 1955 and 1959, were seen on Coquet Island and 2 others, ringed in the same years, were found nesting among the Farne colonies.

224. Razorbill *Alca torda*

1 on the Pinnacles on 27 Jan. and 8 seen flying in to Inner Farne Stack on 21 Feb. At least 4 pairs on Inner Farne; first egg laid on 25 Apr. and 4 young reared. None nested on Outer Group.

227. Guillemot *Uria aalge*

Counts of nesting birds as follows:—Inner Farne 10 (THP, 24 June); Megstone 18 (BPS & GRP, 29 July); Pinnacles 750-1,000 (RD, 1 May). None nested on N. Wamses, or north end of Brownsman, but numbers on S.E. cliff of Brownsman (109 eggs counted by JCC), Skeney Scar and Staple Island cliffs at least as large as in 1961. 2 eggs seen on Pinnacles on 25 Apr. and by 1 May figure had risen to 100.

230. Puffin *Fratercula arctica*

Present in large numbers by 31 Mar. On Inner Farne first egg laid about 21 Apr. and by 28 Apr. over half of the occupied burrows on Staple Is. contained eggs. On 13 Aug. a dead puffin was found on W. Wideopens: it had apparently died of starvation, for a piece of thin nylon cord, about 1-1½ yds. in length, was tied round a leg while the other end had caught in a piece of wood, so trapping the bird under a stone. A nesting bird had been ringed as an adult in 1953.

249. Short-eared Owl *Asio flammeus*

1 flew over Inner Farne on 5 Aug. Sixth record since 1886.

263. Greater Spotted Woodpecker *Dendrocopos major*

Inner Farne: 1 on Prior Castell's Tower on 15 Aug. Second record for the Farnes.

283. Jackdaw *Corvus monedula*

Inner Farne: 1 on 23 and 30 Apr. An infrequent visitor, last recorded in 1959.

308. Blackbird *Turdus merula*

On 6 May a pair flew out of the cave below the Brownsman cottage and investigation revealed a nest. Unfortunately, it was in an inaccessible position and this, combined with shortage of time, prevented a closer examination. It is not known if eggs were laid or young hatched.

This is the first published account of attempted nesting, but E. Miller's field diaries mention earlier records. Miller, who was a watcher on Brownsman from 1911 to 1914, obtained his information from fellow watchers. According to him, at that time blackbirds nested regularly in the stems of the hemlock *Conium maculatum* L. on Inner Farne and a pair was known definitely to have hatched off in May 1912. A nest was built on Brownsman in 1893 or 1894 while a pair frequented this island throughout the summer of 1914. No nest was found, but the male was seen carrying food and on 30 June another watcher saw what he thought was a young bird although Miller himself questioned this identification.

311. Wheatear *Oenanthe oenanthe*

A flock of 60-80, which paid a brief visit to Brownsman on 4 May, is largest single party recorded for many years.

321. Black Redstart *Phoenicurus ochruros*

Inner Farne: a female on 21 Apr. and a male on 22 Apr.

380. Pied Wagtail *Motacilla alba*

Pair again nested on Inner Farne.

409. Yellow Hammer *Emberiza citrinella*

Inner Farne: 20 Apr., 1; 6 May, 2. Third and fourth records for the Farnes.

424. House-Sparrow *Passer domesticus*

Inner Farne: a female on 21 Apr. Fourth record since 1914 and first since 1957.

OTHER SPECIES

The following species, although not dealt with in detail, were recorded: Gannet, heron, teal, wigeon, long-tailed duck, common scoter, kestrel, golden plover, turnstone, woodcock, curlew, redshank, knot, purple sandpiper, dunlin, sanderling, arctic skua, great skua, lesser black-backed gull (breeding), herring-gull (breeding), common gull, black guillemot, wood-pigeon, swift, skylark, swallow, sand-martin, carrion-crow, wren, fieldfare, song-thrush, redwing, ring-ouzel, redstart, robin, whitethroat, willow-warbler, chiffchaff, goldcrest, spotted flycatcher, pied flycatcher, hedge-sparrow, meadow-pipit, rock-pipit (breeding), starling (breeding), linnet, chaffinch, brambling, snow-bunting.

RINGING

During the year 5,299 young and 836 adults were ringed: this is 2,898 fewer than in 1961. The numbers of individual species were as follows, the 1961 figures being given, for comparison, in brackets:—Fulmar 7 (3); cormorant 76 (200); shag 349 (348); eider-duck 158 (350);

oystercatcher — (1); ringed plover 6 (9); lesser black-backed gull 410 (802); herring-gull 36 (63); kittiwake 895 (1,564); common tern 166 (130); arctic tern 2,115 (2,945); roseate tern 30 (127); Sandwich tern 1,169 (1,928); guillemot 182 (217); puffin 533 (326); wryneck — (1); wheatear — (1); redstart — (1); robin — (1); blackcap — (1); rock-pipit 3 (12); pied wagtail — (2); starling — (1). In addition, 87 adults (133 in 1961) were re-ringed.

There was a marked rise in the number of recoveries—689 compared with 413 in 1961—and these have been listed as in the last report. As usual, J. C. Coulson was responsible for much of the ringing and re-trapping: this latter plays an important part in the studies of sea-birds carried out on the islands by research students working under Dr. Coulson's guidance.

There have been two further notable recoveries. The first, a kittiwake, ringed as young on 29 June 1961, was found dead near Vlasim in Czechoslovakia on 8 February 1962. This is about 35 miles south-east of Prague, and hundreds of miles from the nearest ocean, but, strangely enough, the bird was correctly identified by the finder. On the other hand the second bird, an arctic tern, was reported by Moscow as *Larus* sp. It had been ringed on 4 July 1960 and was recovered at Burayevo, in Bashkir A.S.S.R., on 10 June 1962. It seems extraordinary that this tern, which might well have been expected to be nesting for the first time on the Farnes, should turn up instead in the Urals, over 550 miles north of the Caspian Sea. Other arctic tern recoveries provide further evidence of the dispersal movement of birds of the year—in this case to places as far apart as the Isle of Arran, Kielder state forest and Norway—which often occurs before they set out on their southward migration. Kittiwake recoveries include another from Newfoundland while the roseate tern is the second foreign recovery (in both cases from Ghana) of a Farne-ringed bird of this species. The large number of immature shags recovered (including many from inland counties) is an indication of the disastrous "wreck" that occurred in the early months of 1962. Two puffins were caught in drift nets off Berwick-on-Tweed and according to Seahouses fishermen guillemots, too, are fairly often caught in this way and they usually cut their nets in order to free the birds.

RECOVERIES OF BIRDS RINGED ON THE FARNE ISLANDS

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
FULMAR PETREL		
(Total: 2; Farne Is.: 2; local: -)		
CORMORANT		
(Total: 42; Farne Is.: -; local: 4)		
9.7.52	Broughty Ferry, Angus	ca.1.1.62
31.7.52	Berwick-on-Tweed (shot)	6.3.62
15.8.53	South Alloa, Clackmannanshire	(11.3.62)
26.8.55	Berwick-on-Tweed (shot)	26.2.62
"	High Frith, R. Leven estuary, Lancs.	18.3.62
1.8.58	Nr. Berwick-on-Tweed	20.4.62
10.7.59	Berwick-on-Tweed — 2 birds (shot)	5.1.62; 26.2.62
"	Forth Bridge, Firth of Forth	ca.23.3.62
"	Nr. Carnoustie, Angus	(7.12.62)
2.6.61	Kelton, nr. Dumfries	23.2.62
"	Berwick-on-Tweed — 2 birds (shot)	26.2.62; 17.3.62
9.6.61	Alnmouth, Northd.	11.1.62
"	Loch Leven, Kinross (shot)	16.4.62
20.6.61	Paisley, Renfrewshire	20.2.62
"	Nr. Eyemouth, Berwickshire	(24.2.62)
"	Berwick-on-Tweed (shot)	6.3.62
"	Hayling Island, Hants.	29.12.62
22.7.61	Berwick-on-Tweed — 3 birds (shot)	5.1.62; 22.1.62; 23.2.62
"	Castle Island, Loch Leven (found shot)	31.3.62
"	Hartlepool, Co. Durham	(10.4.62)
31.7.61	Berwick-on-Tweed — 2 birds (shot)	5.1.62; 17.1.62
"	Graythorp, W. Hartlepool	3.3.62
"	Horning, The Broads, Norfolk	25.4.62
14.8.61	Berwick-on-Tweed (shot)	5.1.62
"	Rosyth, Fife	(1.2.62)
"	Loch Leven	(6.2.62)
"	Nr. Newhaven, Sussex (shot)	(5.3.62)
"	Spurn Point, Yorks.	20.6.62
"	Lunan Bay, Angus (shot)	ca.5.10.62
23.7.62	Mugdrum Island, Firth of Tay (shot)	8.9.62
"	High Valleyfield, nr. Culross, Fife	7.11.62
29.7.62	Seaburn, nr. Whitburn, Co. Durham	11.11.62
"	Berwick-on-Tweed (shot)	28.12.62
SHAG		
(Total: 331; Farne Is.: 273; local: 7)		
11.6.57	Gedney Drove End, Holbeach Marsh, Lincs.	Jan.1962
12.6.58	Lundin Links, Largo, Fife	14.3.62
23.4.59	*Isle of May, Fife (released)	14.7.62

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
SHAG—continued		
27.5.60	*Lundin Links	15.3.62
22.6.60	W. Bay, Elie, Fife	22.6.62
6.7.60	Nr. Alnmouth	(4.6.62)
"	Pittenweem, Fife	14.4.62
2.6.61	Deal, Kent	9.3.62
"	Roswell Pits, Ely, Cambs. (found dead on ice with four unringed shags—inland recovery)	18.3.62
"	Arbroath, Angus	ca.20.3.62
"	Horsted Keynes, Sussex (inland recovery)	25.3.62
"	Snodland, nr. Maidstone, Kent (presumed dead)	(5.4.62)
"	Pennan, nr. Troup Head, Aberdeenshire	(16.4.62)
"	Isle of May	mid-May, 1962
"	Cellardyke, Anstruther, Fife (found alive on shore — "quite tame")	16.5.62
5.6.61	Herne Bay, Kent (released)	{ 23.2.62 25.2.62 9.3.62
"	Nr. Whitburn	19.3.62
"	Seaton Sluice, Northd.	22.3.62
"	Barmston, Bridlington Bay, Yorks.	17.5.62
"	Scarborough, Yorks. (caught alive 2 m. inland; released)	
"	North Berwick, E. Lothian	15.7.62
19.6.61	North Berwick	7.5.62
20.6.61	Skegness, Lincs.	12.1.62
"	Dunkerque, Nord, France (killed)	3.3.62
"	Le Havre lighthouse, Seine Maritime, France (released)	4.3.62
"	Nazeing, R. Lea, Essex	11.3.62
"	Saunderton, nr. Princes Risborough, Bucks. (released — inland recovery)	12.3.62
"	Mendlesham, nr. Stowmarket, Suffolk (released — inland recovery)	13.3.62
"	Goatacre, nr. Calne, Wilts. (found alive — inland recovery after gales)	ca.13.3.62
"	Gullane, E. Lothian	(15.3.62)
22.6.61	Brockhampton, nr. Ross-on-Wye, Herefordshire (shot — inland recovery)	9.3.62
"	Scarborough	9.3.62
24.6.61	Broughton, Westray, Orkney	21.3.62
"	Southbank-on-Tees, Yorks.	(29.3.62)
"	Dunbar, E. Lothian	3.4.62
29.6.61	Nr. Hastings, Sussex (found dead in trammel net)	5.3.62
"	North Berwick	5.3.62
"	Rivenhall, nr. Witham, Essex (came down apparently exhausted — inland recovery)	6.3.62
"	Cockenzie, E. Lothian	(7.3.62)

Date ringed	Place recovered	Date recovered
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SHAG—continued

29.6.61	(1) Redditch, Worcs. (picked up after gales — released on R. Severn estuary)	11.3.62
	(2) Worcester	ca.26.3.62
"	Ipswich, Suffolk (found in poor condition — destroyed)	2.4.62
"	Blakeney Point, Norfolk	8.4.62
"	Redcliff, Sandown, Isle of Wight	10.4.62
"	Hockwold Fen, nr. Methwold, Norfolk (inland recovery)	(15.4.62)
"	Broomfield, Chelmsford, Essex (inland recovery)	18.3.62
"	Aberlady Bay, E. Lothian	29.4.62
16.6.62	Montrose Basin, Angus (shot)	25.9.62
"	Berwick-on-Tweed (shot)	14.11.62
23.6.62	Montrose Basin (shot)	24.9.62

EIDER-DUCK

(Total: 14; Farne Is.: 11; local: 3)

LESSER BLACK-BACKED GULL

(Total: 16; Farne Is.: —; local: 2)

23.8.60	Costa de Caparica, Estremadura, Portugal (shot)	23.12.61
"	Nr. Figueira da Foz, Beira Litoral, Portugal (killed)	(20.1.62)
6.8.61	Nr. Rabat, Morocco (shot)	8.3.62
14.8.61	Gelves, Sevilla, Spain	26.12.61
"	Sidi Ifni, Spanish W. Africa (killed)	Jan. 1962
"	Nr. Tavira, Algarve, Portugal (shot)	18.1.62
"	Figueira da Foz	28.11.62
22.8.61	Sidi Moussa, nr. Salé, Morocco (killed)	11.2.62
"	Orsett, nr. Grays, Essex	3.5.62
"	Lavos, nr. Figueira da Foz	(10.5.62)
"	St. Marie-sur-Mer, nr. Pornic, Loire Atlantique, France (killed)	13.5.62
"	Nr. M'Bour, Sénégal (killed)	18.12.62
30.8.61	Armada, Bathgate, W. Lothian	July/Aug. 1962
13.8.62	Baldonnel, Clondalkin, Dublin, Eire (killed by air-craft)	19.10.62

HERRING-GULL

(Total: 2; Farne Is.: —; local: —)

10.8.61	Leeds, Yorks.	5.4.62
22.8.61	Woodland, Co. Durham	23.12.62

KITTIWAKE

(Total: 139; Farne Is.: 120; local: 3)

11.7.57	35 m. due E. of Farne Is. (caught on fishing boat; released without ring)	19.4.62
20.7.57	Sandscale, Barrow-in-Furness, Lancs.	24.3.62
10.7.58	Heligoland, Germany	7.11.62
27.6.59	Seaton Sluice	15.7.62

Date ringed	Place recovered	Date recovered
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KITTIWAKE—continued

9.7.60	Bay of Biscay, 13 m. N. of Ondarroa, Vizcaya, Spain (shot)	13.12.60
14.7.60	Preston, Lancs. (found oiled — died)	8.4.62
29.6.61	Schiermonnikoog, Frisian Islands, Netherlands	ca.10.3.62
"	Deer Harbour, Random Island, Trinity Bay, Newfoundland	ca.20.7.62
"	Takonín, nr. Vlašim, Ceske Zeme, Czechoslovakia (49°40'N. 14°52'E — inland recovery)	8.2.62
1.7.61	Blakeney Point, Norfolk	20.5.62
3.7.61	Harlingen, Friesland, Netherlands	16.2.62
7.7.61	Nr. 's Gravenhage, Zuid Holland, Netherlands	2.2.62
16.7.61	Vliehors, Vlieland, Frisian Islands, Netherlands	26.5.62
"	Between Canary Islands and N. African coast (about 30°00'N, 12°00'W)	15.2.62
23.7.61	Port Talbot, Glamorgan	24.5.62
28.5.62	*North Sea (58°00'N, 2°15'E — caught on trawler)	6.11.62

COMMON TERN

(Total: 2; Farne Is.: 1; local: 1)

ARCTIC TERN

(Total: 58; Farne Is.: 48; local: 2)

19.7.58	*Foxton, nr. Alnmouth (found in weak condition — died later)	29.5.62
"	Largo, Fife	19.7.62
4.7.60	Burayevo, Bashkir A.S.S.R. (55°50'N. 55°25'E.)	10.6.62
7.7.60	Blåhøj, Aabenraa, Jutland, Denmark	1.7.62
14.7.62	Vikesund, R. Dramselv, Buskerud, Norway (found with broken wing)	15.8.62
"	Brodick, Isle of Arran, Bute	16.8.62
"	Auchencairn, nr. Castle Douglas, Kirkcudbrightshire	ca.2.9.62
27.7.62(juv.)	Kielder S.F., Northd.	18.8.62

ROSEATE TERN

(Total: 1; Farne Is.: —; local: —)

26.6.61	Nr. Half Assini, Ghana (presumed killed)	ca.10.5.62
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SANDWICH TERN

(Total: 21; Farne Is.: 3; local: 1)

14.7.55	Coquet Island, Northd. (released)	1.7.62
8.7.56	Claouey, Bassin d'Arcachon, Gironde, France	23.4.62
28.6.57	Nr. Accra, Ghana	5.2.62
29.6.57	Costa Nova do Prado, Beira Litoral, Portugal (shot)	16.9.62
27.6.59	Coquet Island (released)	1.7.62
21.7.60	Freetown, Sierra Leone (shot)	27.5.62

<i>Date ringed</i>	<i>Place recovered</i>	<i>Date recovered</i>
SANDWICH TERN— <i>continued</i>		
22.6.61	St. Louis, Sénégal	18.1.62
"	Nr. Freetown	29.4.62
24.6.61	Cline Town, nr. Freetown (caught and released — ring removed)	4.3.62
23.6.62	Montrose	14.8.62
25.6.62	Monrovia, Liberia (found unable to fly)	18.12.62
"	Rufisque, Dakar, Sénégal (caught and released — ring removed)	20.12.62
7.7.62	Nr. Apam, Ghana (released)	20.11.62
"	Luanda Bay, Angola (released)	(27.11.62)
14.7.62	Mouth of R. Somone, N.W. of M'Bour, Sénégal (caught by foot on fish hook — released unharmed)	1.11.62
"	Port Etienne, Mauritania (shot)	1.11.62
28.7.62	Kpeme, nr. Lomé, Togo (found oiled — flew off after cleaning)	1.12.62

RAZORBILL

(Total: 1; Farne Is.: 1; local: -)

GUILLEMOT

(Total: 33; Farne Is.: 24; local: -)

9.7.60	*Berwick-on-Tweed	24.2.62
22.6.61	Noordwijk-aan-Zee, Zuid Holland, Netherlands (found oiled)	20.1.62
"	6 m. S.E. of Girdle Ness, Kincardineshire (found dead in fishing net)	(23.6.62)
24.6.61	Happisburgh, Norfolk	30.12.62
1.7.61	Texel, Netherlands	6.1.62
23.6.62	Røvaer, nr. Haugesund, Rogaland, Norway (shot)	17.10.62
"	Felixstowe, Suffolk (found moribund — oiled)	3.12.62
"	Skudeneshavn, Karmøy, Rogaland, Norway (shot)	mid-Dec. 1962
9.7.62	Kvitsøy Island, Boknfjorden, Rogaland, Norway (shot)	25.11.62

PUFFIN

(Total: 27; Farne Is.: 25; local: -)

10.6.55	*6 m. E. of Berwick-on-Tweed — 2 birds (caught in drift net — released without rings)	ca. 23.6.62
20.4.57		

- NOTES: 1. * Indicates bird ringed as adult.
 2. (juv.) Indicates bird ringed as juvenile.
 3. Unless otherwise stated all birds have been found either dying or dead, or are presumed dead.
 4. Where the date of recovery is unknown, the date of the reporting letter is given in brackets.
 5. "Local" recoveries include all birds (other than those on the Farnes) recovered within 15 miles of the islands.

