

THE EFFECT OF THE WINTER OF 1916-1917
ON OUR RESIDENT BIRDS.

BY THE

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AND

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PART I.

THE widespread destruction of Bird-life caused by the severe winter of 1916-1917, and more especially by the prolonged period of frost which extended late into the spring of 1917, was so noticeable that it attracted the attention of the least observant. In most parts of the British Isles the diminution of resident species was most marked during the following summer, and in some cases the destruction was so great as to result in local extermination. That the same conditions also affected some of our winter visitors from the Continent has been proved by the extreme scarcity of the Fieldfare (*Turdus pilaris*) during the winter of 1917-1918. (Cf. *antea*, pp. 231 and 261; and p. 280.) As the actual severity of the weather was no greater than that experienced frequently in many parts of the Continent, which does not result in any noticeable destruction of Bird-life, it seems at first sight difficult to account for the difference in the effects, but it must be remembered that many of the species which suffered most are at any rate partially migratory, and that there are almost always some parts of the British Islands where even in the depth of winter, comparatively mild and open weather prevails, such as the Devonian peninsula and the south of Ireland. In the spring of 1917, a great part of Ireland and most of the Cornish coast, which for generations have furnished a refuge to frozen-out immigrants, were experiencing the most severe climatic conditions of which we have definite records, as may be seen from a comparison of the articles by Messrs. C. J. Carroll and H. M. Wallis (Cf. *antea*, p. 26 and X., pp. 267-8) and the weakened and already half-starved visitors, were quite unable to adventure upon a Channel crossing and perished by thousands.

Probably in almost all cases it was not the actual cold which caused the mortality, but the long duration of the frost, which held the earth ironbound even to the very edge of the sea, and was accompanied by snow, which buried

the scanty supplies of food still available and so caused death by starvation. In particular, the "glazed frosts," which covered even the tree trunks with a thin film of ice, probably proved specially fatal to the Creepers, Tits and other tree-haunting species.

That somewhat similar results have followed lengthened periods of frost and snow is shown from the somewhat scanty, but still significant, references to previous hard winters.

Even as far back as 1408 Walsingham, in his *Historia Anglicana*, states that the winter was very severe, lasting through December, January, February and March, whence it came to pass that almost all the birds of the Thrush and Blackbird kind perished. "Unde contigit pene cunctas volucres de genere mavisorum vel merularum fame frigoreque perire." For this reference we have to thank Professor Oman.

The winter of 1838 is also noted for its severity and is said to have been fatal to many birds, and the extremely severe weather which lasted from the end of January intermittently to almost the end of March, 1855 (the memorable Crimean winter), proved not only destructive to residents, but also caused great mortality among the earlier summer visitors. In the case of such species as the Swallow and the Martins, this may have been directly attributable to cold, but it must be remembered that the same conditions would also cause the disappearance of insect life. Some interesting details of the effects of this winter may be found in an article by C. Collingwood entitled, "Calendar of Natural Phenomena observed at Purley Park, Berks" (*Zool.* 1855, pp. 4725-38). For its effects on the *Hirundinidae* in the Midland counties see J. J. Briggs (*t.c.* pp. 4808-9).

The winter of 1860 was also severe, but not prolonged, and that of 1878-79 was remarkable for extreme cold from December 8th to 25th, and again for a week in January, 1878.

The winter of 1880-81 holds the record for intensity, the cold spell beginning January 9th-10th and ending January 26th. Several references to its effect on animal life may be found in the *Zoologist*, 1881, pp. 196-7, 212 and 255 (Ireland).

Fuller details are obtainable in the case of the great frost of 1890-91, which chiefly affected the south-eastern counties of England. This is very thoroughly treated in an article by A. W. Preston in the *Trans. Norf. and Norw. Nat. Soc.*, V., pp. 191-195. The lowest mean temperature during this period, which extended from November 25th, 1890, to January 22nd, 1891 (59 days), was registered in Hertfordshire (28°5'), and for forty consecutive days the ground was covered with

snow, so that it is not surprising to find that the mortality among the birds was terrible. Some interesting notes on the effects in Hampshire will be found in the *Field* for March 14th, 1891. Mr. T. Southwell remarks that, in Norfolk, while the destruction of Thrushes was very great, there was an almost total absence of Redwings and Fieldfares, which had previously passed on southward. Others of our resident species, which seem to have suffered severely, were Kingfishers, Herons, and various species of Gull.

Another very prolonged spell of cold was that which lasted from about January 26th to February 18th, 1895. During this period the average mean temperature was below 32°. The frost lasted till the end of the first week of March, both in Derbyshire and Oxfordshire. In many respects this winter was not unlike 1916-17, and it is unfortunate that we have so little on record of its effects on Bird-life.

In the case of the 1916-17 winter, the first real cold was met with at the end of November, 1916. No serious injury was done till late in 1917. January was cold and wintry, with much snow in many places, the temperature everywhere much below normal. February was very dry, with an unusually severe frost and anticyclonic conditions. The climax of the cold was from February 2nd to 8th, the coldest since 1895 in many places. The only parts unaffected were the south coast of Cornwall, part of west Scotland and the Irish coast-line. In the meteorological returns hundreds of birds were reported as killed at Broadford, co. Clare. From Totland Bay the last of twenty-two consecutive night frosts was reported on February 11th, while at Hampstead a series of forty-one consecutive frosts ended on February 14th. Even at Limerick the ice bore for thirty-three days ending February 18th, and on Dartmoor frost lasted for ninety-one days, the longest period since 1855.

March was also cold and unsettled, with frequent snowfalls. There was no real break in the cold, which was most severe from the 6th to the 10th, especially on the east side of Great Britain.

April was marked by abnormal and persistent cold and frequent snowfalls, followed by drought. In Scotland cold and inclement weather lasted till the 17th or 18th. This April was the coldest for thirty or forty years, and very heavy snowstorms took place in Northumberland and Ireland. Undoubtedly these last two months were the fatal periods for most of our resident birds, already weakened by the long periods of privation in January and February.

As will be seen from the appended list of those who have

collaborated with us in the preparation of this report, our information with regard to the English counties is, with a few exceptions, fairly complete. From Wales we have but few returns, and our reports from Scotland and Ireland are quite insufficient material on which to base any general conclusions.

It is satisfactory to be able to state that although locally some species have altogether disappeared, there is no reason to believe that any of our resident birds has been exterminated. There are several significant records of the re-appearance of species in 1918 in districts from which they were entirely absent in 1917, but it will be several years before some of those birds which suffered most severely can possibly recover themselves, or return to their original status.

In arranging records we have decided, for the sake of convenience, to arrange the records under Counties and to group them in the twelve Watsonian Provinces. These Provinces are, of course, purely arbitrary, and do not coincide with the results obtained by the more natural system of defining the limits of each faunal area by the water-partings, adopted by Messrs. Harvie-Brown and Buckley, for Scotland, but have been adopted for convenience in classifying the records. Where a full report on the status of each resident species has been received the letter (R) follows the name of the recorder.

PROVINCE : I. PENINSULA.—

Cornwall : (Cf. H. M. Wallis, *British Birds*, X., p. 267) ;
 Devon : C. Collier (Culmstock), A. H. Machell Cox
 (Plymouth), W. W. White (Budleigh Salterton), G.
 Tickner (Tiverton) ; Somerset : D. J. Wigglesworth
 (Mendip, etc.), S. Lewis (Mid and East), R. H. Read
 (S. Cadbury).

II. CHANNEL.—

Wilts : Rev. D. P. Harrison (Swindon) ; Dorset : W. J.
 Ashford (Poole), Dr. F. Penrose (Swanage R), Rev. F. L.
 Blathwayt (Osmond Melbury) ; Hants : Miss B. E.
 Stilwell (Yateley), R. E. Coles (New Forest), F. E. Blagg
 (Petersfield), Dr. J. H. Salter (Ringwood), J. M. Goodall
 (I. of Wight) ; Sussex : H. G. Attlee (Hastings), Col.
 H. W. Feilden (Burwash), R. Ware (Frant).

III. THAMES.—

Kent : H. G. Alexander (Tonbridge R), Miss M. Klein-
 wort (Maidstone), E. G. B. Meade Waldo (Hever), Col. R.
 H. Rattray (Tonbridge R), P. F. Bunyard (Cf. *Bull. B.O.C.*
XXXVIII., p. 20 R) ; Surrey : J. B. Crosfield (Reigate R),
 London N. H. Soc. (per Hon. Sec.) C. W. Colthrup

(Dulwich), P. F. Bunyard (*loc. cit.*); Essex: Ornith. Committee London N. H. Soc. (per A. Brown, Hon. Sec.), J. H. Owen (Felstead), C. D. Borrer (Romford); Middlesex: Orn. Committee London N. H. Soc. (per A. Brown, Hon. Sec.), R. H. Read (Brent Valley); Herts: Dr. E. Hartert (Tring), C. Oldham (Tring), W. Rowan (St. Albans); Berks: J. L. Hawkins (Reading), Rev. F. C. R. Jourdain (Abingdon R), N. H. Joy (Bradfield), H. Noble (Henley), G. Tickner (North-west), H. M. Wallis (Reading); Oxon.; O. V. Aplin (Bloxham), Rev. E. Peake (Oxford), G. Tickner (Oxford); Bucks: (see under Herts).

IV. OUSE.—

Suffolk: Commodore Lynes (South); Norfolk: J. H. Gurney (*antea*, p. 246), Dr. B. B. Riviere (Norwich), H. M. Upcher (Sheringham); Cambs: H. W. Holben (Cambridge); Beds: G. T. Atchison (Bedford); Hunts: (nil); Northants: R. P. Greg and J. G. Maynard (Rugby).

V. SEVERN.—

Glos. and Monmouth: (nil); Worcester: T. J. Beeston and G. Tomkinson (Kidderminster); Warwick: H. G. Alexander (Warwick); Staffs: W. Davies (Stourbridge), E. de Hamel (Tamworth), T. Smith (Cheadle) and J. R. B. Masefield (Cheadle); Salop: H. E. Forrest and A. Mayall (Shrewsbury), Miss F. Pitt (South), J. Steele Elliott (Dowles), J. H. Owen (Oswestry).

VI. SOUTH WALES.—

Radnor: O. R. Owen (Knighton). (No other returns.)

VII. NORTH WALES.—

Merioneth: G. H. Caton Haigh and F. C. Rawlings (Barmouth). (No other returns.)

VIII. TRENT.—

Lincs: Rev. A. Ellison (Althorpe), J. L. Allison (Louth), G. H. Caton Haigh (N. Cotes); Leicester: H. G. Attlee (Leicester); Rutland: (nil); Notts: Miss E. Mellish (Worksop), C. E. Pearson (Lowdham), J. Whitaker (Rainworth); Derby: H. G. Attlee (Matlock and Buxton), N. H. Fitzherbert (Somersal), E. Grindey (Ashburne), E. Peat (Baslow), F. Taylor (Buxton).

IX. MERSEY.—

Cheshire: S. G. Cummings (Chester), R. P. Greg (Styal); E. W. Hendy (Alderley Edge), O. J. Wilkinson (N. West); Lancs: H. Massey (Didsbury); Dr. H. J. Moon (Fylde), C. K. Parker (Rossendale), C. K. Stobart (Parbold), H. W. Robinson (Lancaster).

X. HUMBER.—

Yorks : H. G. Alexander (Askrigg), Major W. B. Arundel (Pontefract), E. P. Butterfield (Wilsden), W. Greaves (Hebden Bridge).

XI TYNE.—

Durham (nil) ; Northumberland : A. Chapman (Wark-on-Tyne). Mrs. Hodgkin (Stocksfield), J. S. T. Walton (Stocksfield).

XII. LAKELAND.—

Westmorland : A. Astley (Ambleside), Miss M. Garnett (Windermere) ; Cumberland : G. Bolam (Alston), T. L. Johnston (Carlisle).

SCOTLAND.—

Ayr : Miss Blyth ; Lanark : J. Bartholomew (Glasgow) ; Kirkcudbright : Miss Pershouse ; Edinburgh : Rev. W. Serle ; Ross : W. R. O. Grant (Fortrose).

IRELAND.—

C. J. Carroll (*antea*, p. 26), Mrs. Rait Kerr (Co. Meath), C. B. Moffat (Wexford R), R. F. Rutledge (Mayo).

From the coast of North France one report has also been received ; and we have to thank Professor A. A. Rambaut and Mr. Bellamy for their help in the Metereological section of this report.

(*To be continued.*)