

The
Sussex
Bird Report

1969



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716

THE SUSSEX BIRD REPORT, 1969

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Kitson, S. Bayliss Smith

Programme: B. A. E. Marr (Chairman), R. E. Goddard, C. E. Hope,
Miss V. Newton

*The above list of Council Officers and Members shows all those holding office at
the 30th June, 1970.*

Mr. A. B. Sheldon did not stand for re-election as Editor in 1970, having left Sussex for Malaya, and Mr. S. Bayliss Smith was elected in his place at the Annual General Meeting held on 4th April, 1970.

Mr. Sheldon had held the position since the Society's formation and an appreciation of his very valuable work with the Sussex Bird Report appears in the Secretary's Report.

The post of Assistant Recorder, which had been vacant since the death of Mr. G. R. Gervis in March, 1969 was also filled at the Annual General Meeting, when Mr. S. W. M. Hughes, who has been organizing the Society's survey work, was elected.

SECRETARY'S REPORT

The eighth year of the Society's life saw further progress in the climb towards the 1,000 members, and the year ended with the membership standing at 906; this was a welcome continuation of the trend in 1968, and in two years the membership has jumped from 520 to 906.

The Officers and Council of the Society during 1969 were Guy Mountfort (President), Dr. M. Hollings (Vice-President), Mr. B. A. E. Marr (Hon. Secretary), Mr. C. F. Helyer (Hon. Assistant Secretary), Mr. R. E. Goddard (Hon. Treasurer), Mr. M. Shrubbs (Hon. Recorder), Mr. A. B. Sheldon (Hon. Editor), and Messrs. C. G. des Forges, S. W. M. Hughes, C. M. James, D. C. Lang, R. J. Sandison and Dr. A. B. Watson; Mr. Lang acted as the Society's Conservation Officer. The office of Hon. Assistant Recorder remained vacant after the sad death of Mr. G. R. Gervis in March until Mr. S. W. M. Hughes was elected to fill this vacancy at the eighth Annual General Meeting in April, 1970.

The Secretary was greatly helped in his work during the year by the "unofficial officers" of the Society, and wishes to express his great debt to the Membership Secretary, Mr. D. J. Taylor, Lecture Secretary, Miss Veronica Newton, and Field Outings Secretary, Mr. C. E. Hope, as well as to Mrs. Iris Simpson and Mrs. Norma Petrie Hay for typing help, and to Mr. Tom Palmer for packing and posting the literature sent out during the year.

The Accounts for the year 1969, thanks to an increased membership combined with a very careful watch on expenditure, resulted in a surplus of £176, excluding the film show profit which was placed to the credit of the newly-created Conservation Fund. The comparable surplus in 1968 was only £14 and the improved figure for 1969 was particularly gratifying as it meant that the subscription would not have to be raised in 1971 as the 1968 figures suggested. Members will realise that a decision to raise subscriptions has to be taken at least twelve months ahead. Provided that membership is maintained it will now be possible to increase the amenities of membership in the future. The expenditure on indoor meetings has been rigidly curtailed for the last two years in spite of increased costs of room hire. The item in the Accounts entitled "J. Petrie Memorial Fund" represents donations in his memory from the friends of Jim Petrie a member who died during 1969 and the proceeds will be used for some suitable purpose to be agreed upon in conjunction with the donors. Thanks are expressed to Mr. A. J. Cooke who assisted the Hon. Treasurer by keeping the Membership Register and dealing with covenanted subscriptions. The Council are grateful to those who have executed covenants in respect of their subscriptions but are disappointed that so far these represent only 5% of the membership.

The Junior Section lost its keen and efficient Secretary in April, 1970, when Mrs. Mary Bonham (nee Greenhalf) retired on leaving to live in Bedford. We were very pleased that Mr. W. Merritt, who had been associated with the Section and had helped it considerably in recent years, agreed to take over the secretaryship. In Mrs. Bonham's last year of office, the Section showed a further increase in size, and extended its activities to include making nestboxes and organising a rookery census. This seems a suitable opportunity to offer her the Society's gratitude for all the prudent advice and encouragement she has given to so many young ornithologists in the four years of her secretaryship; we wish Mr. Merritt every success in continuing this excellent and invaluable work.

The Records and Editorial Committee suffered a great blow with the death of its Secretary, Mr. Geoffrey Gervis, in March, and operated without a formal

Secretary from then until the end of the year. Its members were Mr. M. Shrubbs (Recorder and Chairman), Dr. M. Hollings, Mr. D. S. Flumm, Mr. A. R. Kitson, Mr. S. W. M. Hughes, Mr. B. A. E. Marr, Mr. R. F. Porter and Mr. A. B. Sheldon (Editor). Mr. Flumm and Miss Jean Stacey gave the Recorder considerable assistance in collating and entering up records in the Society's files. Dr. Hollings went abroad in October, on an eight month appointment to Kenya, and his presence on the Committee was missed greatly. Mr. Sheldon left the country early in 1970 on being posted to Malaya by his firm for two years.

Mr. Sheldon had been Editor of the Sussex Bird Report since 1962, and in the seven reports which he edited up to 1968, the last one of these published in September, 1969, had helped to build up the Report to a commendably lengthy and comprehensive document. Always of a very high standard, it has been packed with information and results. He maintained an accuracy and an attention to detail which could not be equalled, and his hard work and considerable technical knowledge and ability were a tremendous asset to the Society, and especially to this Committee.

Work on the Rye Harbour nature reserve project continued during the year, with several meetings of the Committee established for this purpose, and although there were no tangible results by the end of 1969, much had been done by then to result in great steps forward early in 1970, as will be reported later.

The Society's indoor meetings totalled six, of which four were in Brighton, one in Chichester, and one in Eastbourne. One of the Brighton meetings was another public film show at The Dome, for the second year running, in conjunction with the Royal Society for the Protection of Birds. The latest of their colour films were shown, and an audience of 1,600 helped to make this a most successful event. Miss Veronica Newton carried out most of the local organisation, and has our considerable gratitude for her hard work in the staging of the show.

The field outings during the year totalled twenty-five and as always, were arranged by Mr. Hope to offer as wide a choice as possible to members in dates and places to visit. We managed to find our usual share of rarer birds, and this year's selection included an Alpine Swift at Beachy Head on September 27th and, for some who stayed late, a Red-throated Pipit there on the afternoon of October 19th. An innovation in the autumn was that of special outings to cater for beginners to bird watching, concentrating on identification of the commoner birds.

Mr. Ian Willis again helped to illustrate the four Newsletters issued in the year, and provided once more the cover for the Sussex Bird Report. A new publicity leaflet which he designed was produced during the year.

Mr. David Lang continued his work as Conservation Officer and was particularly concerned with Glynde Reach, Barcombe Mills Reservoir, Arlington Reservoir (under construction), Chichester Gravel Pits and Chichester Harbour. It was heartening to be able to report real progress in several of these projects, since concessions are only to be won after considerable effort. This facet of the work of our Society is bound to demand more work and expenditure in the coming years if we are to maintain and improve the status of our birds.

The Society entered an exhibit in the South of England Agricultural Show at Ardingly in June, and in a local show at Horam the following month. Miss Wendy Dickson organised the first of these and helped considerably at the second, and we are grateful to her and her team of helpers for their efforts and hard work.

A grant of £10 was made in 1969 to the Beachy Head Ringing Station, and at a collection at the Annual General Meeting, the sum of £54 10s. was raised

towards the British Ornithologists' Union's Marismas Appeal, which the Council brought up to £60 to be handed over.

The Officers and Council of the Society lost two very valuable members during the year, both very difficult to replace; it is essential that voluntary help is forthcoming to ensure the continued existence of a thriving Society. Will you help?

CONTRIBUTORS AND ACKNOWLEDGEMENTS, 1969

We are grateful to the following observers for records and we also wish to thank all those observers who helped with the Society's breeding surveys—their names are marked with an asterisk:

- | | | |
|-------------------------|--------------------------|--------------------------|
| *K. G. Adsett | R. H. Charlwood | *Mrs. Godfrey |
| *A. F. Airly | Chichester Ringing Group | *B. A. Goodchild |
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| Mrs. H. Newham | *D. Sore | *F. R. Wright |
| *Miss M. G. Newman | *Mrs. W. H. Spear | *M. M. Yorwerth |
| B. Newport | | |

Breeding Surveys

During the year the Society's breeding surveys of Stonechat, Swift, Collared Dove, House Martin, Woodlark, Nightjar, Redstart and Tree Pipit were continued. S. W. M. Hughes organised the surveys and prepared the summaries for the systematic list. No new surveys were started in 1969, but M. Glaister, R. R. Greenhalf, and W. Merritt continued the Grey Wagtail survey they started in 1967.

B.T.O. National Census of Heronries

All the Sussex Heronries were visited in 1969 for this census, as they have been annually since it began. We are grateful to the following observers for their assistance:—
J. Ashbee (Lensing), D. R. Coda (Eridge), C. F. Helyer (Henfield), J. A. Hicks (Glynde, Priethavens, Westham), A. K. Hughes (Parham), D. C. Lang (Glynde, Firle), L. Pelling (Fishbourne), Maj. W. W. A. Phillips (Pagham), F. C. Simmonds (Wardling).

Operation Seafarer

A complete count of sea-birds nesting in the county was made in 1969 for this important National Survey of all sea-birds nesting in Britain and Ireland, organised by the Sea-bird Group. We wish to thank the following observers for help with the counts:—

J. Ashbee (Rye Harbour), H. A. R. Cawkell (Hastings and St. Leonards), Rev. J. H. K. Dagger (Chichester Harbour), W. E. Haines, P. J. Mabey, S. J. R. Rumsey (cliffs, Hastings to Pett), M. J. Helps, A. R. Kitson, B. A. E. Marr, R. F. Porter, I. R. Willis (chalk cliffs), R. E. Scott (Midraps/Wicks), M. Shrubbs (Pagham Harbour).

B.T.O. Atlas

Dr. A. B. Watson, 83 Buckingham Road, Shoreham, is organising this project in the County for the B.T.O. and the Society is giving him full support. More coverage is needed for many 10 Km squares, and Dr. Watson would be pleased to hear from any contributors willing to assist with this simple survey.

Wader Counts

Wader counts were continued in the main estuaries (see page 55) and Dr. M. Hollings organised the counts. All the figures obtained are being contributed to the B.T.O. Estuaries Survey started in the autumn of 1969. We wish to thank all the observers for their valued help with the project.

Counters were:—

R. Batchelor, D. S. Flumm, T. E. Hale, M. J. Helps, J. A. Hicks, Dr. M. Hollings, L. G. Holloway, R. J. B. Jackson, C. M. James, M. A. Jennings, J. P. McTear, B. A. E. Marr, R. F. Porter, S. Richardson, H. P. K. Robinson, R. J. Sundison, M. Shrubbs, Dr. A. B. Watson, E. T. Welland, R. Williamson, I. R. Willis.

Wildfowl Counts

J. W. Clark (32 Gundreda Road, Lewes) continued to handle the organisation of the National Wildfowl Counts. We are grateful to the organiser for making the records available to the Society.

Counters were:—

R. B. Barstow (Powdermill Res.), D. R. Coda (Glynde Levels), A. J. Cooke (Cuckmere Valley), J. Fowler (Chichester G.P.), D. C. Lang (Barcombe Res.), Miss V. Maxse (Burton Pond), J. P. McTear (Rye Harbour and Pett Level), C. E. Messer (Amberley/Pulborough marshes), G. M. Moll (Kepp Lake and Warnham Mill Pond), D. R. Park (Swanbourne Lake and Patching Pond), J. Reaney (Darwell Res.), C. F. Tebbutt (Weir Wood Res.), D. S. Flumm, T. E. Hale, Dr. M. Hollings, M. A. Jennings, R. F. Porter, R. Williamson (Chichester Harbour), H. P. K. Robinson, M. Shrubbs (Pagham Harbour).

Regular observations of migration were made at Selsey Bill by D. S. Flumm, H. P. K. Robinson and others and at Beachy Head by B. E. Cooper, M. E. Nolan, A. Quinn and many others. Detailed summaries of the records from each locality were prepared by those named; a most helpful service in compiling the Report.

The volume of routine work involved in preparing the Report increases annually and we also wish to acknowledge considerable assistance from R. J. Sandison, who has again gathered much valuable information on predators and prepared the summaries for the systematic list, D. S. Flumm, Miss J. V. Stacey and Mrs. N. Petrie-Hay who have helped with much of the routine work of filing records and typing the report, and P. J. Wilson, who has dealt with the ringing report. Their help is greatly appreciated. Spreading the work in this way is now inevitable, but it should be noted that any confidential records received are handled only by the Recorder.

CLASSIFIED RECORDS FOR 1969

Recoveries of birds ringed have not been cross-referenced to the ringing report. The wildfowl tabulation and the report on Wader Counts should be read in conjunction with the notes under individual species for a complete picture.

Abbreviations: "G.P."—grave pits. "S.F."—sewage farm. "E," "W," etc.—cardinal points of the compass are intended only to give a general direction unless the context indicates otherwise. In particular this applies to birds going up or down the Channel and which are referred to as flying E. or W. "s/p," "w/p"—summer or winter plumage. "c/"—clutch size in nest found. "Brit. B."—British Birds (Rarities Committee).

Definition: "Days watching"—the number of days in which watching was done in an area; the number of hours of observation of visible passage are also shown in brackets.

Initials: Observers' initials are given only with the more unusual occurrences, except in the case of very rare breeding species.

1. **BLACK-THROATED DIVER** (*Gavia arctica*).—See under diver species (*Gavia* sp.)

2. **GREAT NORTHERN DIVER** (*G. immer*).—One off Pilsey Island on Dec. 1st (PF, IRW). See also under diver species.

4. **RED-THROATED DIVER** (*G. stellata*).—Present in small numbers along the whole length of the coast between January and March, but only in Rye Bay, where there was a maximum of 16 on Jan. 4th, were more than 2 recorded together. Some passage noted off Selsey Bill in January and February is tabulated, with the spring and autumn movements, under diver species. Very few present at the end of the year.

A number of oiled birds were recorded, particularly between January and March, see tables page 60.

DIVER SPECIES (*Gavia sp.*).—All records of diver movements are included under this heading, although a proportion of the birds were specifically identified. Presenting the record thus gives a clearer picture of the pattern of occurrence of each species as a migrant. All identifications of *arctica* and *immer* were made by very experienced observers.

DIVER PASSAGE TOTALS 1969

	Selsey Bill				Beachy Head	
	Jan. & Feb. E W	Mar. 1st-May 31st E W	Aug. 3rd-Dec. 31st E W	Mar. 2nd-June 1st E W		
<i>G. arctica</i>	0 4	10 2	2 4	10 0		
<i>G. immer</i>	0 1	3 3	0 9	2 0		
<i>G. stellata</i>	5 15	37 9	3 31	15 0		
<i>Gavia sp.</i>	10 41	62 21	19 57	116 1		
Days watching	19 (65hrs.)	57 (462hrs.)	40 (322hrs.)			

Peak movements in the spring were: Selsey Bill, 10 E. on May 4th; Beachy Head, 36 E. on May 3rd. The autumn peak occurred on Dec. 7th at both stations, with 12 off Beachy Head and 4 E. and 34 W. off Selsey Bill.

5. **GREAT CRESTED GREBE** (*Podiceps cristatus*).—At the coast between January and March there were maxima of 19 off Selsey Bill on Jan. 5th, 35 off Rottingdean on Feb. 4th and c. 200 in Rye Bay on Jan. 7th. Elsewhere a total of only 5 recorded. Rather fewer noted wintering inland than of late, a total of 14 in 3 localities. Records suggesting spring passage were 26 at Weir Wood Res. on Mar. 9th and 10 at Knepp on Apr. 19th.

Little change in breeding numbers noted and pairs were recorded as follows:

BREEDING PAIRS 1969

Locality	No. of pairs	Locality	No. of pairs	Locality	No. of pairs
Lurgashall Pond	1	Hammer Pond	1	Horsted Keynes	2
Shillinglee Park	2	Barnhouse Pond	1	Weir Wood Res.	5
Chichester G.P.	20	Birchen Bridge	1	Eridge Park	1
Peworth Park	2	Slaugham Place	1	Darwell Res.	1
Burton Park	2	Pond Leigh	2	Powdermill Res.	1
Knepp	2	Balcombe Lake	1	Pett Level	1
Warnham Mill Pond	2	Flattenden Park	4	Rye Harbour G.P.	2

Breeding success was again poor; 25 broods noted averaged 1.5 young. This average may be high since the maximum count of young at Chichester G.P. was only 20. Two summered in Pagham Harbour and there were 2 off Newhaven on June 25th.

At the coast in November and December there were maxima of 60 off Bexhill on Nov. 25th and 52 off Rottingdean on Dec. 31st. Elsewhere a total of 28 recorded in 3 localities. Five localities inland held a total of 49 birds, which included a count of 37 at Weir Wood Res. on Nov. 16th. See also tables of oiled birds, page 60.

6. **RED-NECKED GREBE** (*P. griseigena*).—Single birds off Church Norton on Jan. 1st and 5th (DSF, HPKR); off Pett Level on Jan. 2nd and possibly the same bird off Bexhill on Mar. 30th (WEH, PJM, SJRR) and at Newhaven Tidemills and Litlington on Feb. 19th (RB, MJR). An oiled bird picked up dead at Thorney on Jan. 19th (TJC).

At the end of the year singles at Newhaven Tidemills on Nov. 11th (MJR) and Pett Level on Dec. 29th (JA).

7. **SLAVONIAN GREBE** (*P. auritus*).—Between January and March there were up to 3 in Chichester Harbour and 13 off Church Norton, where the last was seen on Apr. 13th. Three off Pett Level on Jan. 2nd, one on Rottingdean Pond on the 22nd and one at Brooklands, Worthing, on Feb. 22nd. One on Amberley Wildbrooks on Jan. 26th (KAH). In April there were 8 off Beachy Head on the 7th and one there on May 3rd.

At the end of the year one in s/p at Weir Wood Res. on Oct. 5th, a maximum of 9 off Church Norton on Dec. 13th, up to 3 off Bexhill in November and December, one off Pilsey on Nov. 17th and one at Barcombe Res. on Dec. 21st.

8. **BLACK-NECKED GREBE** (*P. nigricollis*).—One off Pagham on Jan. 5th. In the autumn one at Sidlesham Ferry on Sept. 15th and 16th and one at Chichester G.P. between Sept. 20th and Oct. 26th, with 2 from Sept. 21st to Oct. 4th and 3 on Sept. 27th and 28th.

SLAVONIAN/BLACK-NECKED GREBE.—Up to 5 off Church Norton in January.

9. **LITTLE GREBE** (*P. riflicollis*).—Between January and March totals of 56 noted in 7 coastal localities and 25 in 7 inland. Eighteen at the Cuckmere on Feb. 19th was the largest party.

Only 14 breeding pairs reported, at Thorney Deepes, Lurgashall Pond, Shillinglee Park, Sidlesham Ferry, Chichester G.P. 2, Swanbourne Lake, Burton Park 3, Coolham, Weir Wood Res., and Rye Harbour G.P. 2. Only 5 of these pairs apparently raised young, a total of 11 being seen. Other breeding season records came from Milland Place, Heyshott Pond, Byworth, Wiston Lake, Pond Leigh, Plumpton Green, Tarring Neville, Glyndebourne and the Cuckmere valley.

In November and December 75 recorded from 6 coastal localities and 30 in 7 inland. The largest parties were 32 at the Cuckmere on Nov. 17th and 19 at Bosham on Dec. 10th.

14. **STORM PETREL** (*Hydrobates pelagicus*).—One at Bexhill on Oct. 16th (SR).

16. **MANX SHEARWATER** (*Puffinus puffinus*).—Single birds flew W. off Beachy Head on Apr. 13th (RB, BW), E. there on May 30th (MJR) and W. off Selsey Bill on May 17th (DSF, HPKR). In June 3 E. off Beachy Head on the 17th (MJR) and 4 W. off Selsey Bill on the 21st (HPKR). All birds were of the race *puffinus*.

26. **FULMAR** (*Fulmarus glacialis*).—First recorded at Beachy Head on Feb. 16th and birds present there until at least July 6th, with a maximum of 45. Prospecting behaviour by pairs was again regularly recorded at Beachy Head but none bred. All the cliffs were visited during Operation Seafarer and prospecting birds were also noted as follows: 2 at Saltdean, 5 pairs at Seaford Head, 2 pairs at Hope Gap, 6 at Cuckmere Haven and a pair between Fairlight Glen and Cliff End. There were 35 at Seaford Head on Apr. 17th.

A further increase of records at Selsey Bill, where 22 flew E. and 192 W. in 57 days (508hrs.) watching between Mar. 22nd and June 22nd. Peaks were 22 W. on Apr. 22nd and 22 W. on May 17th.

There were 3 August records and one flew W. off Bexhill on Nov. 24th.

27. **GANNET** (*Sula bassana*).—Records from Selsey Bill are tabulated:

	Jan.		Feb.		Mar. 23rd-May 31st		June		July-Dec.	
	E	W	E	W	E	W	E	W	E	W
Days watching	2	9	nil	77	182	20	397	140	287	
	11 (38hrs.)		8 (27hrs.)		48 (428hrs.)		10 (82hrs.)		48 (420hrs.)	

The largest movements were 20 W. on Apr. 24th, 367 W. over June 21st/22nd and 33 W. on Dec. 21st. At Beachy Head a total of 74 noted between Mar. 23rd and early June, with a maximum of 22 E. on Apr. 13th; spring movement there was predominantly E. rather than W. as off Selsey Bill. Regularly noted in the autumn, with a maximum of 10 on Aug. 25th.

One was picked up long dead at Wiston Lake on Sept. 30th and 40 flew W. off Bexhill on Nov. 24th. See also tables of oiled birds, page 60.

28. **CORMORANT** (*Phalacrocorax carbo*).—Records came from the whole length of the coast and from 7 inland localities. The table below summarises the records by months, but may be incomplete; it is designed only to give some measure of the species' abundance.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Coast	96	122	114	99	36	8	15	50	85	66	124	76
Inland	14	27	16	14	7	0	0	4	5	24	50	9

Twenty flying W. off Selsey Bill on Nov. 30th were possibly on passage. On July 12th a party of 2 adults in s/p and 5 immatures were found on Seaford Head. It is possible that they bred locally since this appeared to be a family party.

29. **SHAG** (*P. aristotelis*).—Rather more records than of late. Off Selsey Bill singles flew E. on May 25th, Aug. 23rd, Sept. 1st and Nov. 16th, with one offshore on Sept. 21st. One was present in the Newhaven area in March and there were 2 there in November. A party was present in the Seaford Head/Beachy Head area between Mar. 30th and July 6th, a maximum of 7 together being seen; at least 5 of these birds were immatures. One off Beachy Head on Sept. 22nd. One flew W. off Bexhill on Mar. 30th and singles in the Rye area on Feb. 1st and Sept. 28th.

30. **HERON** (*Ardea cinerea*).—All known Heronries were visited and one new colony recorded, at Wartling. This was first noted in 1968 and probably stems from the original colony known there between 1960 and 1964. The numbers of occupied nests were as follows: Old Park Wood, Fishbourne, 23; Pagham, 6 plus one probably occupied; Parham, 33 plus 11 probably occupied; Henfield, 6 plus 2 probably occupied; Glynde, 4; Firle, 30; Priestshaws, 6; Glynleigh, one; Wartling, 9; Eridge, 7; Westham, 2; Leasam, 33. The total of 160-174 occupied nests is an increase of about 19% compared with 1968 and is the highest since 1957.

Records suggesting passage were: 2 E. off Bexhill on Mar. 16th; one in NW. at Selsey Bill on the 21st; 2 in NE. from the sea at Rottingdean on Sept. 19th and one out SW. at Selsey Bill on Nov. 30th. Nine noted at Beachy Head between Aug. 31st and Sept. 28th, including 6 E. on Aug. 31st.

36. **NIGHT HERON** (*Nycticorax nycticorax*).—An immature picked up at Rye on Sept. 29th (RES). The skin is now in Dr. J. M. Harrison's collection and the record has been accepted by *Brit. B.*; it is the eighth for Sussex.

37. **LITTLE BITTERN** (*Ixobrychus minutus*).—An adult male at Clichester G.P. on June 8th (AHID). This record has been accepted by *Brit. B.*

38. **BITTERN** (*Botaurus stellaris*).—Single birds at Chichester G.P. on Jan. 13th (CMI, CMV), Amberley Wildbrooks on Feb. 12th (MH), Rye Harbour on the 24th (JA), Milton Mount on Mar. 1st (RL, DP, TJC) and Thorney Deepes on Mar. 16th (DSF). There was also one at Plashett Park early in the year (per KMRB). One at Northchapel from Dec. 17th to the end of the year (GR, DG *et al*) and one at Burton Park on the 24th (PG).

45. **MALLARD** (*Anas platyrhynchos*).—See table for winter populations. Additional counts were of 500 in Lewes Brooks on Jun. 1st, 250 in Norman's Bay on the 5th and maxima of 150 at Swanbourne Lake in the early months and 245 at the end of the year.

Breeding records received totalled 65 pairs in 12 localities; this figure is obviously far below the true breeding population. Breeding success was very much as in 1967 and 1968, with 19 broods totalling 119 young recorded, an average brood size of 6.2. JA, however, noted an exceptionally good breeding season in the Rye area.

46. **TEAL** (*A. crecca*).—See table for winter populations. Additional counts were of maxima of 125 in the Selsey area in the early months and 125 at the end of the year, and 150 on Horseye Level on Dec. 27th. Smaller parties totalling 360 birds were also noted in 17 localities between January and March and totalling 54 birds in 6 at the end of the year.

A total of 14-15 pairs recorded in the breeding season as follows: Sidlesham, one; Lurgashall Pond, 3; Shillinglee Park, 4; Burton Park, 3; Weir Wood Res., one or 2; Crowhurst marsh, one; Rye Harbour G.P., one. Only one brood was seen, at Weir Wood Res. Between April and July there were also birds at Danehill, Wakehurst Place and Isfield in suitable breeding sites.

47. **GARGANEY** (*A. querquedula*).—The first recorded were 6 at Crowhurst Marsh on Mar. 5th and 5 at the Cuckmere on the 7th. Spring passage was most marked in March, with a total of 28 noted along the coast and inland. April records were of 2 at Sidlesham Ferry between the 6th and 13th, 2 E. off Beachy Head on the 6th and 2 at Steyning on the 19th.

No definite breeding records but birds were noted in 4 areas in late May and in another in July.

In the autumn a total of 39 recorded between July 29th and Aug. 30th, including parties of 23 at Sidlesham Ferry on Aug. 12th and 7 W. off Selsey Bill on the 17th. One at Littleington on Sept. 15th was the last recorded.

49. **GADWALL** (*A. strepera*).—The wintering flock at Chichester G.P. continued to increase, with a maximum of 25 in January declining to 9 on Mar. 8th, apparently the last record in the early months. The first autumn bird was seen on Sept. 25th and numbers rose to a peak of 43 on Dec. 7th.

Elsewhere 2 at Thorney on Feb. 16th, 2 at Rye Harbour G.P. on Mar. 24th and 27th, when there were also 4 at Pett Level. One flew E. off Selsey Bill on Apr. 20th. In the autumn 2 at Weir Wood Res. between Aug. 25th and 30th and one at Barcombe Res. on the 31st and Sept. 9th. Three at Darwell Res. on Dec. 14th.

50. **WIGEON** (*A. penelope*).—See table for winter populations. No other significant winter flocks were recorded. One at Rye Harbour G.P. on July 13th and 25 off Selsey Bill on Aug. 24th. In March 237 flew E. and 3 W. off Selsey Bill in 11 days (63hrs.) watching. There were no autumn movements there but c.270 flew W. off Bexhill on Nov. 24th.

52. **PINTAIL** (*A. acuta*).—See table for winter populations. The only other winter records were 2 at Swanbourne Lake on Jan. 25th and one at Crowhurst marsh at the end of the year. In the spring there were very small E. movements along the coast in April, involving 21 birds; in the autumn small W. movements there involved c.63 birds in November and December.

53. **SHOVELER** (*A. clypeata*).—See table for winter populations. No other significant winter records. Spring passage at Selsey Bill totalled 102 E. and 3 W. in 27 days (208hrs.) watching between Mar. 22nd and Apr. 30th; at Beachy Head 123 flew E. in April. The largest movement was 96 E. off Beachy Head on Apr. 7th.

Only one definite breeding pair found, with 2 small young on June 30th, but records from 2 other areas in June and July suggest that breeding may have been attempted.

55. **SCAUP** (*Aythya marila*).—At the coast between January and March up to 23 were wintering in Norman's Bay and one at Thorney were the only records. Inland single birds at Chichester G.P. on Jan. 18th, Barcombe Res. on the 19th and Weir Wood Res. on Feb. 7th. One flew E. off Beachy Head on Apr. 7th and 3 likewise on the 20th.

More numerous at the end of the year, with up to 3 in the Pagham/Selsey area, up to 20 off Bexhill and up to 35 in the Rye area during November and December.

Ducks.—The table below sets out the peak numbers of the regular and common species in each winter period (January to March and October to December) at all the principal wintering areas in the county. It is thus designed to show the relative importance of these areas to wildfowl and give some indication of the maximum wintering population. All these localities are covered by the National Wildfowl Counts organised by the Wildfowl Trust. These figures, together with others held by the Society have been used in compiling this table. The systematic list is largely confined to records outside the scope of the table.

PEAK WINTER POPULATIONS OF DUCK

Locality	Mallard		Teal		Wigeon		Pintail		Shoveler		Tufted Duck		Poehard	
	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	Jan/Oct/ Mar. Dec.	
Chichester Harbour	120	230	240	200	600	150	16	19	12	0	195	14	33	0
Chichester G.P.	560	65	200	230	30	50	0	16	50	60	360	265	395	235
Pagham Harbour	350	300	315	255	395	300	13	24	0	18	20	50	12	35
Burton Pond	20		20	20	0	0	0	0	0	0	35	20	5	0
Amberley/Pulborough	200	50	270	105	1200	950	18	2	12	6	10	0	0	0
Knepp	150	140	70	0	280	0	15	0	20	0	0	0	35	0
Weir Wood Res.	400	175	75	120	130	50	0	0	4	1	65	120	100	80
Barcombe Res.	135	75	40	25	500	600	14	0	6	5	50	45	65	25
Glynde Levels	200	85	600	200	800	400	4	10	20	0	20	0	2	0
Cuckmere	125	50	50	85	150	120	5	0	1	0	6	5	0	0
Darwell Res.	210	135	80	100	255	60	0	1	0	0	35	80	40	3
Powdermill Res.	12	12	20	6	0	0	0	0	0	0	100	4	0	0
Pett Level	0	30	17	9	460	30	3	0	5	50	9	25	45	14
Rye Harbour	200	1000	65	60	380	140	0	0	9	20	60	25	410	500

NOTE: A blank indicates that no information was available. Figures from Pagham Harbour include Sidlesham Ferry

56. **TUFTED DUCK** (*A. fuligula*).—See table for winter populations. Additional counts were of small parties totalling 135 birds in 13 localities in the early months and 66 in 5 at the end of the year.

Twenty-six definite breeding pairs reported and new sites were Southerham and Piddinghoe, both in the Ouse valley. Records of pairs or birds present were rather more widespread than in 1968, suggesting a continued increase; at least some of these may have bred. Breeding success seemed rather lower than in 1968.

BREEDING OR RESIDENT PAIRS 1969

Locality	Pairs present	Pairs bred	maximum young recorded
Aldsworth Ponds	13	?	
Lurgashall Pond	1	1	7
Shillingee Park	2	0	
Chichester G.P.	60+ birds	7	25
Swanbourne Lake	2	1	3
Burton Park	3	1	5
Wiston Park	2	?	
Birchen Bridge	1	?	
Warham Mill Pond	1	?	
Gravelly Manor	2	?	2 broods
Wakehurst Place	4	?	
Coolhurst	4	?	
Fulkingmill	3	?	
Horsed Keynes	3	?	
Danehill (TQ 397281)	2	?	
Latchets (TQ 384265)	3	?	
Plumpton (TQ 363150)	1	?	
Rodmell	3	?	
Piddinghoe	1	1	brood brood
Southerham	1	1	6
Glynde Reach	1	1	11
Chailey West Lake	3	2	
Weir Wood Res.	1	?	
Rye Harbour G.P.	20 birds	1	9
	25 birds	8	37

57. **POCHARD** (*A. ferina*)—See table for winter populations. Additional counts were of 325 at Winchelsea on Jan. 12th and small parties totalling 42 birds in 3 localities in the early months and 34 birds in 2 at the end of the year. As usual a few in June and July, a total of c.23 birds in 4 localities, Chichester G.P., Burton Park, Weir Wood Res. and Pett Level.

60. **GOLDENEYE** (*Bucephala clangula*)—Between January and March c.95 were wintering in Chichester Harbour, mainly round Thorney Island and in Chichester Channel; about 13% were adult males. Elsewhere along the coast a total of c.18 recorded. Inland a total of 22 wintering in 6 localities, Chichester G.P., Burton Park, Patching Pond, the Ouse valley, Barcombe Res. and Weir Wood Res. There were 11 at Weir Wood Res. on Mar. 23rd and 23 flew out SE. at Selsey Bill on the 29th. Two at Weir Wood Res. on Apr. 21st.

In November and December c.65 present in Chichester Harbour and a total of 37 elsewhere along the coast, particularly off Bexhill, with a maximum of 20. There were 5 inland records.

60. **LONG-TAILED DUCK** (*Clangula hyemalis*)—The only records in the early months were of single birds at Weir Wood Res. on Jan. 7th, flying W. off Selsey Bill on the 12th, at Rye Harbour G.P. from the 25th to Feb. 2nd and flying F. off Beachy Head on Apr. 26th.

More numerous at the end of the year. Off Selsey Bill 15 flew W. between Nov. 16th and Dec. 31st, including 8 on Dec. 7th, and 10 flew W. off Bexhill on Nov. 24th. Wintering birds elsewhere were up to 3 in the Pagham area from Oct. 25th; one at Chichester G.P. from Oct. 22nd, with 2 on Nov. 26th; up to 3 in the Rye area from Oct. 30th and one off Bexhill in November and December. There were also singles in Chichester Harbour on Nov. 8th and off Seaford on Dec. 7th.

62. **VELVET SCOTER** (*Melanitta fusca*)—Wintering birds between January and March were recorded in Rye Bay only, with a maximum of 11 on Feb. 15th. A small spring passage, with 6 E. off Selsey Bill on Apr. 20th and 12 likewise off Beachy Head between Apr. 4th and May 5th.

At the end of the year totals of 10 E., 4 W. and 3 offshore off Selsey Bill between Oct. 25th and Dec. 7th and one on several dates in November and December between Pett Level and Bexhill.

64. **COMMON SCOTER** (*M. nigra*)—Between January and March the only winter flocks noted were maxima of 20 off the Cuckmere and 300 in Rye Bay. There was another large spring passage. At Selsey Bill 3,310 flew E. and 55 W. in 67 days (544hrs.) watching March to June, peak 1,070 E. on Apr. 21st, when no sea-watching was done off Beachy Head. At Beachy Head 14,500 flew E. in the same period, peaks 12,200 on Apr. 7th and 1,130 on Apr. 20th. The movement of the 7th was the largest single movement yet recorded in Sussex.

At the end of the year very few appeared to be wintering, the maximum in Rye Bay being only c.100. See also tables of oiled birds, page 60.

67. **EIDER** (*Somateria mollissima*)—Rather larger numbers recorded than of late and noted in every month. Approximate monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
91	82	75	79	26	1	9	5	15	13	100	87

Birds were recorded along the whole coast and the largest wintering parties were up to 50 off Church Norton/Selsey Bill in January and February and 40 off Bexhill in November and December.

Some spring passage was noted off Selsey Bill, with 107 E. and 37 W. in 57 days (462hrs.) watching March to May, and 25 flew E. off Beachy Head between Mar. 25th and Apr. 27th. These passage totals are included in the table above. See also tables of oiled birds, page 60.

69. **RED-BREASTED MERGANSER** (*Mergus serrator*)—Rather scarce between January and March. C.40 were wintering in Chichester Harbour, mainly in the Thorney Channel/Plisey Island area, and 11 in Pagham Harbour. Elsewhere single birds only noted, except for 8 in Rye Bay on Jan. 2nd. It is of interest that none was found oiled in these months, despite the severe oiling that occurred, which suggests that the low numbers recorded above reflect a genuine lack of birds rather than observations. Off Selsey Bill in January, 59 flew E. and 153 W. in 11 days (38hrs.) watching. One at Darwell Res. on March 16th.

In the spring at Selsey Bill 560 flew E. and 123 W. in 57 days (462hrs.) watching from March to May; peak movements occurred between Apr. 4th and 8th, with 287 E.; at Beachy Head 142 flew E. between Mar. 23rd and May 6th with a peak of 64 on Apr. 7th. Autumn movements at Selsey Bill totalled 73 E. and 264 W. in 17 days (117hrs.) watching in November and December, peak 69 W. on Dec. 14th. On Nov. 24th 70 flew W. off Bexhill.

Wintering birds were also scarce at the end of the year, with maximum counts of 13 in Chichester Harbour and 22 in Pagham Harbour. One at Weir Wood Res. between Nov. 23rd and Dec. 27th.

70. **GOOSANDER** (*M. merganser*)—In the early months there were 4 at Rye Harbour G.P. (WM) and 7 at Chichester G.P. (BM) on Jan. 5th, with one in the latter area until Feb. 4th (many obs.); 4 at Darwell Res. on Jan. 12th (JR); one at Weir Wood Res. from Jan. 25th to Feb. 25th, with 4 there on Feb. 8th

(FML *et al.*); one at Barcombe Res. on Feb. 16th (DCL). One flew E. off Selsey Bill on Apr. 19th (DSF, HPKR).

At the end of the year there was one in Pagham Harbour on Nov. 2nd (LGH, DS) and one at Weir Wood Res. on the 24th, increasing to 4 by Dec. 27th (many obs.). Elsewhere in December singles at Pilsley Island on the 1st (PF, IRW) and Darwell Res. on the 14th (JB, TPD, JR) and 2 at Chichester G.P. on the 5th (JVS).

71. SMEW (*M. albellus*).—Single birds at Chichester G.P. from Jan. 10th to Feb. 22nd (many obs.) and at Rye Harbour G.P. on Jan. 11th and 12th (many obs.); 2 at Burton Park on Feb. 9th (CEM). Single birds off Selsey Bill on Dec. 6th (HPKR) and at Chichester G.P. on the 24th (JVS).

73. SHELDUCK (*Tadorna tadorna*).—The monthly maxima in Chichester and Pagham Harbours were as follows:

	Jan.	Feb.	Mar.	Apr.	May	Oct.	Nov.	Dec.
Chichester Harbour	3100	1150	1060	465	550	20	165	1800
Pagham Harbour	850	600	310	325	31	50	490	740

Elsewhere along the coast small wintering parties in several localities totalled c.60 birds at both ends of the year. As usual some wintered inland but fewer than of late; 16 in 4 localities in the early months and only 3 at the end of the year.

A small E. passage noted in the spring, with 84 E. and 33 W. off Selsey Bill in 57 days (462 hours) watching from March to May and 60 E. off Beachy Head between Apr. 7th and 26th.

No counts of breeding pairs were made in either Chichester or Pagham Harbours but counts of young were a maximum of 240 in Pagham Harbour on July 6th and 67 in Fishbourne Creek on the 26th. Elsewhere 5 pairs bred at Chichester G.P., with a maximum of 22 young seen, single pairs bred at Parham, Head, and 5 pairs reared 30 young in the Rye area. Birds were also noted in the breeding season at West Harting Pond, Lurgashall Pond, Stanstead, Burpham and Amberley Wildbrooks and there were 2 juveniles at Aldingbourne G.P. on Aug. 24th. The species is possibly spreading inland as a breeding bird. Breeding records, particularly from inland localities, of this species would be most welcome.

75. GREY LAG GOOSE (*Anser anser*).—Nine at Glynde Levels on Feb. 22nd (JR), one at Newhaven Tidemills from Mar. 23rd to 25th (many obs.) and one E. off Beachy Head on Apr. 14th (ARK). Two flew S. down the Cuckmere on Dec. 10th (MJR).

76. WHITE-FRONTED GOOSE (*A. albifrons*).—In January there were 38 at Norman's Bay on the 1st, 5 at Lewes Brooks on the 1st and 2nd, 8 at Glynde Levels between the 2nd and 15th, 30 flying W. off Brighton on the 15th and one at Pagham from the 28th to Feb. 1st. Three at Bracklesham from Feb. 9th to 15th and 12 flying NW. over Rye Harbour on the 15th, with one there on the 28th. In March 2 at Pagham on the 2nd, 13 flying over Rye on the 9th and 20 likewise on the 15th and one E. off Bexhill on the 17th.

At the end of the year 5 flew W. off Bexhill on Nov. 24th and 6 likewise off Selsey Bill on the 30th. In December there were 13 over Pevensey Bay on the 3rd, 7 over Rye on the 7th and 3 likewise on the 11th, 2 at Sidlesham Ferry from the 12th to 24th, 5 at Pagham on the 13th, one at the Midrips on the 27th and 35 at Barcombe Res. on the 28th.

78. PINK FOOTED GOOSE (*A. brachyrhynchus*).—Single birds at Norman's Bay on Jan. 1st, with White-fronts (WEH, PJM) and at Shoreham on Feb. 16th (CEM). On Apr. 7th a party of 12 flew E. off Beachy Head (BAEM *et al.*), the latest spring record for the county.

GREY GOOSE SPECIES (*Anser sp.*).—Four flew W. off Selsey Bill on Feb. 15th and 18 likewise over Slinfold on the 17th. In November there were 10 at Pulborough on the 14th, 54 flew SW. over Partridge Green on the 22nd and 14 flew W. off Selsey Bill on the 30th. In December 9 flew E. off Bexhill on the 9th, which were possibly *brachyrhynchus*, 11 flew SW. over Chichester G.P. on the 10th, which were probably *albifrons*, 7 near Bexhill on the 11th, 15 at West Chilington and 15 flying E. at Newhaven on the 19th, 15 over Eastbourne on the 24th, 3 W. over Sullington on the 26th and 20 E. over the Cuckmere valley on the 30th.

80. BRENT GOOSE (*Brantha bernicla*).—All records refer to the race *bernicla*. The monthly maxima in Chichester and Pagham Harbours were as follows:

	Jan.	Feb.	Mar.	Apr.	Oct.	Nov.	Dec.
Chichester Harbour	2455	1700	1150	500	15	7	850
Pagham Harbour	15	43	275	nil	4	40	90

The only wintering birds noted elsewhere were 18 in the Rye area during January. The March figure in Pagham Harbour certainly refers to passage birds and no figure was obtained for Chichester Harbour in November. A small W. passage was noted off Selsey Bill in January and February involving 145 birds in 19 days (65 hrs.) watching.

A very marked E. passage in the spring between Mar. 6th and Apr. 27th off the whole coast, particularly on Mar. 17th when movement was noted at 7 localities between Selsey Bill and Rye. The total involved a minimum of 1,275 birds and the largest numbers were 275 in the Pagham/Selsey area on Mar. 8th, 200 E. off Seaford Head on the 10th and 590 E. off Bexhill on the 17th. On the 23rd one was seen in the Arun valley (MAH, SWMH, MMJ).

The first autumn records were of 4 at Pagham on Oct. 20th and 15 at Pilsley Island on Oct. 25th and between Nov. 1st and Dec. 31st c. 230 were recorded moving W. along the coast; maxima were 37 off Pevensey on Nov. 5th and 75 off Bexhill on the 24th.

81. BARNACLE GOOSE (*B. leucopsis*).—Two at Earmley on Mar. 5th departed NW. (JVS).

82. CANADA GOOSE (*B. canadensis*).—Winter counts from the principal localities for the species are tabulated below:

Locality	Jan.	Feb.	Mar.	Nov.	Dec.
Amberley/Pulborough	150	—	40	75	—
Knepp	80	—	—	—	23
Warnham Mill Pond	16	20	20	30	—
Weir Wood Res.	7	40	35	15	14

In addition small parties totalling c.27 birds noted in 5 localities in the early months and up to 16 at Rye Harbour at the end of the year. Successful breeding was recorded at Lurgashall Pond, Chichester G.P., Knepp, Coolham, Pond Leigh and Rye, all single pairs; 25 goslings were reported. Other breeding season records came from 7 localities.

85. **WHOOPER SWAN** (*Cygnus cygnus*).—Three at Southsea from Feb. 20th to Mar. 2nd (many obs.). One flying SW. over Pevensy Levels on Oct. 16th (RH). This is the first October record for the county; very close views were obtained and a satisfactory description supplied. Two in the Glynde area from Dec. 15th to 29th (DCL, PF, IRW).

86. **BEWICK'S SWAN** (*C. bewickii*).—In the early months there were 10 in the Amberley/Pulborough marshes on Jan. 10th, with 7 there until the 29th; 2 at Glynde Levels throughout January and 3 there from Feb. 24th to Mar. 5th; 2 at Weir Wood Res. on Jan. 17th; 3 at Chichester G.P. on Jan. 26th, increasing to 13 from Feb. 1st to Mar. 1st and 3 remaining to the 23rd and 4 on Pevensy Levels on Feb. 1st.

At the end of the year there were 7 in the Amberley/Pulborough marshes on Nov. 24th increasing to 26 by Dec. 28th and one on Pevensy Levels on the 27th.

91. **BUZZARD** (*Buteo buteo*).—Three pairs were present and may have bred but again no young were reported; single birds were present in 5 other localities in the breeding season.

Spring migration was confined to 2 passing N. over Little Common on May 18th but there was another marked autumn dispersal and migration. Eleven birds passed S. or SW. over the Downs between Sept. 3rd and Oct. 27th and one over Broadwater Forest on Sept. 26th; records included 3 together over Amberley Mount on Sept. 28th and 4 together over Findon valley on Oct. 27th. At the coast 10 were recorded at Beachy Head between Sept. 9th and 26th, with 4 out SE. on the 20th. One flew out SE. at Selsey Bill on Aug. 16th and, at Sidlesham, singles flew E. on Sept. 28th and SE. on Nov. 10th.

There were 5 winter records in the interior and one was ringed and released at Burgess Hill by JAW.

92. **ROUGH-LEGGED BUZZARD** (*B. lagopus*).—One was seen by HPKR near Chantontbury Ring on Dec. 28th, in the general area frequented by the species in the winter of 1966/67. The bird flew off N.

93. **SPARROWHAWK** (*Accipiter nisus*).—Although 10 known and 15 probable pairs were reported only 4 young were known to have been reared; breeding success thus appears rather poorer than 1968's total of 23 pairs and 8 young. There was good coverage of the county again throughout the year, particularly of West and Central Sussex. Singles were recorded in 15 other areas during the breeding season, possibly indicating resident birds, and from a further 5 localities during the winter.

Coastal movement was again well marked. In the spring single birds left the coast at Church Norton on Feb. 23rd and Sidlesham on Apr. 14th and up to 3 were seen at Beachy Head between Apr. 4th and 28th. In the autumn 8 were recorded at Beachy Head between Aug. 30th and Nov. 23rd and singles flew out SE. at Selsey Bill on Sept. 9th and N. on the 19th. A male was found dead at Seaford on Aug. 18th, after flying into a window.

98. **HONEY BUZZARD** (*Pernis ptilorvus*).—Three records only. In June one at Beachy Head on the 5th (MEC). In the autumn one flew out SE. at Beachy Head on Sept. 10th (RHC) and one flying SE. over Sidlesham Ferry on the 21st turned S. over Church Norton (AH, KAH, MS); it appeared to be a dark phase bird.

99. **MARSH HARRIER** (*Circus aeruginosus*).—There was an unusual record of a pale-headed bird flying over the outskirts of Eastbourne on Jan. 1st (DEM, MKM). Spring migrants were recorded at Beachy Head on May 13th (RHC), 28th (BEC), which departed E., and June 4th (RHC). In the autumn one was present at the Midrips from Sept. 24th to 26th (RES *et al*).

100. **HEN HARRIER** (*C. cyaneus*).—In contrast to recent years the species was less numerous, with a total of 16 only. Of these 7 probably over-wintered from 1968 as follows: singles at the Midrips from Jan. 9th to 12th and Mar. 1st, Lavington Common on Jan. 20th and near Norman's Bay on the 29th. One at North Stoke and one in the Friston/Jevington area on Feb. 2nd, a ringtail in the Amberley/Pulborough marshes from Feb. 9th to Mar. 23rd and a male there on Mar. 2nd and Apr. 7th.

There were two very late spring records, at the Midrips on May 4th (PCB) and a male near Cissbury Ring on the 11th (RL, RJS). Between Oct. 26th and Dec. 20th single birds occurred at East Dean, Glynde Reach, Church Norton, Amberley Wildbrooks, Crowhurst Marsh and Beachy Head. On Nov. 25th one came in from the sea at Goring and passed inland.

102. **MONTAGU'S HARRIER** (*C. pygargus*).—Records were much as in 1968. In the spring there were single birds at the Midrips between May 4th and 6th and at Beachy Head on May 28th and June 1st. Single females were reported in the interior on May 20th and between May 30th and June 4th, different birds. One at Beachy Head on Sept. 15th was the only autumn record.

HARRIER SP.—There were 9 records of harriers, either *C. cyaneus* or *pygargus* except for one bird, which were not specifically identified. In the spring there were 4 between Mar. 24th and June 11th and, in the autumn, 5 between July 2nd and Oct. 19th.

The autumn records included a male seen at Cissbury on Aug. 3rd by MH which was very pale, whitish grey, with only a very limited area of black on the wing tips, no white on the rump and no black bars on the secondaries. These points are characteristic of Pallid Harrier *C. macrorius* but the observer feels that the views obtained were not quite satisfactory enough for a certain identification. But it seems well worth placing this interesting report on record.

103. **OSPREY** (*Pandion haliaetus*).—In the spring one flying W. along the cliffs at Seaford Head on May 12th (MJR) was the only record.

The first autumn bird appeared over Selsey Bill on Aug. 23rd and after circling departed SW. (DSF). In September single birds were recorded from Beachy Head on the 19th (BEC, NAGL, BW) and 24th (RHC), which departed S. One was seen off Littlehampton on the 20th (FGW), which may have been the adult seen at Sidlesham on the 25th (CFH, RJS).

104. **HOBBY** (*Falco subbuteo*).—A further decline in breeding numbers was suggested, with only 5 probable and one possible pair found and no evidence of young being raised. However there were 14 records of single birds from other suitable breeding localities, so that further pairs may have been overlooked.

Spring passage was normal with 6 records at the coast, the first being a pair at Sidlesham on May 6th. Singles were seen at Selsey Bill and Beachy Head on May 17th and at Church Norton and Beachy Head on June 14th. There was more autumn activity with 14 records at the coast between Aug. 24th and Oct. 9th, when a late bird was seen at Beachy Head. Records included 2 together at Pebsham between Aug. 24th and Sept. 26th and over Sidlesham on Sept. 27th.

105. **PEREGRINE** (*F. peregrinus*).—Again a slight increase in records, involving some 10 birds. There was one at Selsey Bill on Feb. 9th and one over the Ouse near Southerham Reach on the 14th (MJH), which was probably the same as one at Piddinghoe on the 20th (DCL).

Spring records from the coast were one at Beachy Head on Mar. 13th (KV) and one flying S. over Cooden Beach on May 19th (WEH). There was an interesting summer record of an adult male flying W. at Possingworth Park on July 2nd (GM). In the autumn there were singles at the Cuckmere on Oct. 10th (AJC) and at Beachy Head on the 15th (PC).

At the end of the year there was one at the Cuckmere on Nov. 22nd (RB) and up to 2 at Glynde Levels from Nov. 13th to Dec. 27th (many obs.).

107. **MERLIN** (*F. columbarius*).—A marked decline in records. One near Shoreham Tollbridge on Jan. 18th and one at Newhaven Tidemills on Feb. 20th were the only pre-spring records. In March there were singles at Beachy Head on the 2nd and near Bexhill on the 7th.

In the autumn one came in from the sea at Beachy Head on Sept 21st, staying to the 27th, and another bird was seen on Oct. 4th. One near Bexhill between Sept. 21st and 28th. At the end of the year singles at Alfriston on Nov. 10th and near Chancetonbury Ring from Dec. 26th to the 28th and 2 at Beachy Head on Dec. 7th were the only records.

110. **KESTREL** (*F. tinnunculus*).—Observer coverage was again good and the number recorded in the breeding season compared favourably with 1968, with a sharp rise in the number of possible breeding pairs, although the number of probable pairs was rather lower. The distinction between these two categories is rather fine; they are defined in SBR 1964, p. 33. Overall a slight increase in total numbers was indicated.

BREEDING SEASON RECORDS 1969

Pairs proved to breed	Pairs probably breed	Possible breeding pairs
49 (54)	57 (73)	80 (83)

Figures for 1968 are given in brackets.

More young birds were seen than in 1968 but the average brood size decreased from 2 in 1968 to 1.7 in 1969.

BREEDING SUCCESS 1969

Pairs proved to breed	Pairs known to have raised young	Young raised (left nest)	Average brood size
49 (54)	33 (27)	57 (54)	1.7 (2)

Rather more evidence of migration at the coast than in many recent years. In the early months at Selsey Bill singles flew W. on Jan. 12th and E. on Feb. 9th. In the spring there, there were 13 records relating to migration between Mar. 15th and May 23rd, with 3 flying out SE., 6 arriving from the S., 3 moving E. and one W. The only autumn records there were one flying E. offshore on July 13th and one arriving from the sea on Sept. 21st. Elsewhere in the autumn singles arrived from the sea at Hove on Aug. 17th, departing NE., went out SE. at Ferring on Sept. 19th and came in from the S. at Worthing on the 21st. One flew out SE. at Beachy Head on Sept. 22nd and one arrived from the SE. at Newhaven on the 29th.

115. **RED-LEGGED PARTRIDGE** (*Alectoris rufa*).—The only breeding count received was of 12 pairs in the Cissbury/No-mans Land/Chanctonbury area; a covey of 17 seen there on Nov. 14th. Other records were received from only 9 areas, including one report of a nest, c/15.

116. **PARTRIDGE** (*Pardix perdix*).—The only breeding count received was of 8 pairs on 4 square miles of downland behind Beachy Head. JA records a marked decrease in the Rye area and a poor breeding season. Elsewhere a number of widely scattered reports of sizable coveys after the breeding season suggest a better year. Breeding season counts of both partridge species would be welcome.

117. **QUAIL** (*Coturnix coturnix*).—Very few records. In the breeding season 2 were heard calling on the Downs behind Brighton and another above Firle. In August single birds at Pagham on the 7th and Bignor Hill on the 8th.

120. **WATER RAIL** (*Rallus aquaticus*).—Between January and March totals of 20 found wintering in 7 coastal localities and 27 in 18 inland. The last wintering bird at Chichester G.P. was seen on Apr. 18th and other records indicating passage were one at Beachy Head from Mar. 27th to Apr. 4th and an increase from the usual 2 or 3 to 4 or 5 at Litlington on Apr. 3rd.

In the breeding season 2 pairs were present at Shillinglee Park and at Burton Park and one at Lurgashall Pond, and birds were found present at Church Norton, Amberley Wildbrooks, Cooden and Pebsham. Breeding was proved at Filsham, young being seen. The last 3 named are all new sites. Nine of the 23 inland wintering sites recorded during the year were visited during the breeding season but no birds were recorded; the species is, however, very easily missed.

At the end of the year totals of 7 wintering in 6 coastal localities and 16 in 14 inland. Winter records included one in a garden pond in Brighton until Mar. 19th and one on the village pond at Rottingdean for several days in December.

121. **SPOTTED CRAKE** (*Porzana porzana*).—Single birds at Litlington on Apr. 3rd and Nov. 28th (PJW, VAW).

125. **CORNCRAKE** (*Crex crex*).—One near Harting from May 12th to 15th (Cdr. Bird). In the autumn TB reported 6 sightings at Beachy Head in the first 3 weeks of September and NAGL saw one there on the 16th. One at Church Norton on Sept. 13th (SDH) and 20th (NE).

126. **MOORHEN** (*Gallinula chloropus*).—Twenty-three pairs counted along 2½ miles of the Chichester Canal on June 12th; 7 broods totalling 24 young were seen.

127. **COOT** (*Fulica atra*).—The monthly maxima at stated localities are tabulated as in previous years, a dash indicating that no count was received.

Locality	Jan.	Feb.	Mar.	Oct.	Nov.	Dec.
Thorney Deep	120	215	165	—	216	310
Manhood End	1700	—	—	—	—	—
Pagham Lagoon	—	—	—	—	360	90
Chichester G.P.	600	250	—	—	—	—
Swanbourne Lake	260	135	65	155	—	—
Weir Wood Res.	200	—	80	—	100	200
Piddinghoe Pond	115	—	—	—	—	—
Barcombe Res.	85	30	70	85	125	130
Darwell Res.	180	250	150	—	100	500
Pett Level	720	—	—	—	—	—
Winchelsea	90	400	225	—	120	500
Rye Harbour G.P.	—	—	—	—	—	—

Waders

As in past years a series of monthly wader counts were organised in Chichester and Pagham Harbours, with a count along the whole coastline on Nov. 23rd. Full results of these counts are tabulated on page 56. The systematic list is largely confined to records outside the scope of these tables, which should be consulted in conjunction with the list for all 1969 information.

131. **OYSTERCAICHER** (*Haematopus ostralegus*)*.—The monthly maxima recorded at Rye Harbour were: Jan. 75, Feb. 120, Mar. 60, Apr. 75, May 130, June 70, July 90, Aug. 125, Sept. 280, Oct. 315, Nov. 380, Dec. 100. Elsewhere 60 at the Midrips on Apr. 6th and a maximum of 45 in the Ovingdean/Saltdean area in November were the only significant numbers. Spring passage at Selsey Bill totalled 308 E. and 90 W. in 63 days (511 hrs.) watching from Mar. 1st to June 15th, peak 20 E. on Apr. 17th; at Beachy Head 44 E. between Apr. 7th and 19th.

Breeding pairs were: Chichester Harbour, 2 with nests on June 5th; Pagham Harbour, 2 with nests on June 7th; Rye Harbour, 6 which reared 8 young, 4 nests were robbed. In June there were c.200 in Chichester Harbour and c.80 in Pagham Harbour.

Five flew out SW. at Selsey Bill on Aug. 16th and one likewise on Oct. 25th. A party of 50 flew W. off Hove on Sept. 18th.

133. **LAPWING** (*Vanellus vanellus*)*.—The largest winter concentrations noted were: c.20,000 in the Lewes/Glynde area on Jan. 1st, 1,025 in the Selsey area on Feb. 1st and 1,000 on Hove Level on Mar. 16th. At the end of the year there were 710 in the Selsey area on Nov. 22nd, 800 at Winchelsea on the 23rd, 700 at Barcombe Res. on the 30th and 1,000 at Tangmere on Dec. 26th. In addition flocks of up to 300 were recorded in 14 other localities in the autumn and winter months.

A widespread cold weather movement occurred in early February, the largest counts being 700 S. over Glynde Levels on the 1st, 1,100 out S/SW. at Selsey Bill on the 15th and 5,000 W. at Beachy Head on the 16th. Spring arrivals were

* See also wader count tables on page 56.

noted between Feb. 21st and Mar. 16th but the only sizeable one was 100 N. at Worthing on Feb. 21st. One arrived from the S. at Selsey Bill on May 24th.

Counts of breeding pairs were: 25 on c.160 acres of grass and arable at Bracklesham Bay, 7 pairs on 50 acres of grass at Sidlesham Ferry, 18 pairs on the Amberley/Pulborough marshes (c.3,200 acres). On the chalk there were 6 pairs on 750 acres at Harrow Hill, 2 pairs on c.1,000 acres at Well Bottom, 3 pairs on 100 acres at Patching and 14 nests on 3 acres of kale at Burpham (FPP), a remarkable concentration. At Rye 77 pairs bred in the local marshes. In addition breeding was noted at Fishbourne S.F., 10 pairs; Chichester G.P., 5 pairs, Ditchling Common, 2 pairs, Pound Hill, Weir Wood Res., 4 pairs and Crowhurst marsh, 3 pairs.

Large post breeding flocks were 104 at Amberley Wildbrooks on June 15th, 75 on Pevensey Levels on the 24th, 150 at the Cuckmere on the 25th and 120 at Weir Wood Res. on July 12th. A small arrival from the S. was noted at the coast on June 8th and westerly movements occurred in late June and July. Nine flew out S. at Selsey Bill on July 16th.

The main autumn movements occurred in late November, with counts of 200 N. at Bexhill on the 24th and 50 likewise at Newhaven Tidemills on the 26th and 800 WSW. at Worthing on the 29th and 4,150 out S/SW. at Selsey Bill on the 29th.

134. **RINGED PLOVER** (*Charadrius hiaticula*)*.—The monthly maxima recorded at Rye Harbour were: Jan. 40, Feb. 22, Mar. 65, Apr. 10, May 25, Aug. 50, Sept. 3, Nov. 10; no figures were received for October or December. Other counts were 50 at Ferring on Mar. 17th, c.50 wintering at Shoreham at each end of the year and up to 45 likewise at Newhaven/Cuckmere; there were 91 there over Aug. 24th/25th. Inland a total of 6 were seen at Weir Wood Res. between July 20th and Oct. 12th and 2 at Darwell Res. on Sept. 1st.

A total of 42 breeding pairs recorded as follows: Pilsey Island, 3; Bracklesham Bay, 4; Pagham Harbour, 7; Chichester G.P., 3; Southwick, one; Newhaven Tidemills, 2; Cuckmere Haven 2; Norman's Bay, one; Rye Harbour, 19. Breeding success appeared to be fairly good even in areas such as Pagham Harbour which are subject to considerable disturbance.

135. **LITTLE RINGED PLOVER** (*C. dubius*).—One flying N. at Beachy Head on May 2nd was the only spring record. One pair possibly bred. In the autumn up to 3 at Sidlesham Ferry between July 29th and Aug. 16th, a total of 3, possibly 4 birds, at Weir Wood Res. between July 30th and Sept. 21st and singles at the Cuckmere on Aug. 24th and Rye on Sept. 19th.

136. **KENTISH PLOVER** (*C. alexandrinus*).—Singles at Newhaven Tidemills on Mar. 17th (AJC) and Sidlesham Ferry on Apr. 18th (NPH).

139. **GREY PLOVER** (*Pluvialis squatarola*)*.—Twenty-one wintering at Rye Harbour between January and March and 9 in December. There were 63 in Pagham Harbour on Oct. 26th.

140. **GOLDEN PLOVER** (*P. apricarius*)*.—Regular counts in the Selsey area recorded the following monthly maxima: Jan. 850, Feb. 1,200, Mar. 550, Apr. 1,500, Nov. 250, Dec. 70. Other large winter concentrations in the early months

* See also wader count tables on page 56.

were 300 at Sidlesham Ferry on Jan. 25th, 200 at Glynde Levels on Feb. 1st, 200+ on Pevensey Levels between January and April, 600 over Nimfield on Feb. 1st and 200 on Winchelsea marsh on Mar. 18th. At the end of the year there were 250 at Pagham on Nov. 30th; 200 on Pevensey Levels on Nov. 28th and 500 on Winchelsea marsh on the 23rd. In addition flocks of up to 75 were noted in 8 other areas of grassland at or near the coast during the winter months.

A cold weather movement was noted, with Lapwings, in February, when 440 flew out S/SW at Selsey Bill and 200 SW at Rye Harbour on the 15th. In November 25 flew W. at Bexhill on the 24th and 75 flew out SW at Selsey Bill on the 29th, also with Lapwings.

A flock of 220 in s/p on Pevensey Levels on Apr. 17th was composed of birds showing the characters of both the races *apricarius* and *atirifrons*.

142. DOTTEREL (*Eidromia moirivellus*).—A party of 5 in s/p near Chanctonbury on Apr. 25th, which departed W. (DSF). There are only 3 other spring records since 1947.

143. TURNSTONE (*Arenaria interpres*).*—The monthly maxima recorded at Rye Harbour were: Jan. 16, Feb. 70, Mar. 73, May 90, July 2, Aug. 34, Sept. 2, Nov. 55, Dec. 2; no figures were received for April or October. The wintering population along the coast between Pevensey and Hastings involved c.230 birds in the early months and c.170 at the end of the year. c.40 wintering at Selsey Bill at both ends of the year. On Oct. 4th there were 100 in Pagham Harbour. One was picked up dead under overhead power lines 15 miles inland at Dragon's Green on Oct. 10th.

145. SNIBE (*Gallinago gallinago*).*—Counts are tabulated to give an approximate total of birds recorded each month; figures in brackets give the number of areas in which counts were made.

Jan.	Feb.	Mar.	Nov.	Dec.
545 (5)	590 (15)	735 (11)	760 (7)	665 (13)

Counts were received from 24 localities well spread over the county. Counts of over 50 together were made at Thorney Deepes, Swanbourne water cross beds, Amberley/Pulborough marshes, Coolham, Shoreham airfield, Southsea, Rodmell, Glynde Levels and marl-pit, Pevensey Levels, Crowhurst marsh and Winchelsea marsh. The largest counts were 310 at Thorney Deepes in January and 150 there in December, c.250 in the Glynde area between January and March, 120 at Swanbourne water cross beds on Feb. 16th, c.300 on Pevensey Levels in February and March and 100+ there in November, 120 at Rodmell clay pits on Mar. 28th and up to 400 at Crowhurst Marsh in November and December.

Breeding counts received were 11 to 12 pairs on Pulborough marshes, 9 to 10 pairs near Hooe (one KM square TQ6908), 12 pairs on Crowhurst marsh (=Combe Haven) and 3 pairs at Glyne Gap. Breeding was also recorded at Sutton and drumming birds were noted in the breeding season at Coultershaw Bridge, South Stoke, Amberley Wildbrooks, Ditchling and Chailey Commons, Langton S.F. and TQ724255.

Twenty came in NW at Beachy Head on Feb. 16th, during a cold weather movement and small arrivals from the S. were noted at the coast in August and September.

* See also wader count tables page 56.

147. JACK SNIBE (*Lymnecryptes minutus*).—A further increase in records, particularly in the early months, when birds were recorded, all singly unless otherwise stated, in the following localities: Thorney Deepes, 9; Delt Quay, 2; Sidlesham Ferry, 2; Church Norton; Chichester G.P.; Amberley/Pulborough, 5; Lancing; Shoreham, 2; Milton Mount; Pond Leigh, 2; Lewes Brooks, 2; Barcombe Res.; Newhaven Tidemills; Glynde; Pebsham, 7; Rye Harbour. Of these birds only 7 appeared to be wintering, 12 being found in the February cold spell only and 20 between Mar. 8th and Apr. 16th, which were probably spring migrants.

At the end of the year first recorded at Pebsham on Sept. 17th, an early date, and birds were noted in the following localities: Thorney Deepes; Church Norton; Selsey Bill; Chichester G.P.; Glynde; Newhaven Tidemills; Cuckmere; Mayfield S.F.; Pebsham, 5. Half these birds were recorded between Nov. 23rd and Dec. 9th.

148. WOODCOCK (*Scolopax rusticola*).—Widespread breeding season reports of roding birds received, involving c.40 birds in 21 localities. Proven breeding pairs were 2 with successful nests in Houghton Forest, one with young in Rewell Wood and one with 2 young in Strood Wood.

At the coast 4 were recorded between Mar. 8th and Apr. 4th and 4 between Nov. 25th and Dec. 17th, indicating small passage movements.

150. CURLEW (*Numenius arquata*).*—Very few recorded at Rye Harbour during the year, the monthly maxima being: Mar. 5, May one, Aug. 6, Sept. 9, Oct. 5, Nov. 17, Dec. 18. At Pett Level there were 200 in February and 250 in November and December. Up to 40 were wintering at Newhaven Tidemills at both ends of the year and there were 300 at the Midrips on Aug. 16th and 110 at Pagham on Oct. 13th.

Present as usual in Ashdown Forest during the breeding season and one, probably 2, pairs bred in the NW of the county.

151. WHIMBREL (*N. phaeopus*).*—First recorded in Pagham Harbour on Apr. 3rd (DSF). Spring passage at Selsey Bill totalled 119 E. and 8 W. between Apr. 7th and May 14th and at Beachy Head 370 E. in the same period; 330 E. at Beachy Head on Apr. 19th was the largest movement. In early May there were 45 at Rye Harbour on the 3rd and 70 near Bexhill on the 4th. Three in Pagham Harbour on June 7th.

Little visible passage in the autumn but 2 flew SW over Weir Wood Res. on Aug. 19th and 10 S. over Cocking Hill on the 24th. The last recorded was one at Rottingdean on Oct. 6th.

154. BLACK-TAILED GODWIT (*Limosa limosa*).*—There were 230 in Pagham Harbour on Jan. 25th and 110 on Oct. 12th. The only inland records were 2 at Chichester G.P. on Aug. 24th and up to 3 there in November and December.

155. BAR-TAILED GODWIT (*L. lapponica*).*—Apart from visible passage no significant numbers noted outside Chichester and Pagham Harbours. Spring passage at Selsey Bill totalled 450 E. and 4 W. in 51 days (432 hrs.) watching between Mar. 16th and May 31st, peak 220 E. on Apr. 20th; at Beachy Head 260 flew E. between Apr. 19th and May 2nd. Ten flew out S. at Selsey Bill on Aug. 1st.

* See also wader count tables page 56.

156. GREEN SANDPIPER (*Tringa ochropus*). *—Recorded in every month. Single birds were wintering in 5 localities in the early months and up to 5 at Langton S.F. In December single birds present in 6 localities, with 2 at Glynde and 3 at Chichester G.P.

Spring passage probably started in early March and continued to May 11th, when one came in from the S. at Beachy Head. Autumn passage noted from June 23rd, with a peak of 36 birds in the second week of August. Monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	11	10	13	2	16	32	50	30	28	21	11

157. WOOD SANDPIPER (*T. glaricola*). *—In the spring one at Crowhurst marsh on Apr. 19th (SR) and one at Barcombe Res. on the 20th (DCL). In the autumn a total of c.17 recorded between Aug. 3rd and Sept. 22nd, mainly at the coast but there were inland records from Barcombe and Weir Wood Res.

159. COMMON SANDPIPER (*T. hypoleucos*). *—Recorded in every month. Eight wintering birds in 5 localities in January and February and 2 December records. A fairly large spring passage was first noted on Mar. 27th and continued to June 1st but without any marked peak. Autumn passage first noted on June 29th and continued to Nov. 2nd, with a very marked peak of c.180 birds in the first week of August. Passage was unusually heavy throughout this month and parties of between 25 and 50 were seen in 5 places along the coast. Inland records came from 7 localities in the spring and 9 in the autumn. Monthly totals were:

Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1	22	26	3	36	300	70	13	2

161. REDSHANK (*T. totanus*). *—The monthly maxima recorded at Rye Harbour were: Jan. 85, Feb. 24, Mar. 50, Aug. 61, Sept. 13, Nov. 75, Dec. 4; no figures were received for October. Wintering birds elsewhere were c.50 at Shoreham, up to 20 at Newhaven Tidemills and up to 33 at the Cuckmere in January and February and up to 100 at Shoreham and 40 at Newhaven Tidemills at the end of the year.

A fairly comprehensive series of counts of breeding pairs received, as follows: Chichester Harbour, 21 in 4 sites; Bracklesham Bay, 12; Selsey S.F., one; Pagham Harbour, 7-9 in 4 sites; Arun valley, one at South Stoke and 12-13 in the Amberley/Pulborough marshes; Ouse valley, at least 4 south of Lewes; Cuckmere, 2 below Littleton, none above; Hooe, 2 in one KM square TQ6908; Crowhurst Marsh (=Combe Haven), one; Rye marsh and Hartbour, 12. Birds were also present at Harting, Coultershaw Bridge, Tillington, Glynde Levels, Pevensey Levels and Bodiam. These figures show no change in status since the breeding survey (see SBR 1967).

Five flew out SW. at Selsey Bill on Sept. 13th and there was one at West Chiltington on Dec. 17th, a late date for an inland record.

162. SPOTTED REDSHANK (*T. erythropus*). *—Recorded in every month, winter birds being present at Dell Quay, the Ouse valley and Guldeford in the early months and at Newhaven Tidemills in December.

* See also wader count tables page 56.

A small spring passage noted between Apr. 3rd and May 15th and one summered around Pagham Harbour. Autumn passage first noted on June 24th, continuing to about Nov. 26th with a very marked peak of 77 birds, 60 of which were counted at Thorney on the 14th, in the second week of September. Inland records came from Southsea in March and Chichester G.P., Darwell Res. and Weir Wood Res. in the autumn. In the latter area rather unusual numbers were seen—a total of c.20 birds between July 26th and Oct. 9th. Monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
3	1	1	1	5	17	5	33	28	77	9	4

164. LESSER YELLOWLEGS (*T. flavipes*).—One found at Chichester G.P. on Oct. 16th by AHD was subsequently seen by many observers up to Nov. 3rd. This record has been accepted by *Brit. B.* and is the third for the county.

165. GREENSHANK (*T. nebularia*). *—The only winter records were 5 at Thorney Deep on Jan. 19th and one on Mar. 2nd. Spring passage was first recorded on Apr. 7th and continued to May 24th. Autumn passage first noted on June 15th and continued to Nov. 8th, with a very marked peak of 160 birds in the second week of September, which included a count of 105 at Chichester Harbour on the 14th. Inland records came from one locality in the spring and 4 in the autumn. Monthly totals were:

Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1	11	20	6	16	85	160	80	4

167. TEREK SANDPIPER (*T. terek*).—One in Pagham Harbour on May 10th (PG, ZK, ZJK). This record has been accepted by *Brit. B.* and is the first for the county.

169. KNOT (*Calidris canutus*). *—There were c.150 in Pagham Harbour on Feb. 15th and 140 at Thorney Island on Mar. 2nd. At Rye recorded monthly maxima were: Feb. 2, Mar. 9, May 2, Aug. 35, Sept. 48, Nov. 65. Fifty-seven flew E. off Selsey Bill over May 22/23rd. One at Weir Wood Res. on Dec. 28th (CFT), the fourth inland record for the county.

170. PURPLE SANDPIPER (*C. maritima*). *—C.36 wintering in the early months and c.63 at the end of the year. Records as follows: Selsey Bill, one W. on May 10th and up to 3 present in November and December; Pagham Harbour, one from Jan. 14th to Apr. 14th, with 2 in early February, 2 in November and December; Saltdean, one on Oct. 31st; Newhaven, c.18 from Jan. 1st to Apr. 13th and still 8 on May 19th (RB), 6 on Oct. 31st increasing to 31 by the end of the year (PJW), the largest flock yet recorded in the county; Cuckmere, one on Dec. 15th; Langney Point, one on Sept. 27th; Bulverhythe, c.17 from January to March, an early bird on Aug. 12th (SR) and 27 during November and December.

171. LITTLE STINT (*C. minuta*). *—One wintering at Pagham Harbour in the first 3 months. No spring records. In the autumn a total of c.42 recorded between July 23rd and Dec. 7th, all at the coast, except for singles at Chichester G.P. on Aug. 31st and Sept. 20th and up to 3 at Weir Wood Res. in September and October.

* See also wader count tables page 56.

178. **DUNLIN** (*C. alpina*). *—The monthly maxima recorded at Rye Harbour were: Jan. 200, Feb. 200, Mar. 120, Apr. 2, May 25, Aug. 25, Sept. 2, Nov. 180; no figures were received for October or December. Other significant winter flocks were 250 at Goring on Mar. 5th, 100 at Winchelsea on the 18th and up to 700 at Shoreham and 165 at Newhaven/Cuckmere in January and February and 500 at Shoreham and 135 at Newhaven/Cuckmere in December.

A more marked spring passage along the coast than usual, with a total of c.630 flying E. between Feb. 26th and May 5th; over May 10th/11th 108 flew W. off Selsey Bill.

As usual a scatter of inland records, birds being seen at Chichester G.P., Amberley Wildbrooks, Barcombe Res., Glynde Levels, and Weir Wood Res.

179. **CURLEW SANDPIPER** (*C. ferruginea*). *—No spring records. An extraordinary autumn passage between July 14th and Nov. 19th, involving c.260 birds, far higher numbers than have ever been recorded in the county before. This movement was part of an exceptional invasion over the whole country. Birds were noted along the whole coast-line and at Weir Wood Res. and the largest parties were: a peak of 180 at Sidlesham Ferry in early September, 23 at Rye Harbour on Aug. 28th and 24 at the Midrips on the 30th. Approximate weekly totals during August and September show the pattern of movement well:

August		September	
1st-8th	9th-15th	16th-23rd	24th-31st
3	0	14	15
		193	72
		214	4

181. **SANDERLING** (*C. alba*). *—Rather few records from Rye Harbour, recorded monthly maxima being: Feb. 4, May 3, Aug. 80. Other significant winter flocks were 32 at Camber on Feb. 2nd, 100 at Clipping on Nov. 15th and 20 at Goring on Dec. 19th. Three at Chichester G.P. on May 11th (AHD), the third inland record for the county.

184. **RUFF** (*Philomachus pugnax*). *—Not recorded in May. Monthly totals were:

Jan.	Feb.	Mar.	Apr.	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
7	78	21	5	1	7	32	45	5	92	7

The largest flocks were 70 at Bracklesham Bay on Feb. 9th (HPKR) and 70 at Thorney on Nov. 23rd (DSF). Spring passage was most marked in February and March but the appearance of at least some of the February birds may have been due to the cold spell; only 40 were present at Bracklesham Bay on Feb. 15th. The high November count is unusual.

185. **AVOCET** (*Recurvirostra avosetta*).—Once again rather unusual numbers were recorded, although the total of 34 was only half the record total of 70 in 1968. Most were seen around Pagham Harbour, where there were 3 during January and February and one until Mar. 19th, one from June 14th to 22nd and 13 from Dec. 12th to 31st. Elsewhere 6 flew NE. inland at the Cuckmere and 2 E. off Bexhill on Mar. 16th and 3 flew E. off Selsey Bill over Apr. 6th/7th. Two at the Midrips on May 6th.

The only autumn records were one at Newhaven Tidemills on Aug. 30th and 3 at the Midrips on the 31st.

* See also wader count tables page 56.

187. **GREY PHALAROPE** (*Phalaropus fulicarius*).—Single birds at Rye on Nov. 11th (JA) and East Head, West Wittering on the 26th (JWC).

189. **STONE CURLEW** (*Burhinus oedienemus*).—Single birds at West Chiltington on Mar. 8th (FWD, SWMH), Beachy Head on Apr. 1st and Selsey Bill on the 19th, which was seen to arrive from the S.

Breeding season records came from 8 localities on the Downs, possibly involving 9 pairs. One nest was found and at least one other pair was known to have bred successfully. Localities have to be suppressed since this species is still pestered by egg-collectors.

On Nov. 10th one flew S. over Newhaven.

193. **ARCTIC SKUA** (*Stercorarius parasiticus*).—First recorded on Apr. 7th at Beachy Head and a total of 59 E. there up to May 20th, peaks 16 on Apr. 26th and May 4th; 2 flew E. on June 17th. At Selsey Bill 53 E. and 3 W. in 40 days (367 hrs.) watching from Apr. 12th to June 14th, peak 12 E. on May 11th. Between June 21st and 30th 2 E. and 16 W. there in 4 days (37 hrs.) watching, rather unusual numbers for June.

In the autumn a total of c.86 recorded along the coast between July 19th and Nov. 16th. Most were seen off Bexhill, with a total of c.55 between July 31st and Oct. 18th; 8 W. on Sept. 7th was the largest movement.

194. **GREAT SKUA** (*S. skua*).—One flew off W. Selsey Bill on Jan. 25th (DSF, HPKR). An exceptional spring passage. Off Selsey Bill 11 flew E. and 3 W. between Apr. 12th and May 26th and off Beachy Head 10 flew E. between Apr. 20th and May 6th. Elsewhere singles E. off Bexhill on April 26th and May 4th and W. off Worthing on May 15th. At least 23 birds appear to have been involved.

One off Beachy Head on June 22nd (MJR). In the autumn 5 recorded along the coast between Aug. 26th and Oct. 31st.

195. **POMARINE SKUA** (*S. pomarinus*).—One flew E. off Beachy Head on May 9th (MJR). Singles flew E. off Selsey Bill on May 11th (PRC, BN), 17th and 26th, with a second bird W. on the 17th (DSF, HPKR). Two flew W. there on Nov. 16th (HPKR).

198. **GREAT BLACK-BACKED GULL** (*Larus marinus*).—The following counts were received: 620+ at Shoreham on Jan. 7th and c.50 there from August to October; c.300 at Bulverhythe in January and February; 75 at Rottingdean on Sept. 20th and 60 on Nov. 7th; 70 at Rye Harbour on Nov. 23rd.

199. **LESSER BLACK-BACKED GULL** (*L. fuscus*).—Fewer winter records than of late, 29 being noted in 4 localities in January and February and 11 in 2 at the end of the year. The only large spring movements were 105 E. off Selsey Bill on Apr. 6th and 180 E. there on the 21st. Single pairs bred on a roof in Hastings and on the cliffs just east of the town.

A marked SW. passage off Selsey Bill in late June, involving 1,130 birds in 4 days (37 hrs.) watching between the 21st and 30th; later movements there totalled 1,045 SW. in 42 days (372 hrs.) from July to November.

200. **HERRING GULL** (*L. argentatus*).—A fairly heavy spring passage off Selsey Bill totalled 6,930 E. and 250 W. in 67 days (518 hrs.) watching from Feb. 15th to June 15th, peak 1,000 E. on Apr. 7th. In late June there 4,890 flew W. in 4 days (37 hrs.) watching between the 21st and 30th.

A complete breeding census was made for Operation Seafarer and a total of 861-892 pairs recorded, as follows: Chichester Harbour, none; Pagham Harbour, one; Chalk cliffs, 401; Hastings and St. Leonards, 106-131; sandstone cliffs, 315; Rye Harbour G.P. 38. Counts were of occupied nests. The figures for the sandstone cliffs were 15% lower than those obtained in the 1965 census (Porter *et al* SBR 1965), although the total population was apparently higher in 1969.

201. **COMMON GULL** (*L. canis*).—Spring passage was noted off Selsey Bill between Feb. 15th and the end of May; 260 E. on Apr. 7th was the only large movement. In March there were counts of 200 at Ovingdean on the 2nd, 450 at the Cuckmere on the 3rd and 300 at Bayham on the 27th; 100 flew E. off Bexhill on May 11th.

No breeding pairs were found during the Operation Seafarer counts.

202. **GLAUCOUS GULL** (*L. hyperboreus*).—One at Hove from Feb. 23rd to April 30th (CMV *et al*) and a second bird there on Apr. 2nd (CMV). Singles flew E. off Selsey Bill on Mar. 15th and May 3rd (HPKR, MS *et al*) and W. off Beachy Head on Mar. 30th and Apr. 13th (AQ, MJR *et al*). One at Worthing from Dec. 1st to 16th (CMV). All were immature.

205. **MEDITERRANEAN GULL** (*L. melanocephalus*).—All records were of single birds seen as follows: Sidlesham Ferry, Feb. 23rd and Oct. 31st; Hove, Feb. 23rd to Mar. 1st; Beachy Head, Mar. 2nd; Selsey Bill, June 28th and July 5th, perhaps same bird, and Nov. 8th; Chichester G.P., Aug. 2nd; Worthing, Aug. 3rd and 6th, different birds, and Nov. 12th. All were adults except those of Mar. 2nd, sub-adult, and Nov. 12th, second year.

207. **LITTLE GULL** (*L. minutus*).—Singles at Pett Level on Jan. 12th, off Selsey Bill on the 26th and at Shoreham on Feb. 21st. Spring passage noted between Apr. 21st and May 25th, involving 13 birds, nearly all moving E. along the coast. One summered at Pett Level.

Autumn passage was larger than usual with c.50 birds between June 27th and Dec. 14th. Most were seen off Bexhill in October, with up to 24 present (SR). There were no inland records.

208. **BLACK-HEADED GULL** (*L. ridibundus*).—During the Operation Seafarer counts breeding birds were found only at Rye Harbour G.P., where there were c.260 pairs which reared 300+ young.

Large flock counts at the coast were: maxima at Selsey Bill of 1,200 on Feb. 9th and 2,150 on Oct. 26th; 6,000-7,000 at Shoreham in January and c.2,000 there on Aug. 20th; c.2,000 at Newhaven Tidemills on Mar. 27th; c.6,000 W. off Worthing at dusk on Nov. 13th. On Dec. 16th there were c.1,000 at Weir Wood Res.

211. **KITTIWAKE** (*Rissa tridactyla*).—Movement off Selsey Bill was predominantly W. throughout the year, with the largest numbers in May and

June; records are tabulated below and the largest movement was 982 W. over June 21st/22nd.

	Jan.-Apr.	May/June	July-Oct.	Nov./Dec.
E.	25	47	5	165
W.	108	1572	79	52
Days watching	55 (318 hrs.)	31 (291 hrs.)	31 (303 hrs.)	17 (117 hrs.)

No other extensive autumn movements were recorded, although there were 600 in Newhaven Harbour on Nov. 3rd. The only large movements elsewhere along the coast in the spring were, 380 E. off Bexhill in 5 days watching between Apr. 26th and June 4th and 150 E. off Rottingdean on June 15th.

212. **BLACK TERN** (*Chlidonias niger*).—First recorded on Apr. 20th off Selsey Bill. Spring passage was rather poor, with no significant coasting movements, but a total of 32 were reported up to June 8th; 11 were seen on Apr. 21st.

A rather larger autumn passage than usual, with c.115 recorded between July 22nd and Oct. 23rd. The largest movements were 30 W. at Rye Harbour on Sept. 27th and 15 likewise off Bexhill on Oct. 14th. As usual some were seen inland, with records from Chichester G.P., Weir Wood Res. and Barcombe Res.

216. **CASPIAN TERN** (*Hydroprogne tschegrava*).—One off Worthing on Apr. 30th (KW). This record has been accepted by Brit. B.

217. **COMMON TERN** (*Sterna hirundo*).—A complete census was made for Operation Seafarer and a total of 151 pairs were found, the highest number recorded since 1958. There were 118 pairs in 2 colonies at Rye Harbour G.P. and 32 pairs in Chichester Harbour. After a successful hatch at Rye many young were lost in bad weather in July, and only c.60 were reared. In Chichester Harbour 32 nests were found on May 29th but many were lost through tidal flooding 2 days later; subsequent breeding success is not known. A pair was present at Chichester G.P. throughout the breeding season but probably did not lay.

COMMON/ARCTIC TERN (*S. hirundo/paradisea*).—Spring passage at Selsey Bill totalled 2,132 E. and 59 W. in 42 days (381 hrs.) watching between Apr. 5th (first spring record) and May 31st, peak 760 E. on Apr. 21st. At Beachy Head 1,085 flew E. between Apr. 19th and May 30th, peak 800 on May 6th. There were 39 at Chichester G.P. on Apr. 21st, a rather large number for an inland locality.

In the autumn the only large concentration was c.1,000 feeding off Bexhill in late August and early September. There was c.100 there on Oct. 4th and one on the 29th, the last recorded.

219. **ROSEATE TERN** (*S. dougalli*).—Two off Beachy Head on May 3rd (SR, KV). Single birds flew W. off Selsey Bill on May 17th and July 12th (DSF, HPKR). One at Pilsey Island on June 5th (MS).

222. **LITTLE TERN** (*S. albigrons*).—First recorded on Apr. 9th off Selsey Bill but there were no significant coasting movements in the spring or autumn, although up to 50 were seen off Bexhill in August. Five W. there on Oct. 14th were the last recorded.

A complete breeding census was made for Operation Seafarer and 148 pairs found, an increase of 41% compared with 1968. Counts were as follows: Chichester Harbour, 52 nests in 2 sites, one colony of 48 pairs; Pagham Harbour, 35 pairs; Rye Harbour, 55 pairs in 4 colonies, one of c.35 pairs; Midrips, 5 pairs. There was also a pair present at Chichester G.P. which apparently did not breed. Breeding success at Pagham was poor owing to disturbance but a few young were reared. At the large Chichester Harbour colony the average clutch size in 38 nests on June 5th was 2.6. There were 2 at Weir Wood Res. on Aug. 21st (CN).

223. **SANDWICH TERN** (*S. sandvicensis*).—First recorded on Mar. 16th off Selsey Bill and 2,745 flew E. and 84 W. there in 51 days (432 hrs.) watching up to May 31st, but there was no marked peak. At Beachy Head c.1,000 flew E. between Apr. 6th and May 30th. No breeding birds were found during the Operation Seafarer counts.

The largest autumn movement was 184 W. off Beachy Head on Sept. 5th. There were 3 at Weir Wood Res. on Sept. 9th (PCB). The last recorded was one off Bexhill on Oct. 29th.

224. **RAZORBILL** (*Alca torda*).—A total of c.96 were recorded during the year, of which 30% were oiled. See also tables on page 60 and under Auk species.

226. **LITTLE AUK** (*Plautus alle*).—An oiled bird picked up dead at Rye Harbour on Mar. 1st (WEH).

227. **GUILLEMOT** (*Uria aalge*).—A total of c.220 were recorded during the year, of which 74% were oiled. See also tables on page 60 and under Auk species.

229. **BLACK GUILLEMOT** (*U. grylle*).—One in s/p off Beachy Head on July 5th (BAEM) and a similar bird flying W. there on Aug. 26th (NAGL, MCR).

230. **PUFFIN** (*Fratercula arctica*).—Two flew E. off Selsey Bill on June 1st (DSF, HPKR). One off Bexhill on Oct. 14th (SR).

AUK SPECIES.—The table below summarises Auk movements off Selsey Bill only.

	Jan.-Mar.		Apr./May		June		July-Sept.		Oct.-Dec.	
	E.	W.	E.	W.	E.	W.	E.	W.	E.	W.
Razorbill	—	8	3	17	—	1	1	1	1	14
Guillemot	—	8	5	1	—	—	—	2	—	2
Auk species	2	51	11	480	1	27	9	7	3	85

The largest movement was 258 W. on May 17th. C.50 flew W. off Bexhill on Nov. 24th.

232. **STOCK DOVE** (*Columba oenas*).—The only large flock noted was 100 at the Midrips on June 28th but parties of up to 25 were recorded in 7 other areas during the year. During the breeding season c.45 pairs were recorded from 23 localities and birds were present in a further 15. Two observers remark on a further increase in numbers.

235. **TURTLE DOVE** (*Streptopelia turtur*).—One with Collared Doves at Patcham on Feb. 5th and 8th (PJB) and one wintering near Bexhill in December (SR). Satisfactory descriptions of these birds were submitted and they are the first wintering records for the county. One at Beachy Head on Apr. 20th was the first spring record and arrivals continued to May 23rd when 4 came in from the S. at Selsey Bill.

In the breeding season there were 7 singing males along one mile of disused railway N. of Slinfold and 11 along 2 miles between Hardham and Coldwaltham. One at Alfriston on Oct. 22nd was the last autumn record.

236. **COLLARED DOVE** (*S. decacoto*).—At the beginning of the year the largest parties recorded were c.60 at Westmeston and c.50 at Ichenor, Patcham, Winchelsea and Eastbourne; a flock of up to 80 were present at Seaford from May to July.

At Selsey Bill one flew in from the sea on May 24th. A bird ringed in Belgium in October 1968 was retrapped near Seaford in June.

In the autumn up to 100 regularly at Beachy Head. At the end of the year there were c.70 at Church Norton, c.40 at Patcham and c.30 in the lower Cuckmere Valley. It should be noted that these gatherings are considerably smaller than those reported in recent years.

Breeding Season

Breeding season records were received from 67 localities. The species was newly recorded in the 15 areas listed below; breeding was definitely established in those asterisked.

Broadbridge Heath	Hailsham	Ovingdean
Coldwaltham*	Hampden Park	Rye*
Cowfold	Lindfield	Slinfold
Crowhurst	Litlington	Uckfield
Haywards Heath*	Nyctimber	Woodingdean

A detailed paper describing the continued spread of the Collared Dove in Sussex appears on page 61.

237. **CUCKOO** (*Cuculus canorus*).—Two young birds were found in a Robin's nest at Nyewood (Brig. Melsom). On July 26th GM saw a variant at Possingworth. It was uniformly very dark slate, almost black, with white belly and under-tail coverts heavily barred blackish.

Owl Species.—Please note that all records are very urgently required, not only for the breeding season but also for the winter.

241. **BARN OWL** (*Tyto alba*).—There were 18 known pairs, 3 of which raised 6 young, and 3 probable pairs recorded. With 23 other birds seen regularly in the breeding season the species seems to be maintaining its numbers. The reports suggest, however, that observer coverage of owl territories in general has declined. It seems particularly important to keep a close watch on this species.

The main distribution of pairs suggested by the records was as follows: Horsham area, 10; Worthing area, 9; Arundel area, 7. In addition there were 12 winter-only records and 3 reports of birds found dead by roadsides. The species may suffer high casualties from fast moving traffic and records of this would be very valuable.

246. LITTLE OWL (*Athene noctua*).—Thirty known pairs were recorded and 11 young were known to have been reared. In addition 5 possible pairs were noted and there were reports of 30 single birds in the breeding season. On the evidence supplied the species seems to be barely holding its own in the county but changes in status are difficult to assess, with large areas not covered regularly. Where coverage is continuous numbers appear to be fairly static.

The main distribution of pairs recorded was as follows: Blackdown, circle 2 miles radius, 3 and 5 single birds; Horsham area, 7 and 3 possible; Worthing area, 6; Chichester area, 6; East Sussex, 7 and one possible. We are particularly short of information on the species in East Sussex. Single birds were noted in 7 areas in the winter only.

247. TAWNY OWL (*Strix aluco*).—The intensive coverage given to this species over the last 3 years has declined and some areas known to hold pairs regularly were not visited in 1969. However records of 49 known pairs, 14 possible pairs and 35 single or calling birds during the breeding season were received, together with 7 additional winter records. Accepting an estimate of 70 pairs based on this information, this compares favourably with an estimated 94 pairs in 1968, when the Petworth/Midhurst area alone held 31 pairs, but was not visited in 1969. It should be stressed that these figures do not represent a total county population but are simply comparisons of records received; by and large records tend to come from the same observers and areas each year. Breeding success was similar to 1968, with 7 pairs known to have reared 14 young; the average brood size recorded in 1968 was 2.1.

The main concentrations noted were as follows: Blackdown, circle 2 miles radius, 8 pairs and 10 single birds; Horsham area, 20 pairs; Worthing area, 18 pairs; Arundel area, 8 pairs. There were also 16 pairs recorded from East Sussex, where more information would be most valuable.

248. LONG-EARED OWL (*Asio otus*).—There were only 3 records, 2 of which almost certainly related to spring migration; singles at Beachy Head on Mar. 28th (RL) and Rye Harbour on Apr. 13th (WEH, PJM). The other was seen in the interior on May 6th.

249. SHORT-EARED OWL (*A. flammeus*).—There was a marked increase in records, which are tabulated below, these being the highest numbers since 1965, when 65 were present in 9 months of the year. There were up to 6 in the Chantombury area in February with one on Apr. 6th, the only inland records apart from 2 in the Pulborough marshes on Nov. 28th. Five were present in the Selsey area in February, with 3 still present on Mar. 15th. On Apr. 8th one flew out SE. from Pagham Harbour.

The first autumn record was from Findon on Oct. 2nd and there was a widespread arrival along the coast from Camber to Selsey Bill in November. These had apparently dwindled to 2, however, by the end of the year.

Jan.	Feb.	Mar.	Apr.	Oct.	Nov.	Dec.
14	16	9	4	5	12	2

252. NIGHTJAR (*Caprimulgus europaeus*).—First recorded on May 6th at Wych Cross; one at Hailsham on Sept. 17th was the last.

Breeding Survey

An estimated total of 65 pairs or singing males were found in 36 localities in 1969.

Since this survey commenced in 1967 this species has been recorded from almost the entire length of the Downs in West Sussex and also from Patcham, Stammer and Lullington Heath. The bulk of the records have however come from a further 34 areas in the interior which are listed below:—

Regate Common	Southwater	High Hurstwood
Linchmere Common	St. Leonards Forest	Hoth Wood
Marley Common	Lower Beeding	Hornshurst Wood
Blackdown	Sullington	Bridge Park
Iping Common	Washington	Broadwater Forest
Ambersham Common	Tilgate Forest	Hawkhurst Common
Lavington Common	Worth Forest	Heathfield Park
Petworth	Worth Lodge Forest	Vert Wood
Coates Wood	The Warren	Nate Wood
Flexham Park	Brantridge Forest	Arlington
Plastow	Ashdown Forest	
Loxwood	Chalvey Common	

All records for the breeding season are required; records for the extreme east of the county and any area not listed above will be particularly welcome.

255. SWIFT (*Apus apus*).—First recorded on Apr. 20th at Selsey Bill, thereafter single birds at Chichester G.P. and West Worthing, and 6 at Barcombe, on Apr. 22nd. At Selsey Bill 209 recorded flying N. on 38 days between Apr. 20th and May 31st, with a max. of c.80 on May 11th when there was also a peak of c.40 flying N. at Beachy Head. On May 18th there were c.300 at Chichester G.P.

In June 72 were seen to depart at Selsey Bill. Numbers in the autumn at Selsey Bill and Beachy Head were small; 250 W. on July 6th was the largest movement at Selsey Bill and on no day were there more than 25 at Beachy Head. The last records were of 4 separate birds over Beachy Head and one over Brighton on September 29th.

Breeding Survey

Questionnaires relating to the location of breeding colonies in 1968 and 1969 were returned by 86 and 35 members respectively and much valuable information was obtained.

MAH and SWMH surveyed "breeding swifts" present during late May and early June in c.160 square miles of north West Sussex bounded by the Surrey border, Crawley Urban district, the A23 road and grid references TQ 000300, 000200 and 270200; a total of 546 birds were found including 154 in Horsham and 61 in Crawley. Counts were also received for 41 other localities in East and West Sussex and it is hoped to provide a detailed report of these results in the 1970 Sussex Bird Report.

This Survey is being continued; evening counts of birds in the vicinity of their breeding colonies in June will be most welcome.

256. ALPINE SWIFT (*A. melba*).—One at Beachy Head on Sept. 27th (many obs.). This record has been accepted by *Brit. B.*

258. KINGFISHER (*Alcedo atthis*).—Between January and March a total of 24 recorded in 10 inland and 7 coastal localities.

A further increase in breeding season reports with records from 46 localities. Nine pairs were proved to breed, although little exact information on breeding success was obtained, and 5 other definite pairs were noted. All other breeding

season records are simply of birds present, in 32 localities; most are casual sightings and it is reasonable to suppose that breeding occurred in many cases. At the end of the year a total of 29 recorded in 24 inland and 5 coastal localities. The records suggest that many breeding birds are resident. Inland sites holding birds in winter would therefore be worth checking for breeding pairs in summer.

Between May and September CRG trapped 7 at Chichester G.P. and PJW trapped 5 at Littleington between July and October.

259. **BEE-EATER** (*Merops apiaster*).—One at Beachy Head on June 5th (MEC). This record has been accepted by *Brit. B.*

261. **HOOPOE** (*Upupa epops*).—Single birds at the Cuckmere on Apr. 8th and 27th and Goodwood on the 26th. In May singles at Birdham and Jevington on the 13th, one at Beachy Head on the 17th and 18th, 2 there on the 28th and one at Rodmell at the end of the month. Only one autumn record, at Angmering on July 4th.

Woodpeckers. All Woodpecker records are urgently required. Much information has been gathered in the past 5 years, an analysis of which is in preparation, but more is still wanted.

262. **GREEN WOODPECKER** (*Picus viridis*).—An increase in records for the fourth successive year and the species now seems fully recovered from the effects of the 1962/63 winter, except that it is still absent as a breeding bird in coastal areas in the SW.

Counts of breeding pairs were: Blackdown, 2; Petworth Park, 3; Amber-sham Common, 3; Coates Common Woods, 3; St. Leonard's Forest, Lily Beds, 3; Wych Cross, 2 in 35 acres of woodland; Pebsham, 6 in one square mile. There were also 6 in Kingley Vale on Apr. 16th. Elsewhere birds were noted in 78 localities widely distributed over the county.

263. **GREAT SPOTTED WOODPECKER** (*Dendrocopos major*).—Counts of breeding pairs were: Blackdown, 2; Shillinglee Park, 3; Petworth Park, 2; Ambersham Common, 3 or 4; Coates Common Woods, 3; Parham, Northpark Wood, 3; Clapham Wood (E.), 3; West Chiltington, 3 on 150 acres; Roman Woods, 3; Wych Cross, 2 in 35 acres of woodland; Pebsham, one in one square mile. Elsewhere there were records of birds present from 62 localities.

264. **LESSER SPOTTED WOODPECKER** (*D. minor*).—Definite breeding pairs were noted at West Chiltington, Ambersham Common and Milton Mount. Records of birds present in the breeding season were received for a further 21 localities, rather more than in 1968. In winter birds were noted in another 9 areas.

265. **WRYNECK** (*Jynx torquilla*).—In the spring single birds at Beachy Head on May 8th, 10th and 25th. Fifteen recorded in the autumn between Aug. 31st and Oct. 28th, all singly unless otherwise stated, as follows: Beachy Head on Aug. 31st and Sept. 21st; Bexhill area on Sept. 4th and 11th, Oct. 4th and from the 21st to 28th, with 2 on the 26th (SR); Weir Wood Res., Sept. 8th and 21st; Patcham, Sept. 10th; Worthing and Newhaven Tidemills, Sept. 15th; Pett Level, Sept. 19th; Sidlesham Ferry, Sept. 21st; Church Norton, Sept. 29th.

271. **WOODLARK** (*Lullula arborea*).—One at Beachy Head on Feb. 9th and 3 W. on 16th were the only records for the early months. One in the Cuckmere Valley on Aug. 8th. In the autumn the only records were of single birds at Lullington Head on Sept. 15th, at Beachy Head on Oct. 9th and 10th and one there on Nov. 5th.

Breeding Season

A total of 4 pairs and 2 singing males were found in four areas of West Sussex; the exact locations are suppressed for security reasons. There were no records from East Sussex. A paper describing the decline of this species in Sussex and including a summary of the results of the 1967-69 breeding survey appears on page 65.

272. **SKYLARK** (*Alauda arvensis*).—Breeding season counts received were: 6 pairs on Pilsey Island, 8 pairs on c.1,000 acres of downland farmland between Well Bottom and Chantonbury and 4 pairs on 75 acres of Cattlestone Farm, West Chiltington.

The autumn maximum at Selsey Bill was 225 on Nov. 22nd; at Beachy Head c.2,000 on the 30th. On the 24th 270 came in from the sea at Bexhill.

274. **SWALLOW** (*Hirundo rustica*).—First recorded at Pebsham on Mar. 3rd (TB, SR). Spring arrivals at Selsey Bill totalled 400 N. in 35 days (333 hrs.) watching between Apr. 12th and May 31st, peak 122 on May 11th. The maximum recorded at Beachy Head was 50 on May 28th.

Nine pairs bred successfully at Cadborough Farm, Rye, and scattered reports from other localities indicate a successful breeding season generally. For example 7 nests at Plumpton produced 24 young and 9 at Wartling 40 young.

Autumn passage at Selsey Bill totalled 90 E., 250 W., and 3,235 S. in 31 days (303 hrs.) watching between July and October, peaks 695 S. on Aug. 30th and 700 S. on Sept. 20th. At Beachy Head the largest movements occurred in the first week of September, with up to 13,000 recorded on several days. In the second half of November 27 birds were noted, the last being one at Horsham on the 28th.

276. **HOUSE MARTIN** (*Delichon urbica*).—First recorded on Apr. 10th at Broadoak; one at Chichester G.P.s on 13th and one at Pulborough on 15th. Thereafter a gradual build up was noted throughout the county. No large spring movements were noted from either Selsey Bill or Beachy Head.

At Selsey Bill 2,594 departed S. in 31 days (303 hrs.) watching from July to October with a peak of 1,075 on Aug. 30th. There were c.500 at Selsey on Aug. 23rd and c.500 at Barcombe on Sept. 4th. At Beachy Head the largest movement was on Sept. 14th when 10,000 birds flew E. and there were c.1,000 present on Sept. 27th.

An albino was seen at Burgess Hill on Oct. 1st. More November records were received than usual from both inland and coastal localities, the last being of 6 birds at Swanbourne Lake on Nov. 16th.

Breeding Survey

106 members returned questionnaires relating to the 1968 breeding season and 45 completed questionnaires for 1969, with the result that a considerable amount of information is now available on the breeding distribution of the species in the county. Counts of nests occupied in 1969 were as follows:—

Arundel (Park House)	c.30	Horsham	86+	Rusper	c.10
(C. of E School)	c.15	Houghton	c.15	Rye	34
Billingshurst	c.20	Lewes	c.70	Ringmer	156
(High Street and East of A29)	c.36	Parham House	c.25	Sidlesham	24
Broadbridge Heath	4	(Kings Beach Estate)	c.15	Stinfold	8
Burwash	17	Partridge Green	38	Storrington	c.20
Crowborough	80+	Pevensy Bay	c.40	Uckfield	c.50
Hampden Park	35	Pulborough	27	Warrham	c.20
		Rottingdean		Winchelsea	12
				South Harting	67
					c.19

This survey is being continued. All records of breeding will be useful but counts of occupied nests in defined areas will be particularly welcome.

277. SAND MARTIN (*Riparia riparia*).—First recorded on Mar. 21st at Chichester G.P. Spring movements appeared to be very small, the maximum noted at Chichester G.P. being 85 on Apr. 13th. Arrivals were still occurring at the coast in June.

Counts at breeding colonies were: Chichester G.P., 30 nests; Aldingbourne G.P., 29 nests; Washington and Sullington quarries, 1,550 nests in 12 colonies; Rye Harbour, 30 pairs. The Washington and Sullington figures represent a considerable decline since 1967, when there were 2,980 nests in 25 colonies.

Autumn movements at Selsey Bill totalled 31 W. and 5,595 S. in 22 days (241 hrs.) watching between July 1st and Sept. 13th, peak 4,290 S. over Aug. 31st/Sept. 1st. The largest movement at Beachy Head was 500 E. on Sept. 5th and there were c.1,000 at the Cuckmere on the 4th. Two at Pebsham on Oct. 16th were the last recorded.

278. GOLDEN ORIOLE (*Oriolus oriolus*).—Single birds at Beachy Head on May 19th (RHC) and Church Norton on June 14th (DSF).

281. CARRION CROW (*Corvus c. corone*).—A pair bred on an electricity pylon near Rodmeil and one did so on a gantry at Southwick.

281. HOODED CROW (*C. c. cornix*).—One at the Cuckmere from Jan. 13th to Apr. 9th, with 2 on Jan. 13th and Feb. 19th (many obs.). One at Weir Wood Res. on Jan. 25th and Feb. 13th (many obs.). One at Pebsham on Nov. 11th and up to 7 there daily thereafter, to the end of the year (SR *et al*). One at Piddinghoe on Dec. 2nd (DCL).

282. ROOK (*C. frugilegus*).—Counts of breeding colonies were received as follows: Pagham parish, 101 nests in 6 colonies; Rottingdean/Ovingdean/Woodingdean, 177 nests in 6 colonies; Winchelsea/Peasmarsh/Iden/Rye, 619 nests in 9 colonies. In addition 12 other colonies containing a total of 526 nests noted at New Bridge, Billingshurst, Horsham, Coneyhurst, Barnes Green, Newhaven, West Dean and East Dean (East Sx.), Filching Manor, Hailsham, Fisham and Crowhurst.

289. BLUE TIT (*Parus caeruleus*).—Seven nests at Plumpton produced only 17 young, an average brood size of 2.4; only 2 nests were successful (RJI).

290. COAL TIT (*P. ater*).—Rather more numerous than usual at Beachy Head during the autumn, between Sept. 17th and Nov. 23rd, the largest count was 15 on Sept. 19th. There were also c.40 between Bulverhythe and Glyne Gap on Sept. 30th, when 4 also came in N. from the sea there.

293. WILLOW TIT (*P. montanus*).—Recorded in the breeding season in 25 localities but breeding was only proved at West Chiltington and Darwell. There were 12 in Abbot's Wood Arlington on Apr. 19th.

294. LONG-TAILED TIT (*Aegithales caudatus*).—Reported from 41 localities in the breeding season. Records included counts of 4 pairs in Roman Woods, at least 5 pairs in Kingspark Wood, Plaistow, 4 pairs along the old canal between Hardham and Greattham bridges and 3 pairs in 35 acres of woodland at Wych Cross. The records suggest another successful breeding season. For example 7 family parties were seen in St. Leonard's Forest Lily Beds on June 13th and numerous other parties of between 6 and 16 were reported. On Sept. 5th there was a party of 30 at West Chiltington.

295. BEARDED TIT (*Parurus biarmicus*).—In contrast to the previous 4 or 5 years very few were seen. In the early months there were 2 at Church Norton until Mar. 30th and 5 there on Apr. 4th and 7th, and up to 3 at Pett Level in January and February.

There were no autumn records.

296. NUTHATCH (*Sitta europaea*).—One at Beachy Head on Apr. 7th and 27th. MJR found it apparently quite absent from the Newhaven/Lewes/Hailsham/Eastbourne area.

299. WREN (*Troglodytes troglodytes*).—Seven nests at Plumpton produced 20 young, an average brood size of 2.9; 5 nests were successful (RJI).

301. MISTLE THRUSH (*Turdus viscivorus*).—Four flew out S. at Selsey Bill on May 3rd. A pair nested on a telephone pole in Rottingdean.

302. FIELDFARE (*T. pilaris*).—Few appeared to be wintering in the early months but there was a marked influx during the February cold spell, when some W. movement also took place at the coast, with 1,500 W. at Beachy Head on the 16th. A marked return passage seemed evident in late March with parties of up to 700 in 5 localities between the 16th and 26th. Two at Greattham on Apr. 20th were the last spring birds.

In the autumn first recorded at Beachy Head on Sept. 20th. Autumn passage was very poor, the maximum recorded at Beachy Head being only 20, on Nov. 30th, but there were 100 at Crowhurst on the 8th and c.1,000 at Cumber on Dec. 21st.

303. SONG THRUSH (*T. philomelos*).—During the February cold spell 500 flew W. at Newhaven on the 9th and there were 300 at Beachy Head on the 16th. At Plumpton 64 nests reared only 73 young, an average brood size of 1.1; only 22 nests were successful (RJI).

The autumn maximum at Beachy Head was 220 on Oct. 4th and 10th.

304. REDWING (*T. iliaceus*).—Scarce in the early months except during the February cold spell when there was a large influx, and heavy W. passage at the coast, including c.40,000 W. at Beachy Head on the 16th.

In the autumn 2 at Crowhurst on Sept. 24th were the first recorded and large movements there in October, with c.2,000 flying N. on the 13th, c.1,000 present on the 22nd and c.2,500 on the 26th. The peak count at Beachy Head was 300 on Nov. 30th and 154 flew out SW. at Selsey Bill on the 29th.

307. **RING OUZEL** (*T. torquatus*).—First recorded on Mar. 30th, at Sidlesham, and between then and May 18th 7 were seen.

In the autumn recorded at Beachy Head between Aug. 31st and Nov. 9th, with a maximum of 40 on Oct. 19th. Elsewhere a total of c.72 recorded between Sept. 7th and Nov. 17th; most were noted at Crowhurst, with a maximum of c.40 on Oct. 22nd. One at Exceat on Dec. 21st (PJW).

308. **BLACKBIRD** (*T. merula*).—The spring maximum at Beachy Head was 65 on Mar. 23rd. On Apr. 27th 6 departed at dusk high to the NE. at Seaford golf-course.

At Plumpton 75 nests produced only 59 young, an average brood size of 0.8; only 19 nests were successful (RJJ).
The autumn maximum at Beachy Head was 80 on Sept. 23rd.

311. **WHEATEAR** (*Oenanthe oenanthe*).—One at East Head, West Wittering on Jan. 22nd (RJS). This appears to be only the second January record for the county, although the species has probably wintered on several other occasions. In the spring first recorded on Mar. 5th at Crowhurst marsh. The spring peak at Selsey Bill was 52 on Apr. 17th; at Beachy Head 15 on May 3rd.

Single breeding pairs were recorded at the Cuckmere and Langney Point, both rearing young, and Crowhurst marsh. There were 4 breeding pairs in the Rye Harbour area and a pair may have bred on Shoreham beach. One at Cissbury on June 11th.

Autumn passage noted from Aug. 8th to Nov. 14th with peaks of c.100 at Beachy Head on Sept. 5th and 20th. One at North Stoke on Dec. 30th (DAW) was either a very late passage bird or wintering.

317. **STONECHAT** (*Saxicola torquata*).—In January and February c.70 wintering birds recorded from 25 localities. Autumn passage was first noted at Bexhill on July 30th and reached a peak of c.50 birds there in late October. At Beachy Head there was a maximum of c.50 birds on Sept. 15th, and at Selsey Bill a maximum of 24 on Nov. 1st. In December c.55 birds were found wintering in 22 localities.

Breeding Survey

Breeding pairs or singing males were recorded as follows: Weavers Down, one; Iron Hill, one; Blackdown, 3; Ambersham Common, one or 2; Graffham Common, one; Rewell Wood, one; St. Leonards Forest, 2; Ashdown Forest, 14 (75% coverage but much habitat destroyed by fire at Easter); Peacehaven, one; Newhaven Head, one; Seaford Head, one; Crowlink, 2; Lullington Heath, 3; Jevington, one; Beachy Head (Birling Gap to Whitbread Hollow), 15-17; St. Leonards-on-Sea, 4. No records were received for Iping and Pound Commons, the Seven Sisters or Fairlight where the species normally breeds. Negative reports were received for Chailey and Ditchling Commons and the Downs between the Rivers Arun and Cuckmere, where breeding has been noted since 1962, or from other possible sites in the interior. Nevertheless the total in 1969 of 52-55 pairs or singing males compares favourably with the numbers recorded by the survey between 1962 and 1964, see SBR 1964.

All records for the species will be very welcome.

318. **WHINCHAT** (*S. rubetra*).—First recorded on Apr. 27th at Selsey Bill and a spring peak of 5 there on May 14th; the spring peak at Beachy Head was 20 on the 3rd. One at Pagharn on June 7th but no records suggestive of breeding were received.

Autumn passage noted from July 5th until Oct. 21st, with peaks of 45 at Beachy Head on Sept. 3rd and 40 at Sidlesham on the 11th.

320. **REDSTART** (*Phoenicurus phoenicurus*).—The first records were of single birds at Selsey Bill on Apr. 12th, Beachy Head on 16th and Shoreham on 17th. Spring passage was poor with only 4 birds being recorded at Selsey Bill between Apr. 12th and May 20th. Likewise at Beachy Head there were only 4 records during the period Apr. 16th and May 18th.

In the autumn passage noted at Selsey Bill between Aug. 17th and Sept. 20th when there was a maximum of 6. The numbers at Beachy Head were lower than usual; passage was first noted on Aug. 1st and lasted until Oct. 21st, with a maximum of 25 on Sept. 20th. At Crowhurst Marsh, first recorded on Sept. 11th; c.20-30 daily present at the end of the month thereafter declining to single birds in late October. The last record for the county was at Crowhurst Marsh on Oct. 28th.

Breeding Season

The poor spring passage noted above and preliminary information from the B.T.O. Common Bird Census suggest that 1969 was a poor year for this species. The disappointing results from the Sussex breeding survey provides further evidence of this. Breeding pairs or singing males were recorded from the following localities: Linchmere, 2; Stanley Common, 3; Chapel Common, 2; Henley, 2; Ashdown Forest, 2; and single pairs at Marley Common, Blackdown, Lodsworth, Peatworth, Flexham Park, Coates Wood, St. Leonards Forest, Worth Forest, High Hurstwood, Hoth Wood, and Fridge Park.

All breeding season records for this species are urgently required.

321. **BLACK REDSTART** (*P. ochreus*).—In the early months single birds were wintering at Selsey Bill, Southwick and Portobello Brighton, with 2, possibly 3, round Shoreham Harbour. Spring passage was unusually large with c.73 recorded between Mar. 7th and May 5th; the largest count was 10 at Beachy Head on Apr. 16th.

One breeding pair was found which was unsuccessful, and there were records in the breeding season or suggestive of breeding from 3 other localities.

Autumn passage was noted from about the end of August and c.59 were recorded up to Nov. 26th, with a maximum count of 25 at Beachy Head on Oct. 19th. At the end of the year there were singles wintering at Roedean and Seaford Head and 2 at Southwick.

322. **NIGHTINGALE** (*Luscinia megarhynchos*).—A further welcome increase in breeding season reports. Counts of pairs received were: Blackdown/Lurgashall/Petworth/Northchapel, 22; Bextley Hill, 8; Flexham Park, 5. Counts of singing males received were: Billingshurst (TQ058218 and 080285), 16; Gay Street (TQ090205), 6; Cattleston farm, West Chiltington, 10 in a circle one mile radius; Roman Woods, 7; Slinfold parish, 9; Abbot's Wood Arlington, 10. In addition records of one to three pairs or singing males came from 35 other localities.

324. **BLUETHROAT** (*Cyanosylvia svecica*).—Rather unusual numbers in the autumn as follows: single birds at Sidlesham on Sept. 1st and 21st (MS); a total of 5 individuals in the Bexhill area between Sept. 19th and Oct. 28th (TNB, SR); 6 at Beachy Head on Sept. 20th (many obs.) and one at the Midrips on the same day (KOS).
327. **GRASSHOPPER WARBLER** (*Locustella naevia*).—First recorded on Apr. 7th at Beachy Head. Spring peak there was 20 on Apr. 27th. Six singles were seen at Selsey, the last on May 24th. Breeding pairs, based on singing males, totalled 98. Areas holding more than 2 pairs were: Rewell Wood, 3; Newell's Rough, 4; Charlton Forest, 12; Gay Street Woods, around TQ082085, 5; East Hoathly Great Wood, 3; St. Leonard's Forest, 3; Beachy Head, 8; St. Leonard's on Sea, 6; Lullington, 3; Cissbury, 3. A pair at Litlington raised five young in a reed bed. The last recorded was one at Beachy Head on Nov. 1st (MJH), the latest date for the county.
332. **GREAT REED WARBLER** (*Acrocephalus arundinaceus*).—One at Glyne Gap on May 11th (SR *et al*) was trapped. One at Chichester G.P. on June 4th (JVS, MS). These records have been accepted by *Brit. B.*
333. **REED WARBLER** (*A. scirpaceus*).—The first recorded was one at Church Norton on Apr. 19th. Counts of breeding pairs were: Church Norton, 15; Sompington Brooks, 2; a two and a half mile stretch of Chichester canal at Donnington, 14; Newhaven Levels, 4; Crowhurst Marsh (Filsham and Glyne included), 50.
In autumn 180 were trapped at Chichester G.P., and at Beachy Head a peak of 10 was noted on Sept. 18th. The last recorded was at Glyne Gap on Oct. 29th (SR), a very late date.
334. **MARSH WARBLER** (*A. palustris*).—In the same locality as in the previous 2 years a pair from May 24th into June.
337. **SEDGE WARBLER** (*A. schoenobaenus*).—First recorded on Apr. 7th at Chichester G.P. and Church Norton. At the latter area a spring maximum of 68 was reached on Apr. 27th. Breeding pairs reported were: Church Norton, 5; Selsey S.F., 7; Patching Pond, 4; a two and a half mile stretch of the Chichester Canal at Donnington, 22; Glyne Reach (300yds.), 7; Scaynes Hill S.F., 2; Litlington, 3; Crowhurst Marsh, 40.
In autumn 333 were trapped at Chichester G.P. (CRG), up to 100 present at Glyne Gap and 10 at Beachy Head. The last recorded was one at Filsham on Oct. 19th.
338. **AQUATIC WARBLER** (*A. paludicola*).—Singles trapped at Chichester G.P. on Aug. 9th and Sept. 6th (RCHG, MRK, BJS, ABW) and one trapped at Litlington on Aug. 7th (PJW). One there on Aug. 9th was possibly a different individual (PJW). These records have been accepted by *Brit. B.*
339. **MELODIIOUS WARBLER** (*Hippolais polyglotta*).—One at Beachy Head on Oct. 4th (SDH).
343. **BLACKCAP** (*Sylvia atricapilla*).—One wintered at Ichenor. One at Pulborough on Jan. 2nd, and one at Southwick from Feb. 15th into March. The spring passage was small, the only sizeable concentrations being 20 at Pebsham on Apr. 8th and 40 Glyne Gap on May 11th.
In autumn recorded regularly at Beachy Head until Nov. 16th with a peak of 100 on Sept. 23rd. Numbers there were lower than in recent years. One at Southwick on Nov. 18th.
344. **BARRED WARBLER** (*S. nisoria*).—At Beachy Head 4 singles in September: one trapped on the 13th and 14th (RHC), one trapped on the 18th (RHC), one seen on the 20th (ARK, BAEM, IRW *et al*) and one trapped on the 23rd (RHC).
346. **GARDEN WARBLER** (*S. horin*).—First recorded on Apr. 27th at Church Norton and Beachy Head. Spring passage involved higher numbers than usual at Beachy Head with a maximum of 20 on May 11th when 100 were estimated at Pebsham (SR).
In autumn recorded until Oct. 18th at Beachy Head. The peak there was 75 on Aug. 13th.
347. **WHITETHROAT** (*S. communis*).—First recorded on Apr. 11th at Church Norton. This species was noted by several observers to be scarce both in breeding areas and on passage, a general situation throughout the country. At Beachy Head a spring peak of 40 was reached in late May, compared with a peak of 160 in 1968. The breeding population there was estimated to be at least one third lower than usual, at Allfriston a 75% decrease was noted and a 50% decrease was noted in parts of West Sussex.
Numbers at Beachy Head in autumn were the lowest on record with a peak of 75 on Aug. 13th as against a peak of 400 in 1968. Last recorded on Oct. 28th at Glyne Gap.
348. **LESSER WHITETHROAT** (*S. curruca*).—First recorded on Apr. 21st at Chichester G.P. Spring peak at Beachy Head was 15 on May 11th, when 40 were seen at Glyne Gap. In the breeding season a total of 36 pairs were reported, mostly singly but including 14 around Pebsham, Bexhill, a very high concentration.
Higher figures than in the past 3 or 4 autumns at Beachy Head with maximum of 65 on Aug. 16th. Last recorded on Oct. 9th at Glyne Gap.
353. **DARTFORD WARBLER** (*S. undata*).—Recorded from 3 localities in the breeding season, in all of which breeding was apparently successful. The records of singing males suggest a total population of 7 pairs. One at Newhaven Tidemills on Nov. 5th (TG).
354. **WILLOW WARBLER** (*Phylloscopus trochilus*).—First recorded on Mar. 22nd at Rottingdean (AJC). The spring peak at Beachy Head was 50 on Apr. 28th and at Selsey Bill 220 on Apr. 17th. On June 13th SWMH counted 104 singing males in 1,000 acres of St. Leonard's Forest and on the 14th 32 in 250 acres of Roman Woods.

356. **CHIFFCHAFF** (*P. collybita*).—An unusual number of winter records: one at Pebsham Wood on Jan. 1st, one at Chichester G.P. on Jan. 5th, one at Amberley on Jan. 27th, one at Selsey Bill on Jan. 31st, one at near Steyning on Feb. 16th and 2 there on 17th. One at Coldwaltham on Mar. 5th was also probably a wintering bird. One at Piddinghoe on Mar. 11th and, on the 15th, birds appeared at several localities. Sixty at Pebsham Wood on Apr. 15th. On single dates in the breeding season SWMH counted 17 singing birds in 350 acres of Kingspark Wood, 6 in 250 acres of Roman Woods and 12 in 1,000 acres of St. Leonard's Forest. Last recorded at Beachy Head and Glyne Gap on Dec. 9th.

In Sept. and Oct. several birds showing characters of one of the northern races, either *abietinus* or *tristis*, reported from Beachy Head, Selsey Bill and Siddlesham.

WILLOW WARBLER/CHIFFCHAFF.—Autumn peaks at Beachy Head of 100 on four dates in August and 350 on Sept. 18th. At Selsey peaks of 76 on Aug. 16th and 52 on Sept. 20th.

357. **WOOD WARBLER** (*P. sibilatrix*).—First recorded on Apr. 19th at Bexhill. Singles in May at Cissbury on the 2nd, Beachy Head on the 5th, and Selsey Bill on the 13th. In the breeding season singing males totalled 47 from 14 localities. The largest concentrations were Chapel Common, 8; Stanley Common, 4; Marley Common, 9 and Colgate, 4.

In autumn singles near Brighton from Aug. 5th to 11th, Sept. 1st and Sept. 8th and at Beachy Head on five dates in August.

364. **GOLDCREST** (*Regulus regulus*).—Notably scarce along the coast in the spring with a peak of 6 at Beachy Head on Mar. 16th and 9 at Church Norton on the 15th. C.90 pairs reported in the breeding season including 10 in St. Leonard's Forest and 10 in Kingspark Wood.

In the autumn recorded at Beachy Head from Sept. 3rd with a peak of 35 on Nov. 12th. At Selsey Bill peaks of 5 on Aug. 30th and Sept. 20th.

365. **FIRECREST** (*R. ignicapillus*).—Two over-wintered at Church Norton into March. One at Chichester G.P. on Jan. 4th, and 2 at Cissbury on the 21st. A total of c.50 were recorded in spring chiefly in March and the majority from the coast. The largest numbers were at Beachy Head with a maximum of 10 on Apr. 26th. One there on May 3rd.

In autumn recorded regularly at Beachy Head between Sept. 5th and Oct. 21st with a maximum of 7 on Oct. 11th and 18th. During October several remained off passage in the Bexhill area. Away from these two areas there were records involving 7 birds. Last recorded on Nov. 9th at Beachy Head.

366. **SPOTTED FLYCATCHER** (*Muscicapa striata*).—First recorded on May 3rd at Beachy Head. Spring peak of 20 there on May 18th and of 13 at Selsey Bill on the same day. Thirty at Pebsham on May 20th. In the breeding season c.55 pairs were recorded from 30 localities.

In autumn recorded regularly at Beachy Head until Sept. 28th with a peak of 35 on Sept. 20th. The last recorded was on Oct. 16th at Ovingdean (NAGL).

368. **PIED FLYCATCHER** (*Ficedula hypoleuca*).—In spring 8 recorded between Apr. 24th and May 17th.

In the autumn recorded at Beachy Head from Aug. 2nd, an early date, until Sept. 24th with peaks of 6 on Aug. 31st and 15 on Sept. 13th and 16th. Up to 10 at Pebsham in September. Otherwise c.16 recorded, chiefly from the coast. The last was recorded on Oct. 11th at Beachy Head.

371. **DUNNOCK** (*Prunella modularis*).—Eighteen nests at Plumpton produced 30 young, an average brood size of 1.7; 10 nests were successful (RJL).

373. **MEADOW PIPIT** (*Anthus pratensis*).—Five hundred flew W. at Beachy Head on Feb. 16th. At Selsey Bill spring arrival totalled 1,470 in 37 days (266 hrs.) watching, Mar. 1st-May 3rd, with a peak of 307 on Apr. 4th. One flew out S. there on May 12th.

In autumn 1,300 moved E. at Beachy Head including 500 on Sept. 19th. At Selsey 58 flew E. and 240 out S. in 23 days (205 hrs.) watching from Aug. 2nd to Oct. 31st.

374. **RICHARD'S PIPIT** (*A. novaeseelandiae*).—One at Pebsham on Oct. 20th (SR). This record has been accepted by *Brit. B.*

375. **TAWNY PIPIT** (*A. campestris*).—One at Beachy Head on May 24th (BWF, SDH).

In autumn 2 at Pebsham on Sept. 7th, one of which was trapped (RHC, SR, *et al.*). At Beachy Head singles on Sept. 8th, 14th, 15th and 19th and 2 on the 10th (BEC, RHC, KV). Perhaps only 2 birds were involved. All these records have been accepted by *Brit. B.*

376. **TREE PIPIT** (*A. trivialis*).—The first records were of single birds at Mannings Heath on Apr. 7th; Herstmonceux on the 8th; Broadwater Forest and Crowhurst Marsh on the 9th.

In the autumn at Selsey Bill 9 E. and 28 S. between Aug. 16th and 20th. No large movements in September and last recorded there on Sept. 20th when 6 S. and 3 in the area. C.300 departed SW. from Pebsham on Sept. 18th and 19th and there were 20 at Belle Tout on 20th. At Beachy Head c.300 moved E. during the autumn with a maximum of 50 on Sept. 20th. The last recorded was at Little Galley Hill on Oct. 23rd.

Breeding Survey

An estimated total of 175 pairs or singing males were reported from 49 localities; 50 pairs being found in 19 sites not previously visited.

All breeding season records for this species will be welcome. Information from the extreme east of the county is urgently required prior to publication of a detailed report on the status of this species.

379. **ROCK PIPIT** (*A. spinoletta*).—Maximum winter counts only are given here: at Selsey Bill up to 6 in first three months, then a complete absence until Oct. 12th and a peak of 22 on Oct. 18th and 26th. Up to 15 there in November and December. Ten at Cuckmere Haven at both ends of the year. On Feb. 17th 11 between Brighton and Rottingdean, on Mar. 17th 10 at Ferring and on Dec. 26th 10 around Thorney. One flew out S. at Selsey Bill on Apr. 17th. In the breeding season 3 pairs were present between Fairlight Glen and Pett Level and a pair at Saltdean, but no count along the whole coast was made.

Records of birds showing characters of the race *litoralis* were: one at Pevensey Bay on Mar. 6th and 2 on 7th and one on Rother Saltings on Oct. 13th. Singles showing characters of the race *spinoletta* at Beachy Head on Apr. 27th and Pagham on Apr. 16th in partial s/p.

380. PIED WAGTAIL (*Motacilla alba*).—On Jan. 12th there were 50 at Church Norton. At Selsey Bill 6 flew in from the S. between Mar. 29th and Apr. 18th and 4 flew out S. there on Apr. 8th.

Autumn figures for Selsey Bill in the period September to Nov. 12th were 12 E. and 10 S. in 24 days (182 hrs.) watching. A roost in the reed bed at Littleton reached a maximum of 350 in November. On Dec. 20th 250 were at Redgate Mill S.F. and 300 at Tunbridge Wells South S.F.

A total of 8 birds in spring and autumn were recorded as showing characters of the race *alba*.

381. GREY WAGTAIL (*M. cinerea*).—The breeding and winter surveys carried out in 1968 by WM, PFB, RRG *et al* were repeated in 1969 and extended to cover the whole county. The 1969 breeding results were as follows:

River system	Number of occupied territories in which Breeding proved	Number of occupied territories in which Breeding probable	Total young known to have fledged
West Rother	12	13	8
Arun	8	3	10
Adur	6	3	—
Mole	1	2	—
Medway	12	10	3
Ouse	26	12	12
East Rother	10	2	7
Hastings	4	2	1
Chichester	2	4	2
Cuckmere	0	3	0
TOTALS	72	48	43

Note: A dash indicates that there were no records.

Thus birds were observed at a total of 188 sites, the largest recorded population for Sussex. The species appears to have increased in recent years but the increase is, to an unknown extent, apparent only due to the intensive search made for it. The 43 young were reared by 23 pairs, an average brood size of 1.9, compared to 3.1 in 1968. Note, however, that the 1968 figures of 56 young by 18 pairs included some records of young still in the nest; based on fledged young only the average brood size was 2.0.

Passage movements at Selsey Bill and Beachy Head were rather larger than in 1968. In the spring one flew E., one out SW., 2 out SE. and 2 in N. at Selsey Bill between Mar. 7th and 23rd; none was noted at Beachy Head. In the autumn at Selsey Bill totals of 10 flew E., 4 W. and 31 out S. in 23 days (205 hrs.) watching from August to October, peak 18 S. on Sept. 6th. At Beachy Head a total of 71 were recorded between Aug. 16th and Nov. 2nd, including 18 flying E. and 6 W.; the largest movement was 8 E. on Sept. 23rd.

The winter survey recorded a total of 183 birds wintering in January/February and November/December at 117 localities. The species' principal winter habitat appears to be sewage farms, which accounted for 80% of all wintering sites found. Some roosts were noted between September and December. Eight birds were noted at Horsted Keynes and a similar number at Scaynes Hill on numerous occasions, and 20 birds were seen at Pett Level on 2

dates. All records of roosts of this species, especially from coastal marshes and inland lakes are urgently needed.

A paper describing and discussing the results of the surveys appears on page 68.

382. YELLOW WAGTAIL (*M. flava*).—First recorded on Apr. 7th at Selsey Bill, where 31 flew in from the S. in 31 days (301 hrs.) watching Apr. 12th-May 25th and one likewise on June 8th. On Apr. 25th 45 were seen at Crowhurst Marsh.

Counts of breeding pairs were: Thorney Deep, 5; Pulborough Brooks, 4; Ouse Valley E. side at Rodmell, 4 or 5; Glynde Reach, 4; Lower Cuckmere, one; Chichester G.P., one; Rye Harbour—Northpoint, one; Rye Marsh and Harbour, 8; Winchelsea Marsh, one; Crowhurst Marsh, 10; R. Adur at Shoreham, one or 2. Numbers were noted by some observers as lower than in 1968, notably in the Arun valley.

Autumn movements at Selsey Bill in August and September totalled 39 E., 28 W. and 182 S. in 18 days (170 hrs.) watching; a peak of 76 in the area on Aug. 23rd. At Beachy Head recorded until Oct. 10th with a total of 380 seen, of which 142 flew E.; maximum 30 E. on Sept. 19th. Fifty together on Pevensey Marsh on Sept. 9th. The last recorded was at Glyne Gap on Oct. 13th.

384. GREAT-GREY SHRIKE (*Lanius excubitor*).—One bird over-wintered at Worthing (sev. obs.) and was last seen on Mar. 28th (CMV). Two there on Feb. 26th (DSF). Singles at Beachy Head on Feb. 9th and Mar. 23rd/24th (MJH *et al*), Crowhurst Levels on Mar. 22nd (SR), Oxen Down on Feb. 9th (SRW), Ambersham Common on Jan. 15th to Feb. 20th (KGA, CMJ, JVS) and Ditching Common on Mar. 26th (RJB). One at Chanctonbury on Apr. 25th (DSF).

In the latter part of year singles at Beachy Head over Oct. 11th/12th and Nov. 19th/24th (sev. obs.), Ditching Common between Oct. 31st and Dec. 23rd (MHP, JAW), Chailey Common on Dec. 11th (JAW) and Glyne Levels on Nov. 20th (HSM).

385. LESSER GREY SHRIKE (*L. minor*).—One at Beachy Head on May 25th (KV). This record, which is the third for the county, has been accepted by Brit. B.

388. RED-BACKED SHRIKE (*L. collurio*).—One at Beachy Head over May 24th/25th (sev. obs.) and a male at Runcton on the 27th (JVS). One at Beachy Head on Aug. 31st (MEC) and one at Cuckmere Haven on Sept. 20th (WEH, PJM), close to an impaled stag beetle.

389. STARLING (*Sturnus vulgaris*).—Records of immigration and emigration at Selsey Bill are tabulated below; the June birds were all juveniles.

Immigration	Jan./Feb.	Mar./May	June	July	Aug.	Sept.	Oct./Dec.
Emigration	21	18	0	0	0	0	1200
Days watching	1300	1140	1120	18	0	12	1900
(Hours)	19	57	10	8	10	8	22
	(65)	(462)	(82)	(98)	(102)	(68)	(152)

During the February cold spell 6,500 flew E. at Cissbury on the 17th. There was a roost of c.10,000 in reeds at Pett Level on Oct. 12th. On Nov. 24th 300 flew in N. at Bexhill.

391. **HAWFINCH** (*C. coccyzina*).—Singles at Gravetye Manor on Mar. 29th and Cooden Wood, Bexhill on May 6th. The only record perhaps relating to breeding is of one near Lodsworth on June 6th.

In October 2 at Slinfold on the 15th, one at Crowhurst Marsh on the 21st, one W. at Beachy Head on the 25th and 2 in Pebsham Wood on the 29th and then up to 3 there daily till end of year. In November one near West Firle on the 17th, one at Shoreham on the 24th and one at Bexhill on the 25th. In December singles at West Chillington on the 8th and Ardingly College S.F. on the 28th.

392. **GREENFINCH** (*Carduelis chloris*).—On Feb. 1st 200 at Stump Bottom, Findon. At Selsey Bill 55 flew out S. in January in 11 days (38 hrs.) watching, 3 likewise on Feb. 23rd and one on Mar. 8th. One came in N. on Apr. 7th. Fourteen nests at Plumpton produced 31 young, an average brood size of 2.2; 7 nests were successful (R.J.L.).

In the autumn at Selsey Bill 695 left S. in 22 days (152 hrs.), peak 435 on Oct. 19th. At Rye Harbour up to 700 in November and December and 300 at Cuckmere Haven on Nov. 18th.

393. **GOLDFINCH** (*C. carduelis*).—At Selsey Bill 15 left S. in January and February while in April and May 135 left S. and 20 arrived N. in 44 days. Peak period was May 12th/13th when 91 departed S. Twelve nests at Plumpton produced 29 young, an average brood size of 2.4; 8 nests were successful (R.J.L.).

Autumn departure at Selsey Bill totalled 871 in 24 days (168 hrs.) from Sept. 20th to the end of the year, with a peak of 270 on Oct. 19th. At Beachy Head peaks of 350 E. on Oct. 19th and 800 E. on Nov. 23rd. On the same dates respectively 255 E. and 300 E. at Newhaven Head. Up to 200 at Weirwood Res. from October to December.

394. **SISKIN** (*C. spinus*).—In the first part of the year a total of c.295 were recorded. The largest flocks were: 60 at Milton Mount over Feb. 15th/19th, 40 at Horsham on Jan. 11th, 30 at Friston Forest on Apr. 6th and 30 flying W. at Newhaven on Feb. 8th. The last recorded were 3 at Abbot's Wood on Apr. 18th.

In the autumn first recorded at Beachy Head on Sept. 20th, where a total of 100 were seen up to Nov. 23rd. The maximum was 25 on Oct. 25th. One left SW. at Selsey Bill on Nov. 1st. In October PGD trapped 50 along the river Weir and on 14th 30 flew N. at Weirwood Res. At the end of the year a total of 65 recorded from 6 localities.

395. **LINNET** (*Acanthis camarina*).—A winter maximum of 1,500 at Stump Bottom, Findon, on Feb. 8th, and 250 W. in half an hour at Brighton. At Selsey Bill 80 left S. in January and February in 19 days (65 hrs.) watching and between Mar. 15th and May 25th totals of 104 S. and 305 N. in 49 days (436 hrs.). At Beachy Head a total of 175 N. on three dates in April. Nine nests at Plumpton produced 23 young, an average brood size of 2.5; 5 nests were successful (R.J.L.).

In the autumn 1,558 left S. at Selsey Bill in 24 days (168 hrs.) from Sept. 20th to December. Peak movement was on Oct. 19th with 675 S. At Beachy Head a total of 8,050 E. on five dates in October, with a peak of 3,000 E. on 20th. At Newhaven Head 300 E. on Oct. 19th and 143 E. on Nov. 23rd.

396. **TWITE** (*A. flavirostris*).—Monthly totals were:

Jan.	Feb.	Mar.	Apr.	Oct.	Nov.	Dec.
64	75	32	—	25	335	48

By far the largest flock was 200 at Camber on Nov. 11th (JA). Up to 40 in the Sidlesham/Pagham area at both ends of the year and 50 at Bracklesham Bay on Nov. 1st. The April record is of one at the Midrips on 5th. On Feb. 5th 4 were seen near Selsfield Common, East Grinstead and 2 there on 7th (FML). Inland records are extremely rare.

397. **REDPOLL** (*A. flammea*).—In the first four months a total of c.290 were recorded, mostly in February and March. The largest party was 60 at Lavington Common on Mar. 1st. At Selsey Bill one in from S. on Apr. 7th, 2 on 8th and one on May 4th. Recorded at Beachy Head until May 8th and one at East Dean on 19th. In the breeding season present in three localities, but no proof of breeding was obtained.

In the autumn one at Church Norton on July 5th, an early date for the coast. At Selsey Bill in October and November movements were 9 W., 18 S. and 2 N. in 16 days (114 hrs.) watching. At Beachy Head a total of 615 were recorded, mainly flying E. with a peak of 200 E. on Oct. 20th. At Newhaven Head 33 flew E. in one and a half hours on Oct. 19th. In October 270 at Pebsham Wood on 7th and at Little Galley Hill a peak of 240 on 30th. In addition a total of c.400 in 11 localities were recorded in last three months including 150 at Darwell Res. on Oct. 12th, 70 at Littleington on Oct. 6th and 30 ringed along the river Weir in November.

400. **SERIN** (*Serinus serinus*).—Single birds at Beachy Head on Apr. 17th and June 5th (MEC, RHC). Two singing males were located in the interior on May 26th and 27th, and one was still present on the 31st and June 1st. These records have been accepted by Brit. B.

404. **CROSSBILL** (*Loxia curvirostra*).—The only records were: a small party at Rewell Wood on Feb. 5th and 6 at Abbot's Wood on Aug. 3rd.

407. **CHAFFINCH** (*Fringilla coelebs*).—In winter the largest flock recorded was 600 near Chantonbury on Mar. 23rd. On Feb. 16th 60 W. at Beachy Head. Ten nests at Plumpton produced only 6 young, an average brood size of 0.6; only 2 nests were successful (R.J.L.).

A poor autumn for movement with no emigration noted at Selsey Bill. At Beachy Head 400 E. on Oct. 19th and 60 N. on Oct. 25th.

408. **BRAMBLING** (*F. montifringilla*).—A total of 430 recorded from 15 localities in the early part of the year, with maximum flocks of 160 near Bexhill in February (WEH) and 100 on Pulborough Brooks on Feb. 16th. The last spring record was of 2 at Beachy Head on Apr. 28th, a late date.

In autumn a total of c.100 at Beachy Head in October and November with a peak of 35 E. on Oct. 19th. On Oct. 11th 30 flew in N. at Bexhill. Other records totalled on c.40 birds up to end of the year.

409. **YELLOWHAMMER** (*Emberiza cirinella*).—In February c.300 at Patcham, Brighton, 90 of which were ringed by PJB. One in N. at Selsey Bill on April 17th was the third such record there. In the breeding season SWMH and MAH counted 197 singing males in a total of 2,480 acres from 12 sites in

the NW. of the county. The largest area covered was 1,000 acres of St. Leonard's Forest which held 71. The highest concentration was at Gay Street Plantation (conifers) with an average of one per 3.3 acres over 100 acres.

410. CORN BUNTING (*E. calandra*).—Four arrived from the S. at Selsey Bill on Jan. 3rd. At Belle Tout 40 on Mar. 17th and 25 there until May 11th; 40 at Rye on Feb. 24th, 60 at Cuckmere Haven on Mar. 23rd and 70 at Cissbury Ring on Apr. 25th. On Apr. 14th one arrived from the SE. at Selsey Bill and one departed SW.

In the breeding season the largest count of singing birds recorded was of 24 on the Downs between Washington and Amberley. Otherwise records of up to 4 birds only in one area.

415. GIL BUNTING (*E. cirius*).—Six at Vert Wood in February probably wintered. As in 1968 the majority of breeding season records are from the lower Cuckmere Valley where a total of 10 pairs or singing males was found, chiefly around Litlington and Friston. Other records of single pairs were: Southerham Bridge, Lewes; Eastbourne; and Thorney S.F. A pair probably bred at Beachy Head. Two at West Chilmington on Sept. 15th.

416. ORTOLAN BUNTING (*E. hortulana*).—One female at Beachy Head on May 3rd (MJH). One there on Aug. 31st and Sept. 1st was trapped (RHC *et al.*).

421. REED BUNTING (*E. schoeniclus*).—Eighty at Bexhill on Mar. 16th. One in N. at Selsey Bill on Apr. 17th, the second record there of spring arrival. In the breeding season 2 pairs at Marsh Woods, 19 pairs at Rye and Winchelsea, 24 pairs at Crowhurst, Pebsham and Glyne, 5 pairs at Langton, 9 males along the river Arun, Pulborough to Greatham and 9 males in the N.E. corner of Pulborough Brooks. In addition 8 males recorded by SWMH in young conifer plantations at 7 localities in the NW. of the county and thus it would seem that this species is changing its breeding haunts.

In the autumn at Selsey Bill totals of 11 E., 21 W. and 7 SW. between September and November.

422. LAPLAND BUNTING (*Calcarius lapponicus*).—One at Beachy Head on Nov. 26th (RHC) and 3 at Camber on Dec. 21st (DBO).

423. SNOW BUNTING (*Plectrophenax nivalis*).—In the early months 2 at Camber in January and 17 on Feb. 1st, 25 at Rye on Jan. 5th, one at Bracklesham on Feb. 15th, 15 at the Midrips on Mar. 9th and one at Bexhill on 14th. Inland records were one at Ditchling Beacon on Mar. 28th (RJB) and 2 at Findon on Jan. 19th (RL, RJS).

Fourteen at Rye Harbour on Nov. 22nd and up to 35 at Camber in December. Two at Newhaven in December and one at Cuckmere Haven on 2nd and 10th.

425. TREE SPARROW (*Passer montanus*).—The largest winter flocks were noted in February with up to 200 at Cooden, 200 at Worthing on the 15th and 100 at Pulborough on the 22nd. In March there were up to 100 at Ditchling Beacon.

In the breeding season pairs were recorded as follows; where no figure is given no exact count was received: Rodmell; Hoove, 2 or 3 pairs; Ninfield, 2 or 3 pairs; Pulborough; South Stoke, one pair; West Chilmington, 5 pairs; Parham, one pair; Weir Wood Res., one pair; Sidlesham; Scaynes Hill; Etchingam; Mayfield; Chichester G.P.; Albourne; Ringmer; Hardham Priory, one pair; Watersfield, one pair; Slinfold, one or two pairs; Partridge Green, one pair; Bexhill; East Hoathly, 2 pairs; Steyning; Isfield.

At Beachy Head recorded regularly between September and November, with a peak in October of 800 flying E. between the 19th and 21st. At Selsey Bill 19 flew out SW. on Oct. 26th. There were up to 400 at Bexhill between October and December and 250 at Cissbury on Dec. 26th.

ADDITIONS AND CORRECTIONS TO THE 1968 REPORT

Ducks.—The peak numbers for Jan./Mar. at Darwell Res. were as follows, not as shown in the table on page 19: Teal, 80; Wigeon, 165; Tufted Duck, 50; Pochard, 150.

223. SANDWICH TERN.—The peak movement in the spring at Beachy Head occurred on Apr. 18th, not 16th as stated.

227. GUILLEMOT.—One showing the characters of the race *adige* at Shoreham Harbour on Nov. 27th.

287. HOODED CROW.—The initials ARK with the record of Apr. 26th should be deleted.

388. RED-BACKED SHRIKE.—The bird at Pebsham stayed until Nov. 6th, not 5th as stated.

SUMMARY OF BIRD RINGING IN SUSSEX, 1969

Compiled by

P. J. WILSON

A total of 12,554 birds of 103 species were ringed in 1969, compared with 13,445 birds of 105 species in 1968. The year's total was composed of 17 separate totals compared with 11 in 1968.

Interesting birds ringed other than at Beachy Head (see below) included a Buzzard by J. A. Wiggzell, 2 Aquatic Warblers by Chichester Ringing Group and 76 Collared Doves and another Aquatic Warbler by P. J. Wilson.

As usual very few waders were ringed; a total of 118, of which 104 were accounted for by one ringer. As has been pointed out previously this could surely be improved upon in a coastal county such as Sussex.

Details of ringing at Beachy Head are set out on page 52.

BEACHY HEAD RINGING STATION, 1969

1969 saw the completion of ten years watching at the Head and it is satisfying to see the way interest in the area has developed since 1960, when watching began. In those early days the four or five original ornithologists were making only weekly visits as compared to the present day, when there are a score or so of ornithologists and two resident families regularly in the area.

A total of £27 5s. 8d. was raised towards the running of the Station by subscription from the active ringers, and a further £12 0s. 6d., including a £10 donation from the Sussex Ornithological Society, was contributed by visitors to the Station. The expenditure of £33 was lower than estimated, due mainly to an unexpected lack of whitethroats which lowered the ringing total considerably.

The Society organised three outings to the Station, all in the autumn. During one of these visits on 27th September, members were extremely fortunate in seeing an Alpine Swift at close range for some time at Cow Gap, and a few members saw a Red-throated Pipit which was present on a later outing. Perhaps the most disturbing development for several years has been the incredible dearth of Whitethroats in 1969. Exceptionally few birds arrived in the spring, and numbers failed to pick up in the autumn. The amount of the decrease is perhaps best shown by comparison with previous years' ringing. In the previous nine years, 17,000 birds have been ringed, of which 3,800 have been Whitethroats, i.e., 22½% of the total. In 1969, the ringing total was 2,626, of which 123 were Whitethroats, i.e., 5% of the total. Thus an enormous population drop of 75-80% is indicated, and is substantiated by other methods of calculation. Several other species were similarly affected, but to a lesser degree, e.g., Sedge Warbler, Redstart, whilst on the other hand, Garden Warblers were in substantially higher numbers.

R. H. Charlwood had another successful year's ringing at Hodcombe with Ortolan Bunting, Tawny Pipit, Icterine Warbler and three Barred Warblers among the 2,497 birds of 61 species ringed. The three Barred Warblers were in fact all ringed in a comparatively short period of time, and but for the ringing might have been recorded as one individual.

List of species ringed in 1969 at Beachy Head Ringing Station:

Kestrel	3	Stonechat	20	Spotted Flycatcher	31
Wryneck	2	Whinchat	30	Pied Flycatcher	6
Swallow	7	Redstart	30	Duncock	102
House Martin	12	Black Redstart	2	Meadow Pipit	7
Sand Martin	2	Nightingale	6	Tree Pipit	10
Jay	1	Bluetit	1	Grey Wagtail	1
Great Tit	25	Robin	51	Red-backed Shrike	1
Blue Tit	70	Grasshopper Warbler	11	Starling	16
Coal Tit	4	Great Reed Warbler	1	Greenfinch	106
Marsh Tit	1	Reed Warbler	31	Goldfinch	149
Willow Tit	2	Sedge Warbler	41	Linnet	45
Long-tailed Tit	9	Blackcap	374	Redpoll	45
Treecreeper	1	Garden Warbler	192	Bullfinch	52
Wren	74	Whitethroat	123	Chaffinch	19
Mistle Thrush	7	Lesser Whitethroat	170	Yellowhammer	19
Song Thrush	183	Willow Warbler	326	Girl Bunting	2
King Ouzel	5	Chiffchaff	164	Reed Bunting	1
Blackbird	68	Goldcrest	17	House Sparrow	2
Wheatear	5	Firecrest	3		
				Total Ringed	2626

Great Reed Warbler (ringed by the group at Bexhill), Grey Wagtail and Red-backed Shrike were all new to the ringing list for the area.

A. QUINN
B. E. COOPER
M. E. NOLAN

SELECTED LIST OF RECOVERIES REPORTED IN 1969

Key to symbols and terms

(Ring numbers are omitted)

Age	Manner of Recovery
pul.—nestling or chick, <i>not yet flying</i>	v.—caught or trapped and released with ring;
juv.—young, <i>able to fly freely</i>	+—shot or killed by man;
1st W.—bird in its first winter	x—found dead or dying;
fg.—full grown (age uncertain)	()—caught or trapped alive and not released or released but with ring removed;
ad.—adult, at least one year old	/?/—method of recovery unknown.
1 Y.—first year bird in the plumage assumed at its first (post juvenile) moult;	
PJ —post juvenile; free flying bird definitely not juvenile but not certainly in an older age group.	

Sex	Distance
♂—male	The distance is given in miles and directions are approximate.
♀—female	

		Birds ringed in Sussex	
Mute Swan	juv. v	9.4.61 8.9.69	Emsworth, Hants/Sussex border (ABW) Salisbury, Wilts. 38m. WNW.
Turtle Dove	ad. x	26.8.68 10.3.69	Bosham, nr. Chichester (ABW) Ryde, Isle of Wight. 14m. WSW.
Sand Martin	juv. +	8.9.69 18.9.69	Hodcombe, Beachy Head (RHC) Abante Gervana, Senture, Spain
	juv. +	9.8.65 9.5.69	Chichester G.P. (CRG) Packington, Warwickshire
	juv. x	2.9.68 20.5.69	Chichester G.P. (CRG) Coudray, Chateau-Gontier, Mayenne, France
	PJ v	6.9.68 25.8.69	Chichester G.P. (CRG) La Chapelle sur Endre, Loire Atlantique, France
Fieldfare	PJ +	7.12.66 29.10.69	Shoreham-by-Sea (ABW) Vang, Hamar, Hedmark, Norway
Song Thrush	fg. x	20.8.67 23.3.69	Beachy Head (BHRS) Portsmouth, Hants. 55m. W.
	PJ +	21.10.69 20.11.69	Beachy Head (BHRS) Carranza, Viscaya, Spain
Blackbird	ad. ♂ x	11.1.68 21.4.69	Hodcombe, Beachy Head (RHC) Lenham, Kent. 35m. NE.
	PJ ♂ x	27.10.68 1.5.69	Beachy Head (BHRS) Cheratte, Liege, Belgium
	juv. v	25.10.69 30.11.69	Beachy Head (BHRS) Cabo Peñas, Oviedo, Spain
Whinchat	1 Y. +	23.8.69 28.10.69	Hodcombe, Beachy Head (RHC) Jerez de la Frontera, Cadiz, Spain

REPORT ON WADER COUNTS IN 1969

By
M. SHRUBB

The programme of monthly wader counts in Chichester and Pagham Harbours was continued in 1969, using the same methods as in previous years (SBR 1965, 53) and covering the same roosts as in 1968 (SBR 1968, 70). Counts were made in each month except July, when there was no suitably high tide at weekends; two counts were made in June. Coverage of roosts was complete except that no count was made in Pagham Harbour in October and Mr. Hale was unable to continue counts in the Fishbourne area in the last three months. Arrangements have been made to count in this area in 1970 and we wish to thank Mr. Hale for his valuable contribution to the counts. Apart from July, tides throughout the year were satisfactory, but the increasing level of week-end disturbance at Pagham Harbour and the important Pilsey Island roost in Chichester Harbour have probably affected the accuracy of the summer counts.

As in past years a count along the whole county coastline was organised at the end of the year, on Nov. 23rd, covering the same roosts as in 1968 except Rottingdean. Although only one such count has been made in each year they have underlined a fairly obvious fact that, with the exception of about 3 species, Chichester and Pagham Harbours are the only areas along the 100 miles or so of the Sussex coast able to support large wader populations.

In August the British Trust for Ornithology started a national survey of bird populations in estuarine habitats, which continues in 1970, covering not only waders but all species present. Monthly counts are being aimed at from August to April and, considering the size of the enterprise, have been achieved on a wide scale. This is a most important survey in view of the increasing threat of such proposals as barrage schemes to some of the most important wader sites in Britain and it is satisfactory to note that such an excellent start has been made. The Society is naturally cooperating fully with this exercise. Since counts of wildfowl have been made in the main Sussex estuaries at the same time as the wader counts since 1967, this has involved few administrative problems.

The results of the counts in 1969 are set out in Table 1—monthly figures for Chichester and Pagham Harbours; and Table 2—figures for the Sussex coastline on Nov. 23rd. Figures for wildfowl are summarised in the table on page 13 or under specific headings in the Systematic List.

Monthly figures for waders for 5 consecutive years are now available for analysis and a start on this work has been made. It is hoped to publish the results of this analysis in 1971.

Robin	ad. x	13.9.68 27.1.69	Hodcombe, Beachy Head (RHC) Nourthes, Méén, France
Reed Warbler	ad. ♂ v	26.5.68 29.6.69	Chichester G.P. (CRG) Itchen Abbas, Aylesford, Hants. 27m. NW.
Sedge Warbler	1st W. v	5.9.65 5.7.69	Crumbles, Eastbourne (RHC) Hardingstone, Northampton
Blackcap	PJ. ♂ x	3.9.68 10.7.69	Beachy Head (BHRS) Waterlooville, Portsmouth, Hants. 55m. W.
Barred Warbler	PJ. ♀ v	9.10.69 14.10.69	Beachy Head (BHRS) St. Pryne-St. Mesmin, Loiret, France
Whitethroat	1Y. x	13.9.69 18.9.69 Killed by a cat!	Hodcombe, Beachy Head (RHC) Eastbourne, Sussex. 3m. E.
Willow Warbler	PJ. +	8.9.68 10.8.69	Beachy Head (BHRS) Campbelltown, Argyll. 400m. NW.
Goldfinch	ad. +	21.8.69 2.9.69	Beachy Head (BHRS) Irun, Guipuzcoa, Spain
Chaffinch	ad. x	10.10.69 26.10.69	Hodcombe, Beachy Head (RHC) San Sebastian, Spain
Collared Dove	juv. x	6.10.68 20.8.69	Hodcombe, Beachy Head (RHC) Wynington, Rushden, Northants. 112m. NNW.
Reed Warbler	juv. v	7.9.69 29.10.69	Beachy Head (BHRS) Mortagne, Orne, France
Chiffchaff	1Y. ♀ v	28.10.68 28.4.69	Patcham, Brighton (ABW) Capel St. Andrew, Orford, Suffolk. 110m. NE.
Redpoll	PJ. ♂ x	21.1.68 1.5.69	Burgess Hill (JAW) Vannas, Vasterbotten, Sweden
Birds ringed elsewhere and recovered in Sussex			
Collared Dove	juv. v	19.10.68 1.6.69	Le Zwin, Knokke-sur-Mere, West Flanders, Belgium Seaford (PJW)
Reed Warbler	juv. v	10.8.68 3.9.69	Weston Turville, Aylesbury, Bucks. Beachy Head. 80m. SE. (BHRS)
Chiffchaff	PJ. v	25.3.68 23.3.69	Morden, Surrey Hodcombe, Beachy Head. 50m. SSE. (RHC)
Redpoll	PJ. v	5.10.69 30.10.69	Bromfield, Herts. Hodcombe, Beachy Head. 75m. S. (RHC)

TABLE 2
SUSSEX COASTLINE COUNT ON NOVEMBER 23RD, 1969

Species	Chichester Harbour	Pagham Harbour	Climping	Goring/Ferring	Shoreham	Newhaven/Cuckmere	Norman's Bay	Bulverhythe	Pett Level	Rye Harbour/Midtrips	Approx. Totals
Oystercatcher	170	80	7	3	0	0	0	1	0	380	640
Lapwing	1460	?	0	0	0	0	0	1200	0	420	3430
Ringed Plover	390	40	0	15	12	18	0	0	0	10	490
Grey Plover	290	60	0	0	0	0	0	0	0	0	350
Golden Plover	200	0	0	0	0	0	0	0	0	0	200
Turnstone	50	150	2	2	0	0	15	90	0	55	360
Snipe	150	0	0	0	0	4	10	0	10	2	180
Jack Snipe	1	0	0	0	0	0	0	0	0	0	1
Curlew	785	?	0	0	0	28	0	0	0	17	890
Black-tailed Godwit	75	2	0	0	0	0	0	0	60	0	77
Bar-tailed Godwit	155	7	0	0	0	0	0	0	0	0	160
Green Sandpiper	1	0	0	0	0	0	0	0	1	0	2
Redshank	955	40	0	2	30	25	3	0	0	75	1130
Greenshank	3	0	0	0	0	0	0	0	0	0	3
Knot	2	30	0	0	0	0	0	0	0	0	45
Purple Sandpiper	0	0	1	0	0	22	0	23	0	0	46
Dunlin	5000	1750	0	25	350	40	0	5	0	110	7280
Sanderling	185	0	330	15	0	5	0	50	0	0	590
Ruff	70	20	0	0	0	0	0	0	0	0	90

NOTE: ? indicates that the species was present but not counted.

OILED BIRDS IN 1969

As stated in the 1968 Report we intend these notes and tables on oiled birds to be a regular feature of the Report. We feel that publishing such information in detail is of assistance to conservation bodies struggling with this rather intractable problem. Reference to other literature demonstrates its gravity and we would draw readers' attention, for example, to a justifiably acid editorial comment on the subject in *Scottish Birds*, vol. 6 no. 1, concerning recent oiling in Eastern Scotland.

During 1969 there were three reports of oil slicks off the Sussex coast, one in mid-January between Brighton and Bognor, one off the Dungeness/Hastings coast in early July and another there on Aug. 11th. Apart from these oil continued regularly to find its way on to our shores and throughout the year it is very difficult to walk along any of the Sussex beaches without finding small patches and globules adhering to the sand and shingle.

The worst oiling of birds occurred during the early part of 1969—the early months always being the worst period with fairly large wintering populations offshore. Auks represented 63% of the total birds found affected and well over half of all birds were Guillemots; in fact 22% of all the auks recorded during the year were oiled.

The table presents the records we have been able to obtain for 1969. Besides those submitted to the Recorder we have included results of surveys sent to the RSPB/Sea-bird Group Beached Bird Survey scheme. It is too early to use these figures to form any firm conclusions on the structure of sea-bird populations wintering off Sussex but two points seem worth making. It is of interest that no oiled Red-breasted Mergansers were noted, which tends to confirm the impression given by other records that few were wintering. It also seems likely that the coast-line in the extreme east of the county receives a disproportionate number of oiled birds; 58% of the total were found along the 18 mile stretch between Bexhill and Rye. Rye Bay itself contains the largest known concentrations of grebes and scoters wintering off Sussex (see pages 8 & 15) but few oiled birds of these species were found. Coverage of the area was incomplete but the worst period for oiling was late February and early March when the whole coast from Bexhill to the Midtrips was visited. Again the stretches between Newhaven and the Cuckmere and between Ovingdean and Saltdlean were regularly visited but no grebes were found, although a fairly large concentration of Great Crested Grebes was known to be present in the latter area.

Grebes are certainly vulnerable but probably inclined to remain closer inshore than such species as divers and auks. One may speculate, therefore, that either the oil which caused the auk casualties (it should be remembered that what is found is a quite small proportion of the total loss) in the early part of the year was well out at sea or that it was not local at all, and the casualties recorded in Sussex were drifted to our shoreline, perhaps from further west by the prevailing westerly winds. On balance it seems possible that the slick between Brighton and Bognor in January caused most of the damage.

This again is only speculation but it is evident that the effects of a particular oil slick may be observed a considerable distance away from its immediate vicinity and we hope that in 1970 as many members as possible will help supply counts of oiled birds along Sussex beaches. It is vital that a regular county system of recording oiled birds is maintained so that:

- a) we have the full facts for presenting to the Government to show the extent of oiling and oiled birds and
- b) we can maintain liaison in the event of an oiling disaster, where the help of volunteers to count birds and remove them from the beaches is necessary.

At present we have members along certain sections of the coast making regular counts and table 1 shows that the areas most visited produce most birds. This indicates that our figures probably under-record the true situation as only about a third of the coastline was at all regularly visited. Our aim, therefore, is to have counts made at regular intervals along the whole county coastline. Anyone able to help with this vital work should contact Richard Porter, RSPB, The Lodge, Sandy, Bedfordshire, for further details.

R. F. PORTER, M. SHRUBB.

THE CONTINUED SPREAD OF THE COLLARED DOVE IN SUSSEX

By
RICHARD PORTER

Introduction

The spread of the Collared Dove (*Streptopelia decaocto*) across Europe and its rapid colonisation of Britain has been one of the outstanding ornithological events of the century. An account of its spread in Sussex appeared in the Sussex Bird Report 1966 (pages 63-68) and this dealt with the period from 1958, when it was first recorded in the county, to 1966 when it was estimated that the total population was over 1,400 birds. This paper attempts to bring the records up to date.

It is unfortunate, but inevitable, that we tend now to regard the bird as "just another Collared Dove" and, although a survey was carried out by members of the Sussex Ornithological Society in 1968 and 1969, it is probable that there are several areas in the county where the bird has been seen but remained unrecorded. It is hoped, therefore, that by bringing the picture up to date we can (a) document its spread and (b) encourage more records to be submitted.

Account of the spread from 1967-1969

Since the end of 1966, records of Collared Doves have been received from 45 new localities, bringing the total to 107. In most of these localities breeding was proved or birds were at least present during the breeding season. A list of these new localities is given in table 1 and should be regarded as supplementary to the list appearing in the SBR 1966, table 1, page 67. Figure 1 maps these new localities and it can be seen at a glance that the dove is rapidly spreading throughout the interior of the county.

The size of the Sussex population

This is almost impossible to estimate but information from several areas where counts were made (a) up to 1966 and (b) between 1967 and 1969 has made it possible to estimate the order of increase. These counts are set out in table 2. The figures in each column may not be directly comparable because of variation in coverage or because counts were made in one year in summer and in another in the winter. Bearing this in mind, however, the 1969 figures indicate an increase of the order of 380% since the end of 1966.

To obtain this figure the calculations are based on the method adopted by Hudson (*British Birds* 58; 105-139) and Porter (SBR 1966): the totals for each locality have been taken as the largest feeding concentration, where this is not stated then the breeding population has been used and four young per pair allowed in the estimates. If we apply this percentage increase to the estimated population at the end of 1966, which was 1,400, we can say that the minimum present population is in the order of 5,320 birds.

TABLE 1. OILED BIRDS FOUND ALONG THE SUSSEX COAST IN 1969

A. TOTAL NUMBERS AND MONTHS IN WHICH FOUND

Species	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Total
Red-throated Diver	7	1			8
Great Crested Grebe	4				4
Red-necked Grebe	1			2	3
Gannet	3				3
Common Scoter	6	1			7
Eider	1				1
Shelduck	2				2
Oystercatcher	1				1
Turnstone	1		2		3
Purple Sandpiper	1				1
Sanderling	38	5	2	11	56
Gulls	25	5	1	3	29
Razorbill	152	5		5	162
Guillemot	1				1
Little Auk					
TOTAL	242	12	3	23	280

B. DISTRIBUTION OF RECORDS

Species	Chichester Harbour	Pagham/Selsey*	Shoreham/Ferring*	Ovingdean/Saltdean*	Newhaven/Cuckmere*	Beachy Head	Hastings/Bexhill	Rye Bay Area
Red-throated Diver	1	1			2	1	1	2
Great Crested Grebe		2						1
Red-necked Grebe	1							
Gannet		2						
Common Scoter								3
Eider		2					2	3
Shelduck		2						1
Oystercatcher		1						
Turnstone								
Purple Sandpiper					2			
Sanderling		16	1	9	22		1	8
Gulls		4	2	5	5			12
Razorbill								
Little Auk		7	6	5	11	12	110	11
Guillemot								
TOTAL	2	37	9	14	42	13	121	42

NOTE: *indicates that a Beached Bird Survey was made.

Problems associated with the increase

The Collared Dove is a grain eater and a very typical farmyard bird and large flocks may not be a welcome sight to farmers feeding stock or poultry in places accessible to it. If the present increase continues and farmers and poultry owners feel the birds are taking more of their grain than they can afford, then there may be a justifiable case for the bird to be removed to the list of non-protected species. At present it is given full protection under the 1954-67 Protection of Birds Acts though already in Scotland it has been removed to the Second Schedule which allows it to be killed or taken by land owners or persons with their permission.

TABLE I

NEW AREAS IN WHICH COLLARED DOVES HAVE BEEN RECORDED SINCE 1966 AND THE 1969 STATUS WHERE KNOWN

Locality	Year first recorded	Status in 1969 (References are to numbers of birds unless otherwise stated)
Albourne	1968	2 in June
Angmering	1968	Not recorded
Arundel	1967	2 colonies in 1968
Broadbridge Heath	1969	One in January
Chelwood	1969	One pair present
Coldwaltham	1969	One pair bred
Copthorne	1968	At least 2 pairs
Cowfold	1969	One bird in 1969
Crawley	1967	At least 3 pairs
Crowhurst, Nr. Battle	1969	One pair present
Crowborough	1967	Breeding
Emsworth	1967	Not recorded in 1969
Findon	1967	Present during breeding season
Five Oaks (Nr. Billingshurst)	1967	4 pairs in 1967
Furners Green	1967	Only recorded in June, 1967
Hailsham	1969	Common
Hampden Park (Eastbourne)	1969	Several pairs during breeding season
Heathfield	1968	Present in February
Haywards Heath	1968	1 pair present
High-Over, Alfriston	1968	4 during 1968
High Salvington	1969	Up to 20+ present
Horsted Keynes	1967	2 pairs at least present
Hurstpierpoint	1967	Only recorded in 1967
Itchenor	1967	Nest, up to 30 wintering
Lindfield	1969	Several in breeding season
Litlington	1969	Only record was in 1968
Mayfield	1968	In 1968 at least 10 pairs bred. Counts in winter indicated at least 30 birds present.
Midhurst and Eisebourne	1967	Present in breeding season
Nepcote Village	1969	1 pair in 1968
Nutley	1968	Up to 12 in July
Nyetimber	1969	Up to 14 recorded (October)
Ovingdean	1968	Up to 3 recorded
Pagham	1967	1 in April
Parham Park	1969	Breeding
Peacehaven	1969	1 in August
Rusper	1967	At least 6 pairs nesting in Rye area, pairs present in areas around
Rye	1969	Only recorded in 1967
Seaynes Hill	1967	1 in June
Storrington	1967	Bred (no count made)
Southwick	1967	Present in November
Thorney	1969	Common
Turnbridge Wells area	1969	Up to 2 present in breeding season
Stinfold	1969	Only pair present
Uckfield	1969	2 only present in 1968
West Dean (Friston Forest)	1968	Present in breeding season
Woodingdean	1968	Present in breeding season

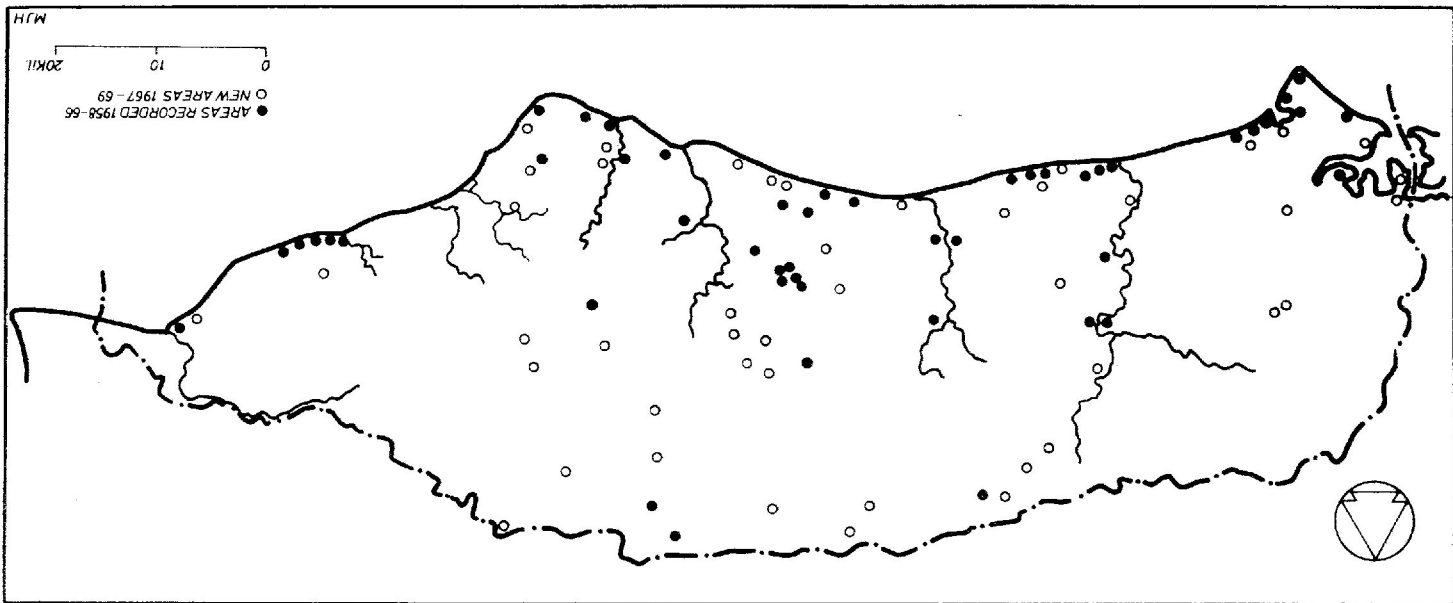


FIGURE 1. THE SPREAD OF THE COLLARED DOVE IN SUSSEX FROM 1967-1969

Should the same situation arise in England and Wales it would be a pity but farmers to put up a case against it, would ornithologists be able to disclaim the allegations? Very little work has been carried out on the feeding ecology of the bird and work in this field would be extremely useful. There have, for example, been reports from the Horsham area that the bird is turning its taste to green vegetables.

TABLE 2
LOCALITIES IN SUSSEX WHERE COUNTS OF COLLARED DOVES WERE MADE
(a) UP TO 1966 AND (b) BETWEEN 1967-1969

Locality	(a) Counts made up to 1966	(b) Counts made between 1967-1969
Bexhill area	At least 300 in both summer and winter	1967—c.360 pairs in 8 sq. miles
Burgess Hill	One pair in breeding season	1967/68—50 in winter
Cadborough	Two in breeding season	1967—13 in breeding season
Church Norton	Two pairs	1969—Flock of 70 in winter
Ditchling	30 in December	1968—50 in December
Eastbourne	Breeding (c.30 in 1965)	1969—Flocks of up to 50 during year
East Grinstead	One recorded in June	1969—Up to 20 in breeding season
Exceat	Only recorded in 1962	1969—30 in winter
Ichenor	Not recorded	1967/68—up to 200 in winter
Lymminster	One in autumn	1967—up to 20 in September
Midhurst	Not recorded	1968—Flock of 58 in October
Seaford	30 in 1965	1969—80+ in May-July
Selsey	22-26 pairs bred	1969—40 pairs
Shoreham	One in September	1968—Flocks of up to 75 in November
St. Leonards	c.250 in winter	1967—c.250 in winter
The Witterings	150 in autumn	1968—winter flocks of up to 200
Winchelsea	10 in winter	1969—50 in winter
Westmeston	One pair	1967-69, 70 during winter

Future records

We would be grateful if readers could study the list of localities in which collared doves have been recorded, both in this article and the 1966 S.B.R. (page 67) and let the recorder know any new localities in which the bird has appeared.

Counts of winter flocks are particularly requested from all areas and also breeding season counts made in a defined area.

Acknowledgements

I would like to thank S. W. M. Hughes for extracting the observations for this paper from the Society's files and M. Shrubbs for his help and useful comments. M. J. Helps drew the figure.

THE DECLINE OF THE WOODLARK AS A SUSSEX BREEDING SPECIES

By
S. W. M. HUGHES

The breeding status of the Woodlark (*Lullula arborea*) in the British Isles has shown marked fluctuations over the last century. Parslow (1967) has summarised the relatively extensive information available on this species. His work suggests that the breeding population was at a low ebb in the 1880s, after which it gradually increased in southern England and Wales. This increase was followed by an expansion of breeding range in the 1920s and a further increase in population in the 1940s. The trend continued and the population reached a peak about 1951. By 1954 a definite decrease was detected and this was particularly evident after 1960. The severe winter of 1962/3 probably hastened the decline with the result that the Woodlark was almost totally lost as a breeding species in many counties.

The history of the Woodlark in Sussex was reviewed in considerable detail by Walpole-Bond in 1938. His account examined the opinions of eight naturalists covering the period 1850 to 1905 and gave details of his own observations up to the late 1930s. He concluded that the early assessments of the status of this species varied to such an extent that their value was dubious. However, in the light of Parslow's recent work it seems possible that Walpole-Bond may have been too critical; indeed the population fluctuations suggested by the local literature are not totally incompatible with the national evidence.

None of the early accounts gave more than the briefest details of breeding localities within the county; instead there are the familiar references to presence or absence, at different times, in the Weald and impressions that the species was more numerous in West Sussex than East Sussex. Although Walpole-Bond deliberately suppressed details of breeding localities, he did nevertheless provide the first indication of the size of the breeding population. He knew of the species in 15 widely scattered localities in the county and furthermore he inferred that none of these localities held more than a few pairs. Thus in the late thirties it is unlikely that the Woodlark breeding population was much in excess of 50 pairs.

The detailed information available for the immediate post war years is scant, but it is fortunate that the small number of observers involved provided continuity in their records, for a few areas, over a period of 2-3 years. Thus during 1947-1949 the records suggest a definite increase in the Sussex breeding population, which is in line with the national trend at that time. In the forest areas of north central Sussex there were at least 14 breeding pairs in 1948 and this figure rose to 19 in the following year. The species was also known to breed in the wooded downland areas in the west of the county and along the north escarpment of the Downs between Washington and Amberley. More surprisingly there was evidence of an interesting population on top of the Downs in the Chanctonbury-Cissbury-Findon area, which included birds nesting in cereal crops, and also on Wepham Down. Unfortunately there is no numerical information for this particular population. During the same period, there were records of Woodlarks in the extreme north west of the county but rather surprisingly there was no mention of the species on the West Sussex commons. Reports from the east of the county were less informative but the Woodlark was known to have been present in Ashdown Forest and to be established at Arling-

ton. There were several records for the woodlands around Cooden, Battle, Hastings and Rye and there was some evidence of an increase in population in these areas in the early fifties.

As might be expected observer coverage of inland Sussex in the immediate post war period was poor and thus it is only possible to make a very rough estimate as to the population for the county at that time. The records for the localities mentioned above suggest they held a population of the order of 50 pairs. But, in view of the area of suitable terrain which apparently was not visited, the total county population was very probably larger, perhaps double this figure; a more realistic estimate, therefore, might be c.50-100 pairs.

The county files for the late fifties deal mainly with the migratory movements and there is an almost total lack of breeding information. By 1961, however, a few observers with detailed local knowledge detected a decline, and breeding information, albeit limited, was forthcoming once again. Further evidence, recently collected, confirms that the main decline took place in the late fifties and the species had actually disappeared from several of its regular haunts by 1960 and 1961 and the severe winter of 1962-3 eliminated it from others.

The information in the Sussex Ornithological Society's files for the period 1962-1966 is summarised in Table 1a. The figures relate to the observations of only 21 observers, however the localities concerned are well scattered and cover most of the central and western areas of the county. Thus although not definitive in terms of population size, the figures provide adequate evidence of a declining population.

The figures for 1966 were so alarming that the Records Committee instituted a breeding survey in an endeavour to confirm the situation. This survey was commenced in 1967 and continued in 1968 and 1969. All members of the Sussex Ornithological Society were requested to report breeding pairs, or any evidence of suspected breeding e.g. the continuous presence of singing males. Breeding surveys of Tree Pipit, Nightjar, and Redstart, which frequently share the Woodlark's habitat, were in progress during the same period and the records received for these species indicated that 52 members were actively engaged in survey work and that over the three year period at least 80% of the entire county was covered with varying degrees of thoroughness. Observer coverage was poorest in the extreme east of the county and particularly so in the woodlands to the north of Bexhill, Battle and Brede. This was unfortunate since the species is known to have been present in these areas in former years.

The results of the 1967-1969 survey are given in Table 1b. It is regrettable that the breeding population of the Woodlark has now declined, to such an extent, that it has been considered necessary to suppress actual breeding localities. (Full details have been lodged in the Society files for future reference). Over the three year period breeding pairs were found in only five localities and singing males were found in another eight. Only in one locality was breeding proved or suspected on three successive years. Inspection of the tabulated results, particularly for 1969, might suggest that the species is still more numerous in West Sussex than East Sussex. It would however be incorrect to draw this conclusion since important areas of East Sussex were not visited and the total figures are too low to allow meaningful comparisons of this kind.

Thus despite the inherent difficulties and inaccuracies associated with historical comparisons and the admitted shortcomings of the latest survey there can be no doubt that there has been a catastrophic decline in the breeding population of the Woodlark in Sussex during the last 15 to 20 years. The extent of the decline cannot be assessed accurately but may be as much as 90-95%.

TABLE 1a. BREEDING SEASON RECORDS OF WOODLARK IN SUSSEX 1962-1966

Year	West Sussex				East Sussex				ENTIRE COUNTY	
	No. of Localities	Number of breeding pairs	Number of singing males	No. of Localities	Number of breeding pairs	Number of singing males	Number of Localities	Total occupied territories		
1962	7	9	4	3	7	0	10	20	8	4
1963	5	3	2	2	1	2	7	8	4	5
1964	3	3	0	1	0	1	4	4	4	7
1965	4	5	0	0	0	0	4	5	4	6
1966	2	2	0	3	2	1	5	5	4	7

TABLE 1b. BREEDING SEASON RECORDS OF WOODLARK IN SUSSEX 1967-1969

Year	West Sussex				East Sussex				ENTIRE COUNTY	
	No. of Localities	Number of breeding pairs	Number of singing males	No. of Localities	Number of breeding pairs	Number of singing males	Number of Localities	Total occupied territories		
1967	2	3	0	4	1	3	6	7	4	7
1968	1	1	2	4	0	4	5	7	4	7
1969	4	4	2	0	0	0	4	6	4	7

Acknowledgements

I wish to thank all the members of the Sussex Ornithological Society who have contributed the records on which this paper is based.

Summary

All available historical information on the breeding status of the Woodlark in Sussex is summarised and compared with the known fluctuations of this species on a national scale. Estimates are given for the Sussex population in the late 1930s (c.50 pairs) and the immediate post war years (c.50-100 pairs). The results of the Sussex breeding survey during 1967-1969 (c.10 pairs annually) confirm that the species has suffered a decline of the order of 90%-95% in the last 15-20 years. Figures are given to illustrate the decline in the years 1962-1966 but the major decline had already occurred in the late 1950s.

References

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A SURVEY OF THE GREY WAGTAIL IN SUSSEX

By

W. MERRITT, R. R. GREENHALF and P. F. BONHAM

INTRODUCTION

Early in 1967 we were surprised to discover about 10 pairs of Grey Wagtails (*Motacilla cinerea*) apparently occupying breeding territories along part of the River Ouse. None of these territories were mentioned in the most recent *Sussex Bird Report* (1965) in which less than ten pairs were reported to have bred. Even fewer breeding records were published in the *Sussex Bird Reports* for 1964 and 1963: two and one respectively. Despite the drastic declines of many resident bird species caused by the 1962/63 winter (Dobinson and Richards 1964), it seemed unlikely that the published figures were a true indication of the breeding status of this species in the county.

During the breeding season of 1967 we conducted a survey of about 500 sq. km. of mid-Sussex, exploring the rivers and streams for breeding Grey Wagtails. Knowing the species' preference for certain types of nest-site, particular attention was paid to such features as the outfalls of ponds and lakes, mills, bridges, weirs and locks. Forty-one occupied sites containing 31 definite pairs and ten single birds were found, breeding being proved with 16 pairs which reared 38 young (Merritt *et al* 1967).

The breeding survey was repeated in 1968 and 1969 and extended to cover the whole county. Observations of the winter population were also made in the winters of 1968/69 and 1969/70. Additional information was taken from the files of the Sussex Ornithological Society. Annual results are summarised in the *Sussex Bird Reports* for 1968 and 1969.

BREEDING STATUS

Coverage

Sussex is about 130 km. from east to west and 30-40 km. from north to south, with an area of approximately 3,800 sq. km. (950,000 acres). For the purposes of this paper, we have defined "potential breeding habitat" as all the 1 km. squares on the 1-inch Ordnance Survey Maps containing a non-tidal river, stream or lake. Thus the total area within which potential breeding habitat exists is 2,655 sq. km. (70% of the whole). Most of the remainder is accounted for by the chalk South Downs. Of this "potential breeding habitat," 1,390 sq. km. have been thoroughly searched and 923 sq. km. sparsely searched. Only 342 sq. km. (13%) have not been searched, most of which looks unsuitable.

Our observations show that the Grey Wagtail occupies its breeding territories from mid-March to mid-August. The criteria for dividing records from this period into proved, probable or possible breeding are those used for the British Trust for Ornithology's Atlas project, except that possible breeding is supported by a total of not less than two separate records of a single bird during the survey period. With this proviso, any proved, probable or possible breeding record constitutes evidence of an occupied territory, which is taken as the basic unit of breeding population. Isolated records of single birds have been shown in figure 1, however, as our experience suggests that many would reveal hitherto undiscovered occupied territories.

Number of Territories

The distribution and total number of occupied territories found during 1967 to 1969 is shown for each 1 km. square of the National Grid in figure 1. Out of a total of 193 territories, 83 were reported in two or three years and 110 only once; 73 of these were discovered in 1969, when much new terrain was searched. No marked increase or decrease in numbers was noted in those areas covered in all three years, and it is assumed that the majority of the 110 territories reported only once were, in fact, occupied throughout the survey period. Breeding was proved at least once in 110 territories, was probable at least once in 30 but only possible at the remaining 53 sites. Isolated records of single birds were obtained from a further 33 localities, which are included in figure 1 to give a more complete picture of distribution.

Grey Wagtails are clearly widely distributed and quite numerous within their very limited breeding habitat. Birds were present in all but seven 10km. squares (the 10km. grid is indicated in the margin of the figure), six of which are coastal with very little suitable habitat. Unfortunately uneven coverage of such a large area was unavoidable; in particular the extreme east of the county was poorly surveyed. The variations in abundance shown in figure 1 are, therefore, to some extent dependent on the coverage.

Breeding Density

Table 1 gives the breeding densities for the various Sussex river systems during the survey period. Within the watersheds of the larger rivers, certain distinct concentrations of occupied territories were apparent; to give a more representative picture, therefore, the larger river systems have been subdivided, into regions numbered 1 to 19 in the Table.

We have calculated breeding density as pairs per 100 sq. km. (25,000 acres) of "potential breeding habitat". Although this method applied to a species with such a specialised breeding habitat is open to criticism, it provides an easily applied basis for comparisons with any future population studies, whereas the

Table I. THE BREEDING DENSITY OF GREY WAGTAILS IN SUSSEX, 1967-69.

River System	Region	Area of potential habitat* (100 sq. km.)	Number of occupied territories	Density (pairs per 100 sq. km.)	
Arun	1 West Rother	2.03	40	20	
	2 below Wisborough Green	1.46	11	7.5	
	3 above Wisborough Green	2.30	13	5.7	
	4 Great Beiley tributaries	1.58	10	6.3	
Adur	5 remainder	1.88	3	1.6	
	6 main river	1.97	28	14	
Medway	7 Teise	0.55	2	3.6	
	8 above Isfield	2.93	45	15	
Ouse	9 below Isfield	1.83	5	2.7	
	10 above Robertbridge	1.82	12	6.6	
East Rother	11 below Robertbridge including rivers Brede & Tillingham	2.81	1	0.4	
	12 all	1.05	3	2.9	
	13 all	0.82	5	6.1	
	14 old sea	1.06	3	4.9	
	15 remainder	0.61	7	5.7	
	Asten	0.53	3	5.7	
	Chichester	1.32	1	5.3	
	Wey	—	1	—	
	Eden	—	1	—	
	TOTALS		26.55	193	7.3

*Note: Potential breeding habitat is defined on page 69.

Table II. NESTING LOCALITIES AND NEST SITES OF GREY WAGTAILS IN SUSSEX, 1967-69

Nest location	Number	Nest site	Number
Outfalls of ponds or lakes	77	In a hole or crevice	54
Bridges	41	On a ledge	55
Weirs	28	In ivy	8
Boathouses	6	Against banks	16
Pumping stations	3	In tree roots	7
Natural	3	In drainpipe	9
		In or on a mill wheel	2

Table III. BREEDING DENSITIES OF GREY WAGTAILS ON THE PRINCIPAL GEOLOGICAL STRATA OCCURRING IN SUSSEX, 1967-69

Area	Surface geological strata	Area of potential habitat (100 sq. km.)	Number of occupied territories	Density (pairs per 100 sq. km.)
A	Lower Greensand, Gault, Upper Greensand	1.20	37	30.8
B	Ashdown Sandstone	1.60	29	18.1
C	Tunbridge Wells Sandstone	1.87	32	17.1
D	Brickearth valley gravel	0.79	7	8.9
E	Weald Clay	2.13	8	3.8

only alternative (pairs per km. of river) is almost impossible to calculate sufficiently accurately.

There are wide differences in the breeding densities between regions which are not adequately explained by the known variations in coverage; for example regions 1, 3, 4, 6, 8, 9, 10 and 13, which were all well searched, had breeding densities ranging between 2.7 and 20 pairs per 100 sq. km.

The main factor affecting breeding density is the abundance of suitable nesting sites. Table II gives the locations and sites of the Grey Wagtail nests found during the survey. Not all Sussex lakes, bridges and weirs possess breeding Grey Wagtails; our experience suggests that there are two requirements before a location is occupied. Firstly it must possess suitable holes, ledges, banks, drainpipes, etc. Secondly, and more important, it must possess a waterfall—78% of nest sites were adjacent to waterfalls. These need not be waterfalls in the accepted sense of the word; most waterfalls in Sussex are less than five feet high. The reason for this requirement are uncertain. Possibly natural selection favours those Grey Wagtails which nest over waterfalls because they are safer from ground predators, such as weasels, stoats, foxes, rats and Man.

Figure II shows the principal geological strata occurring in Sussex (after Gallois 1965). For clarity the subdivision of the area marked Greensand into Upper and Lower Greensand and Gault, and of the area marked Sandstones into Ashdown and Tunbridge Wells Sandstone and Wadhurst Clay (which is a type of shale containing sandstone) has not been shown. Comparison of figure II with figure I shows very clearly that Grey Wagtails are mainly distributed on sand, sandstone or gravel strata. Typically the streams of these areas are shallow and relatively fast moving. Such streams have a greater number of waterfalls than the deeper, slower moving streams of the clay and alluvial areas, and they were found more suitable for the construction of weirs, hammer ponds and mill ponds which cause artificial waterfalls. Bridges over these shallow streams also cause a small waterfall more frequently than those over deeper streams. Thus the surface geological strata governs the abundance of suitable nest sites, but it is also very likely that the species has a distinct preference for the shallower, faster streams of the sands, sandstones and gravels, with their stony beds, in the first place.

Table III gives the breeding densities of Grey Wagtails found in the main types of geological strata; areas A to E are the same as areas A to E shown on figure II, and are the areas most thoroughly covered during the survey. The streams and rivers in areas A (greensands and gault) and C (Tunbridge Wells sandstone) are shallow and relatively fast flowing. There are many bridges, weirs and mills causing waterfalls, leading to a high breeding density. The high density in area B (Ashdown sandstone) arises from a combination of low-grade iron ore deposits and the presence of numerous steep-sided valleys, or ghylls. In the past these ghylls were dammed to form hammer ponds, which were used as a source of power in the extraction methods of the old Wealden iron industry (Straker 1969). The area therefore possesses an abundance of ponds and lakes with artificial waterfalls at their outlets. In area E (Weald clay) the streams are deep and slow moving, with few bridges causing waterfalls, and very few weirs, or suitable lakes or ponds. Area D (valley gravels) lacks a main river and thus the numerous bridges and weirs of areas A and C. However, unlike area E, it contains a number of clear, shallow, fast running gravel streams; together with the gravel workings in the area many nesting sites are available at places such as mill ponds, water cress beds and certain gravel pits.

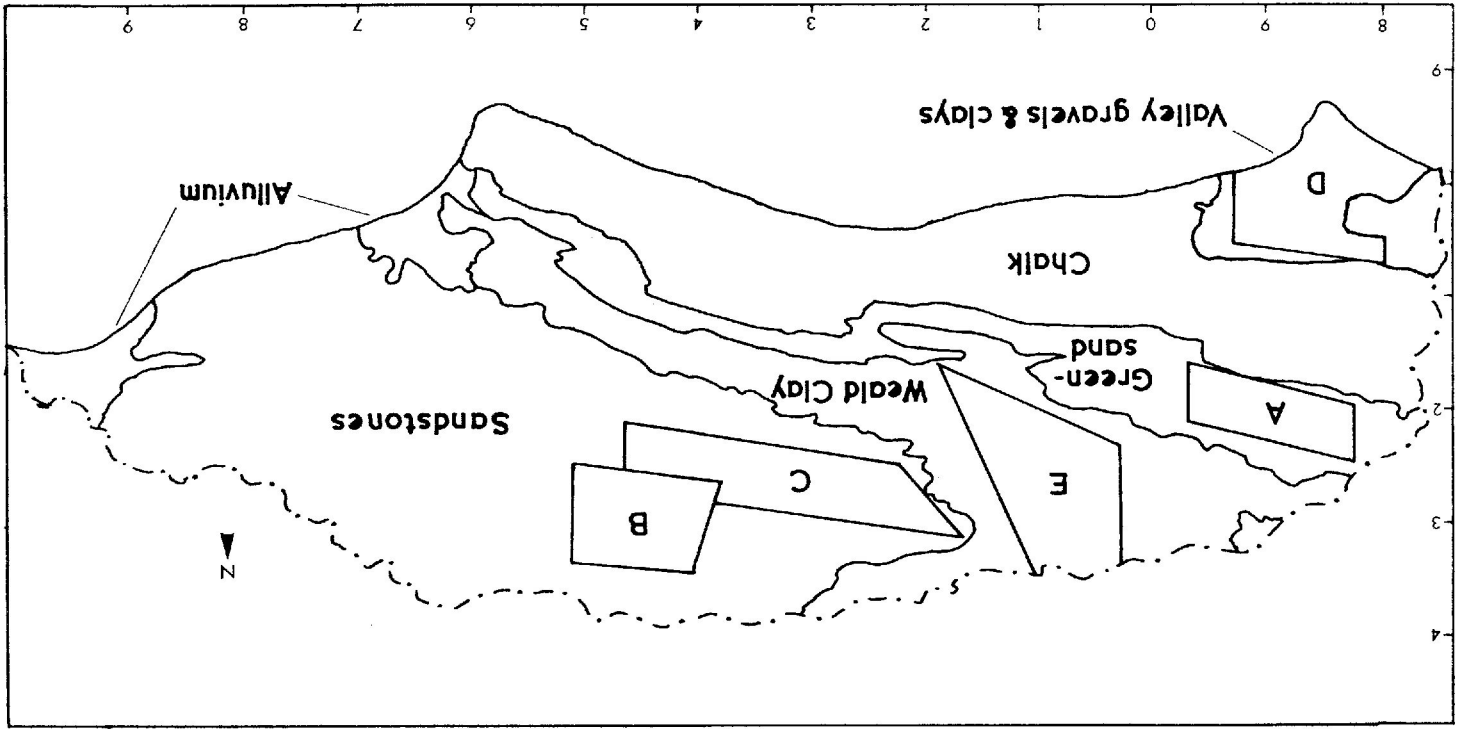


FIGURE II. THE PRINCIPAL GEOLOGICAL STRATA OCCURRING IN SUSSEX AND THE AREAS MOST THOROUGHLY COVERED DURING THE SURVEY, 1967 TO 1969

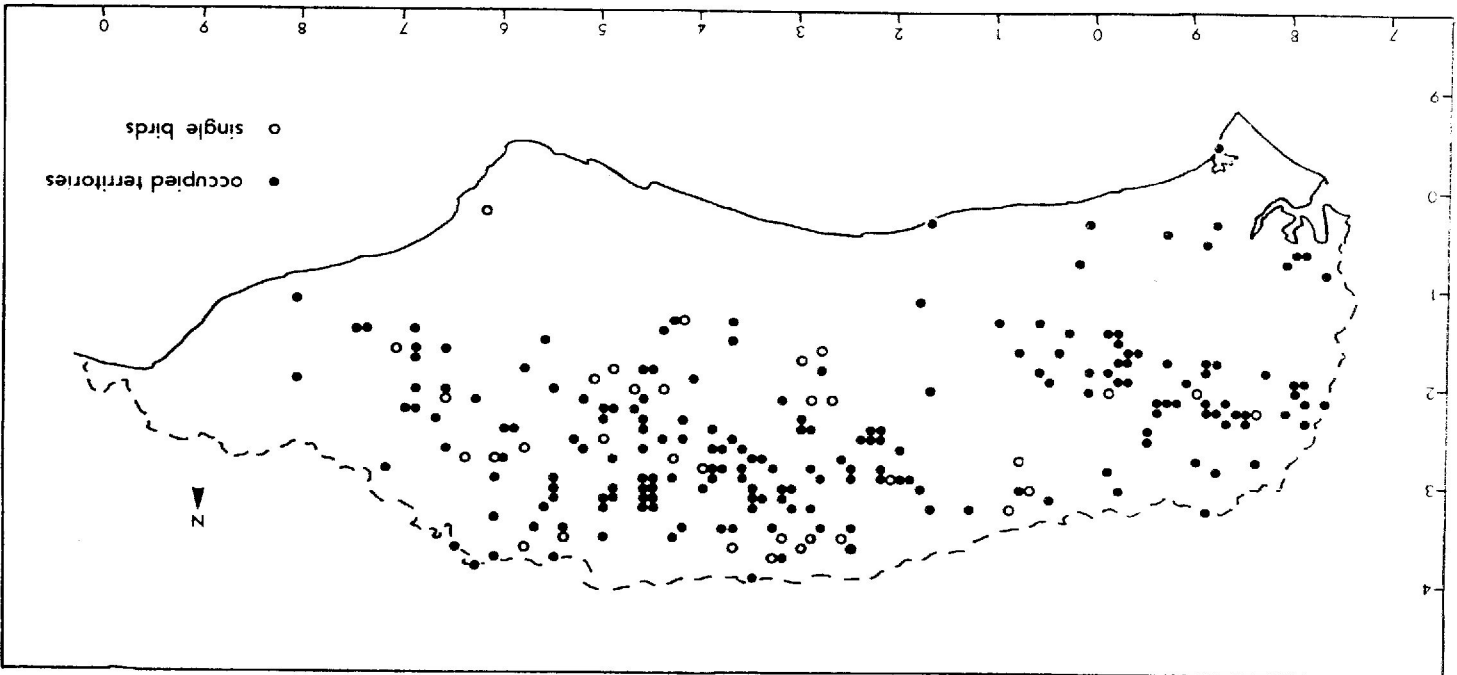


FIGURE I. THE DISTRIBUTION AND TOTAL NUMBER OF OCCUPIED TERRITORIES OF BREEDING GREY WAGTAILS IN SUSSEX 1967 TO 1969

The different breeding densities in regions 1, 3, 4, 6, 8, 9, 10 and 13 (Table 1), which were all equally well covered, can be explained in terms of variation in the surface geological strata. The highest density was found in region 1, the southern half of which comprises area A of Table III. Regions 3 and 4 are predominantly Weald clay, with about 10% Tunbridge Wells or Ashdown sandstone; regions 6 and 8 are mixed Ashdown and Tunbridge Wells sandstone, with some Wadhurst clay. Region 9 is all Weald clay. Regions 10 and 13 are mainly Wadhurst clay, with smaller amounts of the two sandstones.

The surface geological strata of the remaining regions in Table 1, where coverage was less complete are as follows: 2, Weald clay with some Lower Greensand; 5, Weald clay; 7, 11, 12, 15 and 16, a mixture of Wadhurst clay and the two sandstones.

Discussion

The most recent figures on the distribution and population of Grey Wagtails in Sussex are those of Walpole-Bond (1938). He listed 42 localities in which breeding had occurred during 1906-38. Unfortunately we cannot make a direct comparison with his figures because he does not give the precise locations of his breeding sites nor the number of pairs breeding at each locality. In order to make some comparison we have assumed that a site found by us at a locality named by Walpole-Bond is in fact one of his sites. On this basis, of the 42 localities mentioned by Walpole-Bond breeding was proved at least once in the present survey period at 24, considered probable at 4 and suspected at a further 7. Birds were seen at a further 5 sites which fell outside our definition of occupied territories: these were in Billingshurst, Stopham, Uckfield, Greatham and Three Bridges. Further investigation of these, particularly of the first three, would probably reveal an occupied territory at each one, and thus the already high proportion of Walpole-Bond's localities occupied in 1967-69 (83%) would increase to 95%. The small number remaining apparently unoccupied might well be due to habitat destruction, especially at Three Bridges. Thus the Grey Wagtail is apparently a traditional nester; provided there is no habitat destruction it will nest year after year at the same site, or at least in the same locality.

Walpole-Bond estimated the safe average annual breeding population as 60-70 pairs. Our survey gives a figure of 193 pairs. Unfortunately again we cannot make a direct comparison because he gave no indication of the extent of coverage. It is interesting to note, however, that Parslow (1967) reported a marked increase during this century for the whole of southern England. Further more, Voous (1960) also stated that the species is spreading and increasing throughout Europe, and it is possible that these changes are due to the general amelioration of the climate in north-west Europe over the last forty years.

Reference to the Bird Reports of other counties in South-east and Eastern England suggests that very few pairs breed annually and the number of breeding season records often fluctuates rapidly from year to year, even when there are no intervening cold winters. For example 12, 4, 7 and 22 such records appeared in the Surrey Bird Reports for the four years 1957 to 1960. Many similar conflicting statements of its breeding status are often found; compare Hayward (1947) and Sage (1959) for Hertfordshire, or the Kent Bird Reports for 1959 to 1962, with reference to the Dover area.

The main reason for these confusing reports is probably irregular coverage of possible breeding sites through their inaccessibility—many Sussex sites are very difficult to reach and were also unrecorded before this systematic survey.

In order to compare the breeding density in each county we have used our evidence that the Grey Wagtail is a traditional nester and barring severe weather, disturbance or habitat destruction, will nest year after year in the same locality. Two periods have been considered: 1934 to 1968 and 1963 to 1968 (i.e. since the last severe winter). Table 4 shows the breeding densities for some Eastern and South-eastern counties; the counties used are those in existence before the creation of the Greater London Council. A site on a river on a county boundary has been counted as half for each county. The Sussex figures are derived from all sources except our survey, and are thus comparable.

Table IV. BREEDING DENSITIES OF GREY WAGTAILS IN EAST AND SOUTH-EAST ENGLAND 1934-68 AND 1963-68

County	Total area (sq. km.)	Area of potential habitat (100 sq. km.)	Sites 1934-68	Sites 1963-68	Density 1934-68 (pairs per 100 sq. km.)	Density 1963-68 (pairs per 100 sq. km.)
Sussex	3774	26.55	c.80	c.40	3.0	1.5
Kent	3950	15.35	c.75	16	4.9	1.0
Surrey	1869	11.90	c.70	20	5.9	1.7
London	303	(1.20)	5	0	(4.2)	—
Midsex	602	3.69	17	5	4.6	1.4
Essex	3958	(31.50)	c.25	1	(0.8)	—
Herts	1638	8.43	c.50	14	5.9	1.7

Note: Areas of potential habitat in brackets have been estimated.

Considering the approximations involved, the differences between the figures for breeding densities are not very significant; whilst the recent breeding population of Sussex may be high compared to the other counties, the breeding density is not. The higher density in Surrey may be due to the large areas of greensand, while the low density in Essex might well be attributable to the surface strata, which is almost entirely clay.

Since we have found that the breeding population of Sussex is at least 190 pairs, with a density of 7.3 pairs per 100 sq. km. of potential habitat, it is probable that similar surveys in the other counties would similarly increase their known breeding densities. In particular the Lower greensand within the triangle Dorking-Farnham-Petersfield and the arc Hythe-Ashford-Maidstone-Sevenoaks-Reigate might hold considerable populations of Grey Wagtails. Other areas which might do so are the strip of Upper greensand from Farnham to Petersfield and the sandstone from East Grinstead to the east-south-east of Tunbridge Wells, which lies in Kent.

WINTER STATUS

Methods and Coverage

The winter season was taken as the period November to February inclusive; October and the first half of March were excluded since birds may be on passage, especially in the former month. During the winter the Grey Wagtail is known to be widespread, occurring on streams, ponds, sewage farms and water courses, or on the coast, and occasionally in such places as farmyards. Since it would have been impossible to cover all potential wintering sites, we confined our survey during the winters of 1968/69 and 1969/70 to a systematic search of the one habitat that could feasibly be covered—the sewage farms of Sussex. In all, 128 sewage farms were visited, the majority only once. Additional records were taken from the S.O.S. files; most of these were from the coast or from ponds and lakes inland.

Results

Figure III shows the distribution of the 147 winter sites found during the survey period; 111 were at sewage farms, 14 at ponds, lakes, gravel pits and reservoirs, 11 on streams, rivers and marshes, 4 at cress beds, 4 on manure heaps, 2 at water pumping stations and one at a rubbish tip.

If the maximum number seen at each site is added, a total of 239 birds is obtained. This is certainly less than the true wintering population, however, particularly at sewage farms. With such a large area to be covered, only half an hour could be spent at most sites; thus a certain element of luck was involved. Usually only one bird was seen, but there was an increasing tendency for two to be found as the winter progressed. At those sewage farms regularly visited however, at least two were always found, and sometimes as many as eight; frequent visits to all such sites would probably reveal at least two or three birds at each one.

Discussion

Sewage farms obviously provide a major winter habitat for the species. All the sewage farms in Sussex are of modern design, and about 50 have been built in the last five years. They include one or more filtration tanks with moving sprinklers, usually with settling beds of some kind alongside. They range in size from that serving Chichester (population 20,000) to extremely small ones for a housing estate in a small village (population perhaps 300), but size does not seem to affect their suitability for Grey Wagtails. The birds feed on the abundant insect life, animal and vegetable matter on the surface of the sludge; in mild weather they often resort to a stream nearby, but during periods of hard frost they usually stay on the filtration tanks all day with large numbers of Pied Wagtails (*M. alba*) and other species. A comparison of figure II with figures I and II shows that distribution in winter is more scattered than in the breeding season and follows the geological strata less closely. The figure is, in fact, virtually a map of sewage farms.

Before our survey no numerical data were available on the wintering population in Sussex. Walpole-Bond (1938) merely stated "it is not really uncommon throughout the winter, commoner now than in summer", giving no details of methods, coverage or abundance. We have found that the breeding population is similar to, possibly exceeding, the wintering population, but the true situation in Walpole-Bond's time is unknown and no comparisons can be made.

What is the origin of these wintering birds? They could be the breeding population (which would then be essentially sedentary) or they could be wholly or partly different birds. We feel that our findings concerning the proximity of nesting and wintering sites (Table 5) support the first idea: 84% of all breeding sites are less than 3km. from the nearest wintering site. The most obvious explanation is that the breeding birds winter nearby. Fewer wintering sites have been found than breeding territories. But, although it is very likely that some wintering sites have been overlooked, this disparity may only indicate that some suitable sites attract birds from several nearby breeding territories in winter.

On many occasions in the breeding season we have watched adults collecting food at sewage farms and flying off towards known nesting sites, and family parties have also been seen at sewage farms in July and August. If the birds find these a suitable source of food in summer, it is even more likely that they will do so in winter, particularly in hard weather. We have seen juveniles in all

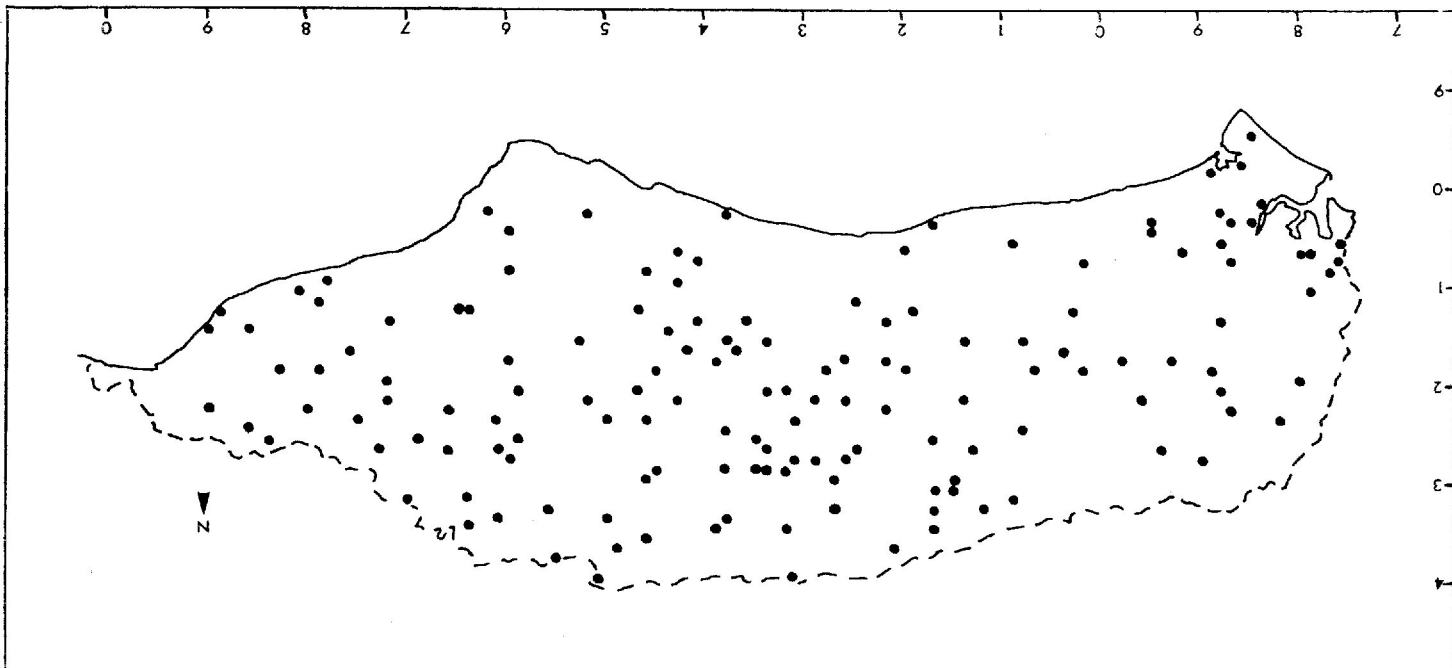


FIGURE III. THE DISTRIBUTION AND TOTAL NUMBER OF WINTERING SITES FOUND OCCUPIED BY GREY WAGTAILS IN SUSSEX, 1967 TO 1969

Table V. DISTANCES BETWEEN ADJACENT OCCUPIED TERRITORIES AND WINTERING SITES OF GREY WAGTAILS IN SUSSEX, 1967-69

Occupied Territories	Distance from nearest wintering site (km.)	Wintering sites	Distance from nearest occupied territory (km.)
63	less than 1	48	less than 1
46	1-2	30	1-2
54	2-3	24	2-3
25	3-4	16	3-4
3	4-5	7	4-5
2	5-6	6	5-6
0	6-7	4	6-7
0	7-8	3	7-8
0	8-9	3	8-9
0	9-10	2	9-10
0	10-11	0	10-11
0	11-12	2	11-12
0	12-13	0	12-13
0	13-14	2	13-14
0	more than 14	0	more than 14

stages of plumage throughout late summer and autumn at, or near, sewage farms, which suggests that they are locally bred, and the proportion of adults to young at this season strongly indicates that the population consists of family parties. We believe that most of the Grey Wagtails breeding in Sussex are therefore sedentary, making only small local movements from breeding sites to nearby wintering sites. There are 30 breeding sites more than 3km. from a known winter site (see Table 5). Nineteen are within 3km. of a sewage farm, and if our conclusion that Sussex Grey Wagtails are sedentary is correct, then observations should reveal wintering birds at these places.

A southerly movement in autumn, followed by a predominantly westerly movement along the south coast, of some Grey Wagtails breeding further north in Britain has been established by Sharrock (1969). Very little is known of the wintering grounds of these migrants; there is only one foreign recovery (in France) of a Grey Wagtail ringed in the breeding season in Britain. Of the 45 wintering sites over 3km. from a known breeding site in Table V, 22 are within 3km. of potential breeding habitat, and further work would probably reveal breeding sites in these areas. Of the remainder, 15 are on the coast, and 8 in the flood-plains of the lower reaches of the rivers Ouse (4), Adur (3) and Cuckmere (1). It seems reasonable to suppose that these birds and those wintering on the coast might be migrants from much further north. But alternatively they could simply be local birds moving further than we suspect, or a mixture of local and migrant populations.

One of the ringing recoveries listed by Sharrock (1969) was of a nestling ringed at Cuddesdon, Oxfordshire, on 7th July, 1958 and controlled at Wartling, Sussex (85 miles SE.) on 26th Sept. 1959. This seems to indicate overland migration, which raises the question of whether some of the birds wintering far inland in Sussex are from further north. Assuming an essentially sedentary Sussex population, such winter visitors are unlikely to be very numerous, since the summer and winter populations are approximately equal.

POPULATION CHANGES

We have established that Grey Wagtails breed in a strictly limited habitat where they require a particular type of nest site, and that in Sussex they are largely sedentary. Three major factors regulate the population of such a species: the availability of suitable nesting sites, the availability of wintering sites with a continuous food supply and the severity of the winters. Repeatedly low winter mortality leads to an excessively high summer population which, in turn, is

limited by the first factor, availability of nesting sites. During such periods breeding success tends to fall, and surplus pairs and non-breeders expand into new (perhaps less suitable) areas. The success of such new colonization is largely dependent on a satisfactory survival rate in winter.

These trends were apparent during the last such period, the late 1950's up to 1962, from the various annual Bird Reports covering South-east England. They culminated in an all-time peak in Grey Wagtail population (see also Sharrock (1969)) which was then drastically reduced by the severe winter of 1962/63 (Dobinson & Richards 1964). The reduction was most marked among recently established populations (for example in Essex), and thus the whole cycle of gradual increase and spread with occasional sudden declines began once more. Evidence of previous such cycles is more patchy, but nevertheless apparent before and after the severe winters of 1939/40 and 1946/47. In the long term, in addition to these fluctuations, the population has very gradually increased over the last hundred years throughout southern England.

Sewage farms provide the best possible winter habitat, because the moving sprinklers on the filtration beds keep the sludge snow-free and the abundant food easily accessible. The provision of these man made habitats has probably done more to sustain the increase of the Grey Wagtail population in the south-east than any other factor, but ultimately the density of suitable breeding sites is the most important limiting factor. An opportunity exists here for co-operation between landowners and conservationists to provide holes and drain-pipes in bridges and masonry, without jeopardising their function, so that the present population level of this attractive bird can be maintained, or even increased.

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SUMMARY

A breeding survey of the Grey Wagtail (*Motacilla cinerea*) was made by the authors from 1967 to 1969. The species was discovered to be quite numerous and a total of 193 occupied territories was found; birds were present in a further 33 localities. The population has apparently increased since 1938.

Breeding densities in 19 regions varied between 0.4 and 20 pairs per 100 sq. km. of potential habitat; the relation between this variation and the surface geological strata is discussed. Breeding densities for five principal geological strata occurring in Sussex ranged between 3.8 pairs per 100 sq. km. on Weald clay and 30.8 pairs per 100 sq. km. on greensand.

Breeding density in Sussex is compared with some neighbouring English counties for the periods 1934 to 1968 and 1963 to 1968. With the exception of Essex there was no significant difference between the counties.

The status of the Grey Wagtail in winter was also studied by the authors from 1967 to 1969. The species was found wintering in 146 localities and was widely distributed. Numbers were considered similar to, or possibly slightly less than, the breeding population. The principal winter habitat of the species in Sussex is sewage farms, all of which are of modern design; their importance as a regulator of the population level is discussed.

The high proportion (84%) of breeding sites less than 3km. from the nearest wintering site suggests that the majority of Grey Wagtails breeding in Sussex are sedentary. The possibility that some birds wintering on or near the Sussex coast come from further north in Britain is discussed.

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