

FAIR ISLE BIRD OBSERVATORY BULLETIN



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Issued to the Friends of Fair Isle

Subscription, £1, 1s. per year

E D I T O R I A L

All Friends of Fair Isle will feel an especial pleasure in the news of the appointment of Mr. Arthur B. Duncan, Chairman of the Fair Isle Bird Observatory Trust, to be Chairman of Nature Conservancy in succession to Sir Arthur Tansley. The appointment, made by the Lord President of the Council with the concurrence of the Secretary of State for Scotland, was announced in early February. We are sure that all Friends will join with us in congratulating Mr. Duncan on his well-deserved accession to this important position, and in wishing him every success.

Mr. Duncan has been actively associated with Nature Conservancy since its inception, as Chairman of its Finance Committee and, of course, as a member of the Scottish Committee. The aims and aspirations embodied in the charter of this new and important government department are very close to his heart. His appointment is particularly gratifying because he represents, first and foremost, the interests of the great majority of naturalists and nature-lovers in the country, - namely, the amateurs. He is an amateur himself, of the older school which regards natural

science not as an array of clearly-defined branches in one of which an amateur might hope to gain some authority, but as a closely integrated whole each and every aspect of which has its challenge for the searching human mind. He is, moreover, a naturalist with vision, and yet essentially practical, - his part in the development of the Fair Isle scheme is testimony of that, - and there can be no doubt that the man and his office are supremely well-matched.

Nature Conservancy's functions are to provide expert scientific advice on the control and protection of the fauna and flora of Great Britain; to establish and manage nature reserves and organise research projects in connection with them; and to disburse grants to encourage worth-while scientific research in all its varied branches. We ourselves are in the happy position of being able to acknowledge with gratitude assistance which Nature Conservancy gave to our cause in the early days. One extensive reserve - the first in Britain - has already been set up in Wester Ross, and doubtless similar schemes for the conservation of our wild life will be declared in due course.

112. The Nature of Spring and Autumn
Passage Migration through Britain.

KENNETH WILLIAMSON.

The view which I have recently proposed (Scottish Naturalist, 64: 1-18) that spring and autumn passage migration through the British Isles is due largely to the accident of "drift" was the outcome of our failure to reconcile certain aspects of bird-movements at Fair Isle with the orthodox ideas based on the studies of Dr. W. Eagle Clarke and other earlier workers. Migration at Fair Isle is characterised by the following phenomena:

(a) In both spring and autumn the best falls of migrants occur with east and south-east winds - i.e. the same wind conditions bring us both north-bound and south-bound birds.

(b) These falls are sometimes very local. They may be confined to Fair Isle and Shetland, with no evidence of any movement farther south; or, on other occasions, the reverse may be true.

(c) Occasionally there is marked movement when the weather is quiet and clear and there is practically a calm, or at most only a light or moderate variable wind.

(d) Often there is a pronounced double peak in the passage of a given species, and this may be seen at either season: the first peak comes with easterly weather, and the second follows a few days later under quiet, often anticyclonic weather of the kind mentioned in (c) above.

(c) Sometimes, and most frequently in the autumn during these quiet weather conditions, we get a mixture of geographical races of the same species (such as Iceland and Scandinavian Redwings) taking part in the same movement.

(f) Not infrequently, and at all seasons, there are the arrivals of eastern, southern and south-eastern "vagrants" for which Fair Isle is justly famous; and some of these, such as Barred Warbler, Scarlet Grosbeak, Yellow-browed Warbler (to mention only the commonest), are regular in almost every autumn.

There were also a number of discoveries arising out of our study of bird-weights which we felt, must have a bearing on the general picture of migration. The most important of these discoveries was the fact that migrants lose anything from 20% to 40% of their normal body-weight in the oversea flight which brings them to Fair Isle. Evidence for this has been given in *Scot. Nat.* (op. cit.) and *Bulletins* 6 (paras. 60, 61) and 8 (99) and need not be repeated here. This loss results from utilisation of stored energy-providing reserves such as liver and muscle glycogen and carbohydrates in maintaining the bird's high metabolic rate.

It is clear that no bird can go on losing weight at this rate for very long, and its performance across a sea or any unsuitable terrain where sufficient food cannot be found to restore these energy-building reserves must be limited. Once the critical stage has been reached when the glycogen and fats have been used up, and

the breakdown of muscle protein begins, the situation is highly dangerous for the bird and quickly leads to exhaustion and death.

In view of these facts I think we are justified in drawing the obvious conclusion that no bird, unless it is a sea-bird, will voluntarily undertake a long oversea journey if an alternative overland or coastal route exists. Observation of the behaviour of day-migrants in Holland and south Sweden, when they are faced with the necessity of crossing comparatively narrow stretches of water, lends strong support to this belief.

To return to the Fair Isle observations. The statement has often been made by migration students that the strength and direction of the wind exert no important influence on migration. Other factors, such as variations in temperature and barometric pressure, and the effects of warm and cold fronts, have received much more attention, but no concrete views have emerged from such discussions. Experience at Fair Isle pointed strongly to the possibility that wind-strength and direction might be the key to the whole situation, - and this we now believe to be true.

Accordingly I determined to spend a full season in 1951 in an attempt to analyse the various bird-movements in the light of modern meteorological theory, using the Daily Weather Report of the Meteorological Office of the Air Ministry as a source of weather information. I could hardly have chosen a better season, for

in 1951 the quality of both spring and autumn migrations was excellent. During that year all the apparently conflicting and irreconcilable observations listed at the head of this article fell nicely into place, like the pieces of a jig-saw puzzle, and the concept of migrational drift emerged.

This we may summarise as follows. The act of migration is stimulated ("external proximate factor") by the lack of wind. For this reason migratory movements reach their zenith in anticyclonic weather, for then winds are practically non-existent or very light, and may remain so over a vast area for a number of days. It is probable from recent work on "homing" and direction-finding in birds that clear weather is also necessary to permit of sun-orientation: clear weather is also a property, though by no means as constant a one as lack of wind, of an anticyclone or "high".

Adjacent anticyclones may have very different physical properties, depending on their history since leaving their source. Thus, one which has spent a long time over a land-mass in the late summer will contain warmer and dryer air than one which has roamed about the North Atlantic since leaving the Azores. Along the line of the "polar front" where two such air-masses come into contact these different physical properties may interact in such a way as to give rise to depressions or "lows", and in the maritime region of Europe such disturbances in the "no-man's-land" between dissimilar highs are the primary cause in the North Sea of the

easterly airstreams which create deflection of coastwise-moving migrants towards the British Isles.

The pattern of migration into and through Britain appears to be largely dependent upon the movements of the various continental and maritime air-masses and the varying productivity of the several air-mass sources influencing our region. Thus, in a season like 1952, when the Azores source was particularly active and the continental polar high unusually weak, the meeting-ground or "polar front" is displaced and the North Sea may lie outside the sphere of influence of low pressure developments, so that bird-movements into Britain are rare.

We may conclude that wind is the all-important factor, not only at the outset of the migratory flight, but also over much of its subsequent course. The calm conditions of a vast anticyclone provide the optimum migration weather, with a minimum risk of drift, so long as the bird is flying clear of polar front developments. The dominance of the wind-factor over that of variation in barometric pressure is shown by the fact that migration also takes place under "col" conditions, i.e. through an area where there is comparatively low pressure lying between two opposing anticyclones and two opposing depressions; and that it may also take place from the comparatively calm central area of light variable wind in the mid-region of two contiguous lows. Cols extending through central to south-eastern Europe are responsible for some of our biggest drifts in spring (see Brit. Birds

45: 247-256, 260-1). This is because an extensive col is unstable, by reason of its very nature as the meeting-ground of air-masses of different physical properties, so that low pressure disturbances which might create strong drift are particularly liable to arise. The cyclonic variable situation between contiguous lows is rather rare and never extensive, so its effect is usually very local and the migration it initiates is on a minor scale: nevertheless, a number of movements out of the Faeroe-Shetland area which would come under our section (c) have now been observed in this kind of weather.

Peripherally, anticyclones have a clockwise moving airflow in the northern hemisphere. Thus, on the southern fringe of a high pressure system there is a westwards flowing stream of air. If, as is often the case, a depression abuts on the southern side of the anticyclone, then the westwards moving airstream is accentuated because the wind-system on the northern side of the low is complementary, - i.e. the movement of air about the centre of a low in the northern hemisphere is counter-clockwise.

Even over a land-mass, therefore, westwards drift of birds migrating southwards from the middle of an anticyclone is bound to occur, the more especially if the birds are without visual aids to enable them to correct for deflection from their course. On a dark night, or over an uncongenial area where the bird cannot rest or feed - such as a great inland sea like the Baltic or Caspian, or a desert such as that which occupies a large part of west-central Asia - a very considerable drift off course

could result even with very light winds, and in the absence of interference by low pressure disturbances. In the case of a well-established and extensive high such drift might continue for several days.

It follows from our knowledge of a bird's rapid physical deterioration that the migrant is required to make daily halts in a suitable environment for feeding. Birds which sustain an oversea or trans-desert drift must keep on moving until they find a place which will yield them sufficient food. This is well illustrated by the fact that some food-specialists, such as flycatchers and goldcrests, regard Fair Isle as a "desert" and pass on without delay, whatever the weather. It also follows that a drifting bird's best chance of ensuring its survival is to relinquish any attempt to fly in any innate "standard direction" it may have, and go with the wind. In that way it will add wind-speed to its own flight-speed and will cover the longest distance in the shortest time, and with the minimum deterioration in strength. So important is this from a biological viewpoint that I believe such behaviour could well have been selected for in migratory stocks.

This, then, is the essence of the concept of "migrational drift", - a movement down-wind in no objective direction, in an attempt to clear an inhospitable zone. It is a fundamental cause of the vagrancy of Asiatic birds in Europe, especially in the autumn: and, bearing in mind the nature of an anticyclonic wind-system, one can see that there is a corollary

in the rather more frequent appearance in western Europe of southern and south-eastern rarities in the spring.

It should be clear, too, why islands and prominent headlands make the best sites for Bird Observatories, and why birds are especially attracted to lighthouses. These are the first clues to a drifting migrant that a landfall is at last imminent, and they provide a definite mark on which such birds can set a new course that will bring their drift to an end. It is not unusual to see birds arriving at Fair Isle from the north or even north-west, flying a "duffer's course" towards the island against an easterly drift.

The fame which Fair Isle enjoys as a place where spectacular migration may be seen is due entirely to this phenomenon, this "accident" of migrational drift, originating largely in the Skaggerak crossing but also as far to the south as the Frisian Islands and the Dutch coast, - and, we might add, to the island's own splendid isolation in a 50-miles stretch of open sea. Fair Isle is, indeed, an enormous Heligoland Trap of the ocean, drawing in drift-migrants from a vast segment of sea around.

(The above article is based on the substance of a lecture to the British Ornithologists' Club, in London, on December 17th 1952).

113. Eastern Birds which have extended their Ranges into Scandinavia during the last 100 years. Part 2.

CARL-FREDRIK IUNDEVALL.

Spotted Eagle. Aquila clanga. May also have spread from SE. Has been found nesting on different occasions in Finland during the last few years, and for the first time possibly at one place in Sweden. In the Baltic States and East Prussia it seems to be a regular breeder.

Black Kite. Milvus migrans. Appears to have extended its range somewhat from SE. since about 1920. In south Sweden a nest was found in 1913, and in Finland in 1925, where the bird since that year seems to be a fairly regular breeder. Since 1936 it has been recorded almost annually in the south Swedish province of Skane, and has bred there on several occasions. It is also annually recorded at the Bird Observatory at Ottenby on Oeland.

Bittern. Botaurus stellaris. This bird, which was probably a fairly regular breeder in southern Sweden during the first decades of the 19th century, was only known as a rare visitor to south and mid-Sweden between about 1850 and 1918. During the first war, however, an invasion took place, and subsequently the Bittern seems to have nested again in central Sweden. A decrease was again shown, however, till 1943. In that year the bird began to increase markedly and it has almost certainly bred at some localities, although no nests were found until 1948.

Five breeding pairs were than located and three nests were found at Lake Mälaren at 59 N. lat. and here the bird has bred between 1949 - 1952. During the last few years it has been heard regularly at different places in south and mid-Sweden and about 15 nests have been found.

Mute Swan. Cygnus olor. A very unusual type of spread is shown by the Mute Swan. Its most important headquarters seems to have been at Hjälstaviken, a part of Lake Mälaren in east Sweden, at about 59 40 N. lat. From that place it has extended its range to other parts of the Lake, mainly during the 19th century. About 1848 it was first found breeding at Lake Takern (58 10 N., 15 E.), and this seems to have formed a second spreading-centre. During the last few decades the species has become fairly numerous in the most suitable places in eastern Sweden, northwards to about 61 N. lat. Somewhat similar circumstances are known from East Prussia and Denmark. In Denmark only three or four pairs were known to breed in 1925, and in 1950 about 400 breeding-pairs were located, most of them in the eastern part of the country.

Gadwall. Anas strepera. Was found nesting for the first time at Lake Mälaren (Hjälstaviken) in 1866, and since then has become a regular breeder on other parts of this lake and elsewhere in middle Sweden. It is supposed that the species has extended its range from the SE. In 1943 a new invasion occurred.

Garganey. A. querquedula. Has extended its range and recruited its numbers at different intervals (latest in 1952) from SE. Probably this is also the case with the SHOVELER.

Red Crested Pochard. Netta rufina. It has extended its range from south or possibly SE. to Denmark since about 1935. It was found nesting in SE. Denmark for the first time in 1940, and a flock of about 70 birds was reported there on May 1st 1948. Now regular. Occasional in east Sweden (one, December 20th 1937) and Finland (one, Aland, December 21st 1944).

Pochard. Aythya ferina. The first breeding records are dated Gotland, 1849, Oeland, 1855, Lake Takern, 1866 (?), and Norrkoping, 1870. It seems to be spreading NW. into Scandinavia from several centres in SE. Sweden.

Tufted Duck. A. fuligula. Apparently spreading from two directions, NE. and SE. In north Scandinavia the species seems to be well established except near the coasts; and in southern Sweden (where the first nestings were at Gotland about 1850 and Celand in 1856) it still seems to increase and spread NW.

Southern Cormorant. Phalacrocorax carbo sinensis. Was a regular breeder along the coast of south Sweden until 1909. Between 1880 and 1909 it decreased, and had completely vanished from the country by 1945. It has now increased again. In western Denmark a colony with 14 pairs was found in 1938, and this grew quickly to about 640 pairs in three colonies by 1946. Shooting and disturbance have reduced the number, but in 1951 there were still between 300-400 pairs. A few years ago a new site was established in SE. Sweden.

Great Crested Grebe. Podiceps cristatus. This species started to extend its range NW. to

southern Scandinavia in the early and middle 19th century. It reached Lake Takern about 1855 and is still spreading, especially in the eastern parts of the country.

Slavonian Grebe. P. auritus. Has markedly widened its distribution in east Sweden during the last decades. It was known from Gotland as early as 1841 and Oeland in 1856. The first nest at Lake Takern was found in 1915 and there I found no less than ca. 50-75 pairs in 1951. It has reached 61 N. lat. since about 1930 and other new breeding-sites have been discovered along the north Baltic coasts during the last few years.

Black-necked Grebe. P. nigricollis. Was not found nesting in south Sweden until 1927, in Skane, but as early as 1840 it was seen under conditions suggestive of breeding near Norrköping in eastern Sweden, where I found the species nesting again 110 years later, in 1950. The population seems to have recruited itself at different intervals from SE., notably in 1919 and 1952.

Little Grebe. P. ruficollis. Has perhaps extended its distribution from south or SE. but precise details are not known. The first Swedish nest was found in NE. Skane in 1905, and it is now probably a regular breeder at different places in southern Sweden.

Turtle Dove. Streptopelia turtur. Now a regular breeder in Denmark since 1880. It is, however, still only an irregular visitor to Sweden with between 70-80 records. Norway has about 40 records and Finland the same, though it seems likely to have bred there once.

Collared Turtle Dove. S. decaocto. For latest records in Germany see Jour. f. Ornithol. 1951: 26-31, 1952: 175-6, 366-8 etc. In Denmark the first records were made in north Jylland in the years 1948-50 and the species is now breeding there: see Poulsen, Dansk. Orn. Foren. Tidss., 44: 211-8. The first Swedish individual was shot at Raö in the parish of Onsala, Halland, on May 16th 1949. One was caught alive at Malmö, October 15th 1950. Another, shot at Bjälbo near Skänninge, Östergötland, on December 1st 1952, carried a Danish ring and had been marked as a nestling at Konsör, Sjaelland, on July 21st 1952.

At least one pair bred at Harlösa, near Lund, in the province of Skåne in 1952, and 4 birds were observed in the locality on September 15th. According to information from several inhabitants at least two pairs were breeding at Harlösa in 1951, and one of the pairs probably reared two broods. The Collared Dove was first recorded there (one pair, perhaps breeding) as early as 1950. Another bird was recorded at Fjäras, north Halland, on June 11th 1952.

Black-tailed Godwit. Limosa limosa. Was unknown as a breeder in Sweden until 1835 (on Gotland). Since 1852 it is known as a regular breeder on Öland, and since 1922 in Skåne. It decreased markedly, however, during the last decades of the 19th century and was for a long time extinct on Gotland. It has again been breeding there since 1933 or 1934 and seems to have increased also on Öland since about 1938. During the last decades it has been recorded at many places in SE. and central Sweden.

Avocet. Recurvirostra avosetta. Until 1896 was known only from Oeland (where Linnaeus found the avocet in 1741) and from Gotland from 1819-49. It decreased, however, and vanished also on Oeland in 1887. Apart from an irregular nesting in Skane in 1896 it was not found breeding in Sweden between 1886 and 1927. Since 1927 it has returned and increased. In 1938 I found the Avocet on Oeland again, and it has nested regularly since 1942. It has also increased markedly in Denmark.

Gull-billed Tern. Gelochelidon nilotica. This species, as well as the following, has two European breeding-centres, - along the coasts of the Black Sea (and Neusiedler Sea), and in Denmark and Holland. The Danish colonies, however, have probably recruited themselves from SW. It is once recorded in Norway, a bird with a Danish ring found in Oslofjord in April 1944; and has probably occurred twice in Sweden, at Hällingen in SW., June 15th 1940, and at Vombsjön in the south, June 6th 1949.

Sandwich Tern. Sterna sandvicensis. The first Swedish colony was found in the southern province of Skane in 1911: it has probably recruited from Denmark. Several colonies have also been found on Oeland, since 1919, as well as some breeding-pairs on Gotland. The possibility of a spread from SE. therefore cannot be entirely excluded.

Little Tern. S. albifrons. Has extended its range somewhat from the earlier northern boundary in SE. Sweden during the last decades. A most important part of the Swedish population

breeds on Oeland and Gotland, but the largest colony seems to be situated on the island Maklappen, outside Falsterbo in the southernmost province.

Little Gull. Larus minutus. Seems to be a fairly young representative of the Scandinavian avifauna. It is, however, known from Gotland in the Baltic since the end of the 18th century. In the last decades it has increased markedly in SE. Sweden, showing a tendency towards invasions. In all probability now a regular breeder in Denmark. Accidental in Norway.

Black-headed Gull. L. ridibundus. The first Swedish individual was shot on Gotland 1798. During the 19th century it became a regular breeding bird on Gotland, Oeland and in Skane. Its almost explosive increase started during the last decades of that century, and the first nesting at Lake Takern is dated 1894 or 1895. It occupied Lake Kvismaren outside Örebro in 1919 and Lake Vänern outside Karlstad in 1930, and is still markedly extending its range in west and NE. Scandinavia.

Little Crake. Porzana parva. Was found breeding at Lake Takern in 1925 (and possibly in Mörlanda, Smaland, south Sweden, in 1862). Also seems to have been breeding in Denmark. There are records from outside Helsingfors, May 27th to June 6th 1941, and at Borga in Finland, May 22nd 1950. These, together with recent Swedish records (Hjalstaviken, May 18th-June 29th; Roslagsbro, May 29th to August 18th; Vallentuna near Stockholm, May 18th-27th 1950, - all localities in eastern Sweden) point possibly to an increase during the last few years.

Baillon's Crake. P. pusilla intermedia.

Since 1948 has been found regularly at Lake Hjälstaviken in east Sweden (two or three males calling in 1948) and is probably breeding there. It has possibly also been breeding in Denmark. Like the Spotted Crake, P. porzana, it seems to have extended its range from the south or SE. during recent years.

Water Rail. Rallus aquaticus. The first Swedish nest was found about 1860. It has very noticeably extended its range in Finland and Sweden during the last decades, and is a regular breeder in Finland since about 1930, - with possibly earlier nests in 1915 and 1922.

Coot. Fulica atra; Moorhen. Gallinula chloropus. Both species have spread markedly in Scandinavia since about 1850.

Quail. Coturnix coturnix. The history of its spread in Sweden and Denmark has been described by G. Svärdson (Var Fagelvärld, 1944: 1-32) and K. Westerskow (Dansk Orn. Forenings Tidss. 1947: 89-115). It decreased in Sweden during the early decades of the 19th century, increased markedly from about 1840 to 1890, and then again decreased. Small invasions, however, are known to have taken place in 1921, 1943 and 1949, with probably another small influx in 1952. The Danish investigations show a perceptible rise in the Quail population about 1865 and 1890, an increase which seems to have coincided with invasions of the asiatic Pallas's Sand-Grouse, Syrhaptes paradoxus. Another increase in the Danish population seems to have commenced about 1930.

114. Weight Loss in Captive Birds.

P.W.P. BROWNE.

Weight loss has been mentioned in two connections in previous Bulletins, namely, (i) overnight losses in roosting birds, and (ii) weight-loss during migratory flights (1,4).

It is obvious that weight-loss during migration and weight-loss in captivity are to some extent related in that both are caused by the consumption of unreplaced "stores". Between August 25th and September 21st 1952 a number of trapped birds were re-weighed under varying conditions and after various periods of time at Great Saltee, in an attempt to obtain data on loss of weight. I must thank Mr. R.G. Wheeler and Major R.F. Rutledge for help in this study. The results are discussed under four headings:

(a) Variation of Weight-loss with Time in Captivity.

The average percentage rate of weight-loss (r) was calculated from the following formula

$$r = \frac{100 \ l}{w \ h}$$

where l = measured weight-loss in gms., w = the original weight in gms., and h = time in hrs., and is the standard figure used throughout most of this paper.

Table 1 gives results for 6 birds, held in bags, and re-weighed at varying intervals

Table 1.

Average percentage weight loss per hr.

	(r).							
	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Rock Pipit				3.14		2.59		2.28
Chiffchaff "A"	8.22	6.17	4.62	4.49		3.22	2.78	2.61
Chiffchaff "B"	2.14	1.61	1.07	1.07	1.34	1.20	1.55	1.65
Willow-warbler "A"				6.75		4.31		4.01
Willow-warbler "B"	4.72	3.94	3.41	3.35	2.56	2.56	2.24	2.20
Blackbird		2.13		1.85	1.57	1.44		1.15

during a period of 3 hrs. following the original weighing. It will be seen that in 5 cases the rate of weight loss decreased with time, but at a decreasing rate. (The deviation of Chiffchaff "B" should be noted). Thus the greatest loss in weight is likely to occur soon after trapping. This emphasizes the importance of reducing to a minimum the period between trapping and weighing.

(b) Weight-loss Overnight.

During experiments in another connection in which the birds showed some activity, one Chiffchaff, 4 Willow-warblers and a Blackbird were held overnight for between 10¼ - 12¾ hours. In these cases "r" was 0.96% - 1.40% for the warblers and 0.79% for the Blackbird. These figures compare with 0.47% - 0.89% for 8 Wheat-eats roosted at Fair Isle for 9 and 11 hours (1).

(c) Effect of Light.

Two wooden boxes were constructed, 12" x 6" x 6", with a door at the back. They differed only in that one ("dark box") was made light-proof, whilst the other ("light box") had a transparent celluloid end measuring 6" square, facing the laboratory window.

Rock Pipits were weighed and then placed alternately in one or the other of these boxes for one hour, after which they were re-weighed. 40 different birds were treated in this way - 18 in the "dark box", 20 in the "light box". The data and statistics (2) are given in Table 2 (first part). The interpretation of this analysis is that the probability of such results

arising from chance sampling is less than 1 in 1000, so the difference in weight-loss is highly significant. The reason presumably lies in a difference in activity rate in the two boxes, particularly as a connection between activity and exposure to light has been established (3).

(d) Variation in Weight-loss.

Intra-specific variation of r is demonstrated by a comparison of data from 12 warblers (7 Chiffchaffs, 5 Willow-warblers) in bags, and the 20 "light-box" Rock Pipits over one hour. The analysis has been made as above (see Table 2, second part) and the probability of such a difference arising by chance is less than 1 in 100.

Inter-specific variation of r was considerable, as Table 1 illustrates for two pairs of birds of the same species. Table 3 shows the range of variation of actual weight-loss in one hour for three species. It will be seen from this that no correction for weight loss between trapping and weighing can be applied with any confidence to individual birds.

Summary.

Birds kept in captivity lost weight at a decreasing rate. Weight losses of the order of 10% of original weight were recorded overnight. Rock Pipits kept in a dark box lost less weight than those kept in a box to which light was admitted: the differences are statistically significant. Chiffchaffs and Willow-warblers lost a greater percentage of their weight in an

hour than did Rock Pipits. There is considerable variation in the rate of weight loss between individuals of the same species.

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(1) Table 2.

	Dark box.		Light box.		Variance of sample	t.
	n.	mean.	n.	mean.		
38	18	2.133	20	2.906	0.547	3.30
(2)	Warblers		Rock Pipits		V.	t.
	n.	mean.	n.	mean.		
31	11	4.160	20	2.906	1.182	3.19

Table 3.

	Rock Pipit		Chiff-chaff	Willow Warbler.
	Dark	Light		
Max. loss (gm.)	1.04	1.27	0.45	0.65
Min. loss (gm.)	0.17	0.32	0.08	0.29

115. Mallophaga collected at Fair Isle.

We are indebted to Miss Theresa Clay of the British Museum (Natural History) for the following determinations of Mallophaga from birds examined at Fair Isle. Species names are not given in cases where the genus is in need of review.

STARLING Sturnus vulgaris zetlandicus.

Sturnidoecus sturni (Schrank) 1776. *Brüellia nebulosa* (Burmeister) 1838, and also a second as yet un-named species of *Brüellia*. *Menacanthus mutabilis* Blagoveschtchensky 1940.

YELLOW-BREASTED BUNTING Emberiza aureola.

Philopterus citrinellae (Schrank) from an adult male on July 13th 1951.

ROCK PIPIT Anthus spinoletta kleinschmidtii.

(The name of the Faeroe Islands race, from which the birds of Shetland, Fair Isle and the Hebrides cannot be separated). *Ricinus japonicus* (Uchida) 1915. *Philopterus* sp. *Menacanthus mutabilis*, a straggler from the Starling, - see the note below. *Actornithophilus* sp., - a straggler from a wader.

GREAT GREY SHRIKE Lanius e. excubitor.

Philopterus fuscicollis (Burmeister) 1838, collected from the head of a bird trapped on October 14th, 1952.

REDWING Turdus m. musicus. *Brüellia* sp.

- probably a straggler from a Starling. Also *Menacanthus* sp.

BLACKBIRD Turdus m. merula. Myrsidea thoracica (Giebel) 1874. Menacanthus sp.

WHEATEAR Oenanthe oe. oenanthe. Examples of Philopterus sp., normally a head-louse, have been collected from the body-plumage. Also Myrsidea sp.

YELLOW-BILLED CUCKOO Coccyzus americanus. Cuculiphilus decoratus (Kellogg) 1896, from the bird found dying at Exnaboe, Shetland, on November 1st, 1952.

GANNET Sula b. bassana. Eidmaniella pustulosa (Nitzsch) 1866. Pectinopygus bassani (Fabricius) 1780.

GREENSHANK Tringa nebularia. Actornithophilus sp. Quadriceps similis (Giebel).

DUNLIN Calidris alpina schinzii. Luniceps sp. Austromenopon sp. Carduiceps zonarius (Nitzsch) 1866.

RINGED PLOVER Charadrius h. hiaticula. Quadriceps hiaticulae (Fabricius) 1780, and Actornithophilus sp.

GREAT SKUA Catharacta s. skua. Saemundssonsonia stresemanni Timmerman.

ARCTIC SKUA Stercorarius parasiticus. Saemundssonsonia cephalus (Denny), collected from the hollow between gape and eye of a 20 hours-old chick.

116. The Straggling of Mallophaga.

It will be seen that the foregoing list of Mallophaga includes several records which are almost certainly due to "straggling", i.e. the accidental transference of a species from one host to another during contact.

Miss Theresa Clay has asked me to point out for the benefit of other Bird Observatory workers who may be collecting Mallophaga that records are valueless (and, in fact, specimens should be destroyed) if the host-record cannot be absolutely guaranteed. Contact between trapped birds can take place very easily at a Bird Observatory, when more than one species may be confined to the catching-box at the same time.

To give an illuminating instance. On one occasion in September a Rock Pipit and Starling were driven into the catching-box of a portable trap together. They were removed in less than half-a-minute and put into separate bags. A number of Mallophaga fell from the Starling during "chloroform bath" examination, and the Rock Pipit also yielded a few specimens which appeared to us identical, and which we thought might have transferred to the pipit during the brief contact in the box. Miss Clay has now confirmed that this was in fact the case, so the record of Menacanthus mutabilis from the Rock Pipit is useless from a scientific point of view. So unless a trapped bird is known to have had no contact with a bird of another species whilst in the catching-box, carrying-box or bag etc., search for Mallophaga should not be carried out.

117. Recoveries of Ringed Birds.

STARLING. Sturnus vulgaris zetlandicus. An adult bird (wing 125 mm., weight 91.6 gm.) taken at North Haven on May 9th 1949 was found dead on the isle of FOULA, Shetland, 45 miles N.NE. of Fair Isle, on October 20th, 1952.

MEADOW PIPIT. Anthus pratensis. One from the Gully Trap, August 28th 1952, was found dead at Lapouyade, near Guitres, FRANCE, on October 12th 1952.

An adult trapped in the Gully on August 5th 1952 was shot near Seville, SPAIN, in January 1953.

One taken in Vaadal Trap on August 21st 1952 was found dead at Den Helder, HOLLAND, on February 11th 1953.

The locality for the nestling Meadow Pipit given as "Bordeaux" in Bull. no. 8 (96) has been more exactly reported as Ie Teich, near Biganos, Gironde, FRANCE.

SONG THRUSH. Turdus ericetorum philomelos. A 1st-winter bird (wing 123 mm. weight 74 gm.) trapped in Vaadal on October 1st 1951, was reported from Maliano, Santander, SPAIN, on November 24th 1952. On the day when this Continental Song Thrush was ringed an enormous migrational drift - mainly of Robins - took place along the east coast of Britain in the easterly airflow of an anticyclone covering the whole of north-western Europe.

REDWING. Turdus m. musicus. A Continental bird with wing 117 mm. caught in the Haa Trap on

May 10th 1952 was shot at Celorico de Basto, in PORTUGAL, on January 20th 1953. There is no doubt that this bird was a drift-migrant at Fair Isle, crossing the North Sea (probably from the north-west German or Danish coasts) ahead of the occluded front of a depression, centred west of Ireland during the night of 9th/10th. There was a rain-belt associated with the front, particularly active in the west (Shetland-Faeroes area), and the bird's very low weight of only 57 gm. is consonant with the view of a long oversea flight through such weather. The average weight of spring migrant Redwings passing Fair Isle from the British area is nearer 80 gm.

We may assume, therefore, that this bird was returning coastwise to Scandinavia from its wintering place in south-west Europe on May 9th when it was displaced to Fair Isle overnight by the easterly airstream ahead of this front. Despite its low arrival weight, and the hazards of a further North Sea crossing, it must have regained its breeding-place, returning to the Iberian Peninsula for the winter of 1952-3.

BLACKBIRD. Turdus merula. A 1st-winter male taken in the Observatory Trap on October 17th 1951 was shot at Rade, Ostfold, NORWAY, - 500 miles due east, - on October 3rd 1952.

Another 1st-winter male, from the Gully Trap during a big rush of this species on October 27th 1950, was found dead in mid-November 1952 at Eggington, Leighton Buzzard, BEDS.

An adult female caught in the Gully on October 16th 1951 was picked up, "long dead", at Girvan, AYRSHIRE, on Christmas Day of 1952.

WHEATEAR Oenanthe oenanthe. A 1st-winter male from the Dyke Trap on July 18th 1951, - no doubt island-bred, as this date is only a fortnight later than the dispersal of young birds, - was killed at Azibo, near Braganca, PORTUGAL, on October 9th 1952.

This is our second recovery of a Fair Isle Wheatear from Braganca, the previous one being a nestling ringed on June 16th 1948 and recovered on September 20th in the same year.

FAEROE SNIPE Capella gallinago faeroeensis. A tired migrant, with the plumage characters of the Faeroes-Iceland subspecies (which is perfectly valid, despite the views of the B.O.U. List Committee: see Ibis 93: 315-6), was trapped in Vaadal on October 17th 1950. It was shot on Bodmin Moor, Cornwall, on October 11th 1952.

The weather-map for the night of October 16th/17th 1950 suggests that the bird reached Fair Isle from Iceland by a cyclonic approach in the W.NW. airstream of a low moving away eastwards from that country.

MERLIN Falco columbarius aesalon. At the end of July Mr. W. Kay marked four nestling Merlins at Dale, SHETLAND, with our rings. One of these was recovered at Holmsgarth, only a few miles away, on December 30th 1952, - a record which suggests that Shetland Merlins, like other British-bred birds, are sedentary.

An Icelandic Merlin Falco c. subaesalon, a male with wing 205 mm. caught in the Double Dyke Trap on August 19th 1952, was near Blairgowrie, PERTSHIRE, in January 1953. It was slightly injured and was kept for some days and eventually released.

118. Summer Notes from Fair Isle
in 1943 and 1946.

This note is abstracted from observations made by visitors to Fair Isle in 1943 and 1946, before the Bird Observatory was established. The first visit extended from March 17th to July 28th, and was by Mr. REG. C. MAY, and the later one was a much shorter stay from July 29th to August 5th, by Miss MARY HENDERSON.

These visits were made before the ARCTIC SKUA colony had begun to expand, and both observers record 8 breeding pairs. The birds must have been very late in arriving in 1943, as the first was not recorded until May 14th (the first Great Skua having been seen a month before), and subsequently 7 nests were found. When we came to Fair Isle in 1948 the population of Arctic Skuas had gone up to at least twice that number, and it has continued to increase yearly and now stands at 33 pairs. The Great Skua population, on the other hand, did not change between 1946 and 1948, there being 4 pairs in each year. Mr. May found one nest only in 1943 and never saw more than 5 birds about the isle.

One of Miss Henderson's Great Skua pairs was in the middle of the Eas Brecks moorland, - probably the same pair as was nesting there in 1948, and has returned annually since. In the neighbourhood were two pairs of Arctic Skuas, whereas there are now 5 pairs on that part of the moor. Another Great Skua's nest (two young) was on the east side of the hill

Curiously, there were no CORNCRAKES in 1943, - except for a spring migrant on May 13th, - nor is this species mentioned in Miss Henderson's list. However, 1943 was notable for the finding of two QUAIL's nests about 100 yds. apart, and containing 11 and 5 eggs respectively, on July 20th. In the same year an egg of the STORM PETREL was found, but although Miss Henderson examined the Kirn of Scroo where this species is said to have nested in the past, she found only feathers of a bird presumed to have been killed by a cat.

An important record accrued from the 1946 visit, - the first known nesting of HOUSE MARTINS at Fair Isle. Miss Henderson's diary says: "August 1st. Saw and heard a House Martin hawking between the two Reevas, and located a nest on the north side of Round Reeve. The nest was visible, and washings of mud running down from it could be seen. Two birds were about and both visited the nest, sometimes together." In 1943 Mr. May had written of this species: "First April 30th. Few remained and may have bred, but no proof."

The spring migration in 1943 appears to have been exceedingly poor, but some interesting midsummer movements occurred. There were three Crossbills on July 12th, and a Song Thrush (also one Crossbill) next day. An unusual record is of a male Long-tailed Duck on July 9th, and there were three Velvet Scoters offshore on July 23rd. A single Golden Plover was seen on July 4th and twelve on July 10th. A Shelduck was seen at the end of July in both years, and Miss Henderson twice recorded a Kestrel and heard a Snipe "chip-chippering" over the marshy Gilsetter field. She reports a scarcity of Meadow Pipits in that year.

Other migrants perhaps worthy of note in 1943 were Carrion Crow, April 19th; 3 Jackdaws, May 12th; first White Wagtail, May 14th; a Ring Ousel, April 21st; no Blackbirds after April 13th; several Robins up to March 30th; Swallow, April 30th; Swifts, May 12th and July 28th; Cuckoos, May 19th and June 5th; Kestrel, May 21st; pairs of Teal May 1st and 15th, but only one Mallard, March 24th; 2 Pintail, May 23rd; 3 Black-tailed Godwits on May 18th and 4 on 22nd, also 2 with Whimbrels on 25th.

119. Eastern Birds in Scandinavia -
Corrigenda.

The opportunity is taken of correcting a few slips which occurred in typing-out the paper by Carl-Fredrick Lundevall in Bul. no.9 (102).

With regard to the range-extension of the GOLDEN ORIOLE, this is due only in part to an incursion from Finland. The biggest part of the Swedish population is found in SE. Skane, but isolated breeding and other records have been made in Central Sweden in a similar biotope to that occupied by the bird in Karelia. These may have an eastern source.

In the case of the YELLOW-BREASTED BUNTING the word "nests" should be deleted, as only males in song were found.

Under BEE-EATER, the reference to Journ. f. Orn. should be accredited to K. Baur (1950). The information from W. Makatsch was contained in a letter to the author.

120. Spring Sedge-Warbler Passage.

KENNETH WILLIAMSON.

Sedge-warbler Acrocephalus schoenobaenus movements at the Isle of May in the spring of 1952 show an interesting correlation with the meteorological conditions depicted in the Daily Weather Report of the Meteorological Office of the Air Ministry. There is a clear alternation between drift-arrivals on easterly winds from the Continent, and northwards passage of a coasting nature in calm, anticyclonic weather.

Three birds on May 1st were part of a movement which came in with an easterly airflow on the northern side of a trough belonging to a low centred well to the west of Ireland. There were 4 examples in the much larger invasion of birds which arrived on 5th, and which is discussed in the Editorial of Bull. no.7: but the first peak of Sedge-warbler passage was not until 7th, 25 being seen on that day. In this instance the cold front of a depression centred off north-west Ireland had a south-easterly airstream ahead of it flowing from the Dutch, German and Danish coasts across the North Sea to Scotland. Conditions were somewhat similar for a small rise in numbers on 9th, another day on which drift of other species took place.

Two birds on 14th, and 8 on 17th (with 7 at Fair Isle next day), were associated with unusually clear and calm weather in the British area. These anticyclonic conditions had reached their zenith in southern England and northern France two days before, no doubt stimulating

the movement which passed first the May and, a day later, Fair Isle. The sky became obscured from the Yorkshire coast northwards to Orkney during the night of 17th/18th, but this does not seem to have hindered movement as the Sedge-warbler was the dominant species at Fair Isle next day. Throughout the 18th, however, there was widespread fog along the east coast, and this does appear to have inhibited migration, as only a single bird was seen at the Isle of May on 19th. The fog cleared during that day, and with conditions remaining calm - with England and Scotland in a col between highs to the south-west and over Scandinavia - Sedge-warbler passage was renewed and culminated in a second peak of 20 birds at the Isle of May on 20th.

121. From West Coast Lighthouses.

Ian Walker (Little Ross, Solway) reports a very uninteresting autumn, with few birds at the light. On October 15th two small flocks (20 and 12) of juvenile Swallows were seen in the morning and afternoon, and on November 18th a female Common Scoter struck the lantern and was killed. A male Sturnus v. zetlandicus (ex Hebrides ?) with wing 135 mm. was caught at the light on December 8th.

Leslie Anderson (Rhinns of Islay) found bird-watching equally dull, but for consolation he caught at the lantern on October 16th three Blackbirds, one of which had been ringed at Hallsborg, 23 km. S.SW. of Örebro, Sweden, on May 17th 1952.

The first Snow Bunting was seen at the Rhinns on September 26th.

122. Autumn and Winter at Fair Isle.

This is a continuation of the article in Bull. no.9 (110) and contains the balance of selected autumn migration notes, to which have been added a number of observations made during the winter by James A. Stout and James Wilson.

STARLING. November 17th - at 9 a.m. 7 starlings were seen from The Good Shepherd when she was 8 miles SW. of Sumburgh. They were flying directly SW. about 50-60 ft. above sea level. Light wind, N.NE.-N.NW., good visibility. There was a big influx into the island on Nov. 30th, and an increase January 19th-20th.

James A. Stout writes that during the height of the northerly hurricane on the morning of January 31st he "observed three starlings crouching in meadow grass, with their heads pushed to obscurity in the tufts!"

TWITE. Reduced to six after two days of light N.NE. wind, November 18th (Azores high to west of Scotland, strongly influencing the northern isles). Subsequently there were 14 or so and 22 are recorded for December 7th. Only 2 on December 21st and 6 on 28th; rather more than a dozen during most of January (17 on 17th), but down to 6 again on February 11th.

WHITE WAGTAIL. An exceptionally late bird at Leogh from about November 20th for a fortnight. James Stout saw it on 30th; "it appears to be moulting, and the tail not full grown."

BLACKCAP. One trapped by James Anderson on December 5th, a female weighing 15.42 gm., the latest record for the isle.

WAXWING. One on Houll Hill, November 15th.

MERLIN. One, November 27th-28th. Passage had ceased by mid-October, but one was recorded on 20th-21st.

SPARROW HAWK. One on the isle during the winter, as last year. First seen December 8th and at regular intervals to January 13th.

GREY GEESE. Two from August 30th to Sept. 2nd were Grey Lags. There were 8 unidentified grey geese on September 28th, a flock of 30 on 30th, and 5 Grey Lags on October 1st. In fine anticyclonic weather on October 11th a party of 23 Pinkfeet flew low over the moor, and on the same morning a party of 5 Whooper Swans was seen. No more geese arrived until strong westerly wind at the end of the month and first days of November brought the main movement, 5 and 17 Pinkfeet on 30th-31st succeeded by smaller parties of the same species and Grey Lag on the three following days. An adult female Greenland Whitefront Anser albifrons flavirostris, the second example for Fair Isle, was shot on November 5th and the skin is now in the Royal Scottish Museum. Another Whitefront was seen on November 19th, and other grey geese arrived on 24th, 26th (Pinkfeet) and 29th (Grey Lag).

DUCKS. Flocks of a dozen or so Mallard on October 5th and 12th and one or a few at other times, but very rare in midwinter. Teal very scarce, - a few September 29th and from October 12th-14th. Wigeon movements between September 4th-11th and Sept. 22nd-October 3rd, with 5 on 7th but none later. Female Pintail Sept. 30th. Tufted Ducks occasionally in second half Sept. one Nov. 1st and 4 on January 21st. Goosander on December 3rd-4th.

FULMAR. Birds lingered at the cliffs until October 7th, and then they went to sea, - for one week! Birds were planing along the coast again on 13th-14th, and a number were ashore at the north. During the following week well over 200 each day could be observed flying about and sitting on the cliffs of Sheep Craig, but it was not until 31st that a general re-occupation of the cliffs of the main island took place. On this day the "blue" Fulmars of Johnny's Peats - see Bull. no.8 (90) - and the Kame of Furse were back on their ledges. There were occasional dark Fulmars in mid-channel on "Good Shepherd" days, three being seen on Feb. 17th. As usual, the cliffs were deserted during spells of rough weather. After November 2nd all left and remained away for several days during a NW. gale; and James Stout records that all left the island on January 26th with the wind increasing from fresh to W.SW. gale, and did not return until two days of light variable winds in mid-February.

GANNET. Seen on every crossing: especially common on January 6th and February 19th, but four only on January 19th.

ROCK DOVE. The highest winter counts were 25 on January 8th and 17th.

WOODCOCK. First on September 28th; four on October 13th, 50 on 18th, and well over 200 on 20th, but no big "falls" afterwards.

JACK SNipe. A few at the end of September and a real movement, 10 each day, October 5th-6th.

RUFF. Occasional from mid-August, eight on September 1st, and a late bird September 27th-29th (see para. 126).

TURNSTONE. First parties on August 4th, 9th and 12th. Considerable passage from August 22nd to September 12th, with over 50 on some days at the beginning of the month. Further strong passage September 23rd-26th and October 6th-7th, and a varying number throughout the winter.

DUNLIN. An exceptionally interesting mid winter movement was first noticed on the night of February 10th when James Wilson caught three with a light in the fields. At least 9 birds next day, and on 12th "Dunlins seem to be all over the island in numbers of from 2 - 5 and a real invasion must have taken place." They were still about on 14th, but very few remained by 17th and all had gone by 24th.

SANDPIPERS. Common occasionally in mid-August; Wood singly from August 1st-8th and 18th-22nd, two from 10th-12th and three on 21st; Green from August 20th-23rd. Greenshank occasionally from August 20th to end of the month, and from September 5th-10th and 18th-20th.

RINGED PLOVER. Considerable passage from August 27th to September 4th.

OYSTER CATCHER. Disappeared in mid-Sept. but four migrants arrived on 25th and there were single birds on dates in October. First return migrants on February 16th and 18th.

SKUAS. Last Arctic seen on September 5th and 6th. Last Bonxie on October 1st-2nd.

WATER RAIL. Infrequent in late autumn. Five were seen on February 12th.

COMMON GULL. Passage peaks on August 27th and especially 30th (200 plus); September 25th - 27th; October 5th and again 19th-20th (100 plus). Seven on December 24th.

GLAUCOUS GULL. Eight on December 4th-5th, 10 on 8th, 30 on 9th-10th with 100 Herring Gulls and 50 Greater Blackbacks, Glaucous increasing to 40 on 11th-12th. A later increase in Glaucous from 20 to 50 took place on December 16th but only 10 remained on 20th. Next day they increased to 30, and 100 each of Herring and Greater Blackback also came into the isle, the latter declining to 30 on 24th-25th and the Glaucous disappearing until 28th, when 10 were seen. One on February 10th and two on 20th.

LITTLE AUK. 50 off Sumburgh Head on Dec. 8th, 70 on January 6th, but only 8 on 19th. "Singly or sometimes in small flocks of 3 to 6 all the way between lands" on 22nd. "Most auks there have been all winter" recorded for February 2nd. About 100 during the crossing on 13th, and quite numerous in the Fair Isle tideways on February 17th, but none at all two days later.

THRUSH MIGRATION. Following the first real movement at the end of September - see the Editorial of Bull. no.9 - there was no big influx of Redwings and Fieldfares till October 5th. An increase on 11th was followed by a big invasion of ca. 2,000 Fieldfares on 12th and as many Redwings next day. Also 500 Blackbirds on 12th, and 100 Song-thrushes on 13th. Another influx of Redwings took place on 17th, Fieldfares on 18th, and thousands of mixed Turdidae arrived on 20th. No big movements during the winter months.

123. Autumn Report from the Isle of May.

The autumn migration was poor in comparison with that of previous years - 1951 especially - and the total number of birds ringed, 1,926, was the lowest since 1948. A new trap, built in a gully among the rocks south of Kirk Haven, was in operation in the autumn.

The more interesting birds recorded on autumn migration include a Barnacle Goose (on September 7th); Pomarine Skuas (one on September 18th and 2 on 22nd); an early Glaucous Gull (September 26th); a Little Tern (September 23rd); Turtle Dove (September 10th); and Nightjar (July 28th). A pair of Stonechats appeared on October 3rd and single birds were seen from 16th-18th and on 22nd, and for the second year in succession a small party of Long-tailed Tits visited the island, 6 being seen on October 25th.

Three Black Redstarts arrived on October 13th, and others were present on 20th and for several days following 23rd. Apart from a single bird on October 1st "Northern" Chiffchaffs were not recorded until between 19th and 25th, with 6 birds from 22nd-24th. This passage was nearly a week later than passage of this species through Fair Isle (see Bull. no. 9, para. 110).

There was a Barred Warbler on August 8th and 9th; Scarlet Grosbeak on September 7th; an Ortolan on October 24th (the latest date for the isle); and Great Grey Shrikes (two being trapped) between October 17th and 24th.

124. Stonechats in the Royal Scottish Museum.

K. WILLIAMSON.

Recently I examined the collection of Stonechats in the Royal Scottish Museum with a view to making subspecific identification of the Fair Isle material. As is well-known, the Stonechats of Britain are separable into two races, the mainland Saxicola torquata hibernans Hartert (type-locality Tring, Herts.), and the Hebrides bird Saxicola t. theresae Meinertzhagen. The validity of hibernans is doubted by Colonel Meinertzhagen, since birds from Tring do not differ in any constant respect from those of Seine Inferieure, which is the type-locality of the Continental Stonechat S. t. rubicola (Bull. B.O.C. 1952), and in this note the term "British" must be understood to refer to birds of mainland, as distinct from Hebridean, type.

H.F. Witherby, in the Handbook of British Birds, 2: 177, says that the Hebridean form extends to Ayr, Renfrew, and possibly farther north and south, "but limits of distribution as yet undefined." The Hebridean is a distinctive race with the plumage more heavily pigmented with phaeomelanin. The feather edges of the upper parts are darker rufous in fresh dress than in British birds and the chestnut of the under-parts is deeper and richer in tone. According to Witherby (op. cit.) these differences are discernible only in the female, the male having "edgings of feathers of upper-parts sometimes rather darker than in British form but no constant difference."

In three freshly moulted males from the Butt of Lewis the racial characteristics are every whit as strongly marked as in females from Butt of Lewis, South Uist and Colonsay, and the group, plus the winter specimens mentioned below, is very distinct from a long series of British birds.

The Handbook quotes Dr. James Campbell for the information that "movement away from the breeding-grounds in Outer Hebrides begins July and bird is scarcer winter and some evidently emigrate." The provenance of three winter birds belonging to theresae suggests that this movement is in the nature of a wide dispersal which may reach the eastern and northern limits of Scotland. The records are Pitlochry (Perthshire), a male, December 1935; Aberlady (East Lothian), a female, December 11th 1937; and Fair Isle, also a female, September 26th 1911. Another female of this form was trapped at Fair Isle on October 1st 1950, just after a south-westerly gale.

Scottish localities for Stonechats which I cannot separate from the British form (specimens from English and Welsh localities were used in the comparison) are: Reston (Berwickshire), Dunbar (East Lothian), Dunipace (Stirlingshire), Pentland Skerries (Orkney) and Fair Isle. The Orkney and all the Fair Isle specimens are from the spring, between February 28th and April 26th, but mostly in the month of March and mostly females. The plumage of these birds is not too worn to preclude racial identification, though this is normally impossible in the later spring owing to abrasion of the feather-edges.

125. Reconnaissance at Tarbatness.

IAN D. PENNIE.

A few days in the second week of October were spent in migration-watching at Tarbatness, at the entrance to the Dornoch Firth. Tarbatness is a peninsula about $3\frac{1}{4}$ miles in length from NE. to SW. and $1\frac{1}{2}$ miles wide. Most of the land is agricultural, except at the northern extremity, where the Lighthouse stands, with an area of heather and crowberry to seaward and a thick growth of whins on the inland side. At the base of the peninsula is the village of Portmahomack, connected to the Lighthouse by a road. At one of the farms midway along the road is a shelter-belt of pine trees some 300 yds. long by 20 yds. wide.

During the first two days, October 6th and 7th, there was a strong northerly gale and no birds. On 8th, with a west wind, three Redwings were seen in the whins, two Fieldfares on arable, four alba wagtails at the Lighthouse, and a late Sand Martin was recorded. The wind was again northerly on 9th-10th and no migrants appeared, but with W.SW. wind on 11th, a fine and rather warm day, there was some activity. Small flocks of Skylarks (one of 50 birds) flew past almost continuously to the east; there were many small flocks of Twites; one or two thrushes and Blackbirds were seen, and three probable Snow Buntings flew high over to SE. The wind changed to east in the evening.

At first light on 12th the wind was moderate SE. and it was clear and dry till evening.

when a SE. gale with much rain blew up. At 0700 hrs. there were flocks of Fieldfares in and around Portmahomack, and a flock of 30-40 Blackbirds or thrushes (uncertain in the half-light) were flying SW. from the Lighthouse. Several Redwings were sheltering in the whins, but all moved off SW. as soon as it was fully light and all had gone by 0900 hrs.

Next morning, early, under similar conditions to those of the previous evening, a great many Redwings were heard calling all round the Lighthouse, and as it grew lighter I could see large numbers of them on the heathery ground to the north of the tower. There were also some Blackbirds and Fieldfares close to the Lighthouse. At 0800 hrs. a flock of about 50 Redwings came straight in off the sea and flew overhead towards the farms, without halting. Occasional parties of three or four continued to arrive afterwards, but again all had gone by 0900 hrs. except for one or two in the whins.

At 0800 hrs. I almost trod on a small bird between the Lighthouse and the Point which from what I could see of it in the poor light, was probably a Lapland Bunting.

The wind was E.SE. and very light on 14th, and there were fewer birds about the Lighthouse at 0700 hrs., - some thrushes and Blackbirds, and one or two Redwings and Fieldfares. The morning was much clearer than on 13th, which had been very cloudy, and birds may already have moved off inland before my arrival.

I was at the Lighthouse at 0800 hrs. on 15th, with the wind now westerly. A few Song Thrushes were the only birds about. Early mist cleared during the forenoon and a fine sunny day resulted. For the first time I passed the full morning on the farmland and in the pine strip at Brucefield. There were large flocks of Skylarks on the rough grazing, a large flock of Corn Buntings, many Twites, and scattered thrushes and Blackbirds.

In the wood I found a flock of about 20 Chaffinches, a female Redstart, and several Goldcrests. There was also a Cole Tit. This wood is so small and so widely separated - by many miles - from any other that it is unlikely that the Goldcrests and Chaffinches could have been resident birds. These and the Redstart are more likely to have come in with the easterly weather during the previous two days.

A pair of Grey Wagtails was at Portmahomack, and a Long-eared Owl was living in the disused Lighthouse garden. A Raven was seen one day, a Buzzard on several occasions, and Kestrel and Merlin were recorded. There seemed to be an incredible number of Robins for such a place. About 300 Pink-footed Geese, which, with numerous ducks, winter along the salt-marshes and mud-flats of the Dornoch Firth, were swimming offshore on 15th.

The few days of east wind had shown an interesting if not spectacular movement, and even with westerly winds it would appear that movements of a coastwise nature may be expected.

Probably a longer watch spread over a few weeks of the migration time would be very rewarding. My impression is that Tarbatness is well worth re-visiting and covering properly, - without question it is a much more promising site than Noss Head in Caithness, which I wrote about in Bull. no.5 (49). I now realise that I would probably have seen a great deal more than I did if I had worked more on the arable land and in the small pine plantation, and had not concentrated so much on the whins near the Point.

126. Autumn Bird Notes from Shetland.

L.S.V. VENABLES.

Passeres. Few Chaffinches, October 6th; few Bramblings 15th, and a small influx of both on 19th. Numerous from 20th-27th, when they left. First Snow Buntings (flock of 6) September 7th. Two Goldcrests at Boddam, September 12th. Late White Wagtail, October 30th.

Flock of 23 Jackdaws over Spiggie October 15th: plenty at Kergord, of course, on a visit from 24th-28th. Rocks, old and young, were at Kergord at that time, and the nests were still in situ despite the autumn gales: see Bull. no. 7 (76).

A Red-throated Pipit Anthus cervinus was on Ievenwick dunes on September 12th: it gave the correct "chup" call-note several times when flushed. My only other Dunrossness record is also September 12th, in 1950, - an astonishing coincidence!

Fieldfares and Redwings were first seen on September 29th and both species increased next day. Big influx of both, with some Black-birds, October 12th. Very large numbers of all three on 14th, plus some "grey" Song Thrushes. They remained abundant until 26th, when most left. Further increase, October 30th. Ring Ousel, female October 13th, male October 25th.

Migrants seen at Kergord Plantation from October 24th-28th included Redwings, Fieldfares, Chaffinches, Bramblings, Blackcaps (both sexes), one Willow-warbler, Chiffchaffs, Goldcrests, a few Robins and a Stock Dove Columba oenas.

Waders. Last Red-necked Phalaropes on August 17th (3) and September 3rd. Little Stint at Virkie August 18th and flock of 6 Temminck's Stints at Spiggie on 26th. Two Curlew Sandpipers at Virkie on September 9th. Black-tailed Godwits on the Spiggie-Brow marsh from August 30th to September 1st, and Ruff/Reeve and Green-shank there on 1st and 2nd. Four Ruff/Reeve on September 28th. First Woodcock October 14th.

Waterfowl. Whooper Swans were earliest ever this year: there was one around Dunrossness during the last 3 weeks of August, two at Spiggie on September 8th and one on 11th. The Loch Spiggie population rose to 101 during the late November frost but fell later to the 80's. Very few Cygnets.

Four White fronted Geese wintered in the Spiggie area, our first record although a few casuals are mentioned in the literature.

First Long-tailed Ducks, a flock of 15 in Bay of Scousburgh on October 15th. Single Shoveler on Hillwell August 21st and September 2nd, and 4 on 11th. Two Pintail at Hillwell, October 1st. Flock of 16 Pochard, the first, Loch Spiggie October 5th. Mallard on this loch were up to 250 on October 21st-22nd.

Other species. Sooty Shearwaters seen September 4th (St. Magnus Bay) and October 2nd (Ve Skerries). First Glaucous Gull, an adult, November 3rd, and several next day. Red-necked Grebe in Weisdale Voe October 27th and a Great Crested on Loch Spiggie November 2nd-3rd.

A dying Yellow-billed Cuckoo Coccyzus americanus was picked up by T. Moncrieff at Exnaboe on November 1st, after several days of westerly wind, as recorded in Bull. no.9 (104)

127. Song Thrush in Shetland -
A Correction.

L.S.V. Venables writes to point out an error in the typing out of his article in Bull. no.7 (76) on Shetland breeding-birds. The nesting-record of the Song-thrush was the first for Lerwick, - not Shetland, as stated, - for some years (in actual fact, since 1946). He writes: "Kergord has never been completely thrushless since we came to live here, though it was reduced to one pair in 1951 and 1952".

Fair Isle Bird Observatory, March 18th, 1953.

FAIR ISLE BIRD OBSERVATORY

THE WORK OF THE OBSERVATORY

The purpose of the Bird Observatory is to provide facilities for visitors to carry out scientific research on the island, not only in the sphere of ornithology, but in every aspect of Natural History. Work will be mainly concentrated however on ornithology under the supervision of the Director.

TERMS

Full board, including service, is *Six Guineas per Head per week*. Reduced terms are available for parties of students from schools and universities.

APPLICATIONS

Priority in bookings will be given to "Friends of Fair Isle," and to *bona fide* naturalists prepared to take part in the scientific investigations of the station under the leadership of the Director, and to help with such other duties as may be necessary from time to time in connection with the station or hostel. Anyone else wishing to visit the island will be made welcome, provided room is available. Those who are not keen ornithologists are asked to book for the summer months—June, July, and August—so that more accommodation will be available in the spring and autumn for students of bird migration. Application should be made as follows:—

- (1) *If made between 1st April and 31st October.*
To the Director, Fair Isle Bird Observatory,
by Lerwick, Shetland. Telegraphic address:
"Migrant, Fairisle." Telephone: Fair Isle 8.
- (2) *If made between 1st November and 31st March.*
To the Director, Fair Isle Bird Observatory
Trust, 17 India Street, Edinburgh.
Telephone: Edinburgh CENTral 4532.

PROSPECTUS

Prospectus giving details of transport to and from Fair Isle, and other information, will be sent on application.

FAIR ISLE BIRD OBSERVATORY

0 160yds. 440yds. 880yds. 1 mile
 Roads ——— Bird Trap — TRAP Boundaries

