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The
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The Journal of
**THE LONDON NATURAL
HISTORY SOCIETY**

FOR THE YEAR
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The London Naturalist, 1942.

The London Naturalist and its supplement *The London Bird Report* are published annually, and provide a record of the activities of the London Natural History Society and its members. Contributions are welcomed from members of the Society on any natural history subject, and, if space permits, from non-members on any natural history subject concerning the London Area. The London Area, as defined by the Society, is comprised within a radius of 20 miles from St Paul's Cathedral, and includes the whole of Middlesex and London, and parts of Bucks, Essex, Herts, Kent and Surrey. A map of the area is obtainable from the Librarian, price 1d. All papers intended for publication in *The London Naturalist* and *The London Bird Report* should be submitted in the first instance to the Secretary of the appropriate Section (Archaeology, Botany, Ecology, Entomology, Geology, Ornithology, Plant Galls, Ramblers), and not directly to the Editor. Other inquiries may be sent to the Editor at 39 South Grove House, Highgate, N.6.

Contents.

	PAGE
Obituary: Flying Officer J. E. Sulman,	2
Nature Reserves,	2
The Starling Roosts of the London Area—R. S. R. Fitter,	3
Plant Gall Records for 1942—H. J. Burkill,	24
Absent Friends,	23
Lepidoptera Notes, 1942—H. J. Burkill,	24
Herbs Needed for Drug-Making,	27
The Survey of Bookham Common:—	
Some Preliminary Observations on the Base Map and Topography—	
C. P. Castell,	28
Index to Place Names on Bookham Common,	30
Bookham Common: A Short History—John H. Harvey,	32
The Survey of Limpsfield Common:—	
Rabbits on Limpsfield Common—J. L. Harrison,	40
Grasshoppers on Limpsfield Common—J. L. Harrison,	41
The Epping Forest Survey,	43
Official Reports for 1942,	45
Statement of Accounts, 1942,	48
List of Members,	49

LIST OF MAPS.

	Opposite page
1. The Starling Roosts of Inner London,	7
2. The Starling Roosts of the London Area,	14
3. Bookham Common: Ecological Survey Base Map,	28
4. The Inclosures of Bookham Common,	32
5. Rabbit Holes on Limpsfield Common,	40
6. The Cuckoo Pits Survey Area,	44

Obituary.

Flying Officer J. E. Sulman.

JOHN EDWARD SULMAN was born on November 12, 1916, and educated at Highgate School. Even as a small boy he was always deeply interested in natural history, and spent much of his time studying it, especially bird life. He joined the Society in 1933, becoming a member of the Ornithological Section, and a valued contributor to the Sectional records and the *London Bird Report*. In 1934 he was awarded a prize in the Public Schools Essay Competition of the Royal Society for the Protection of Birds for an essay on "Wings and their Uses," which he read before the Ornithological Section of the L.N.H.S. in February 1936. In December 1938 he joined the R.A.F.V.R., and in June 1940 won his wings and was commissioned as a fighter pilot. He fought in the Battle of Britain in August and September 1940, and was promoted Flying Officer in June 1941. He was killed in action in the Middle East while defending Tobruk in November 1941, and his body is buried two miles from El Gubi, Cyrenaica. Flying Officer Sulman had the sad distinction of being the first active member of the London Natural History Society to be killed in action in this war, and will be greatly missed by his friends in the Society.

Nature Reserves.

THE Nature Reserves Investigation Committee of the Conference on Nature Preservation in Post-War Reconstruction has asked this Society to co-operate in the work of recommending to the Ministry of Town and Country Planning what areas should be preserved as nature reserves. Accordingly, the Council has set up a sub-committee, consisting of Messrs L. J. Tremayne (Chairman), S. Austin, C. P. Castell and R. S. R. Fitter (Secretary), to deal with the matter. The Sub-Committee confidently appeals to all members of the Society for help and suggestions in this most important task. Our Society exists to further the study of natural history in the London area, and it is clearly of the first importance that the areas where we can carry out this study should be safeguarded. The Chingford Branch has agreed to co-operate in respect of the Essex part of the Society's area. Information is wanted (a) of existing nature reserves and sanctuaries within the Society's area (a radius of 20 miles from St Paul's Cathedral), and (b) of places in the same area which ought to be preserved as nature reserves, either because they contain rare species, or because they contain an important habitat that is liable to suffer from drainage or cultivation, or because they are of value from an educational point of view. Please send this information, and any offers of help with the sifting and collation of the data and surveying of the areas, to the Secretary of the Sub-Committee, R. S. R. Fitter, 39 South Grove House, Highgate, N.6.

The Starling Roosts of the London Area.

By R. S. R. FITTER, F.Z.S., M.B.O.U.

I. INTRODUCTION.

THE aim of this paper is to describe and map all starling* roosts and fly-lines in the London area, to show, that is to say, where all the starlings that feed in the London area by day roost at night, and where all the starlings that roost in the London area feed in the day-time. The London area is defined as the area lying within a 20-mile radius of St Paul's Cathedral, the area studied by the London Natural History Society, and includes the whole of London and Middlesex, and parts of Bucks, Essex, Herts, Kent, and Surrey. All known roosts, both past and present, within this area are listed, but roosts outside it are mentioned only in so far as they are fed by fly-lines from within the area.

Most of the records available are for the period since 1929, but I am most indebted to Mr E. M. Nicholson, a pioneer in the study of London's starlings, for permission to make use of a survey of Inner London roosts and fly-lines he did in 1925-26, and also for permission to draw on his summary of the results for the London area of the Marples survey of 1932-33. I am also most grateful for permission to use the original material collected by Mr B. J. Marples in his national survey of starling roosts in 1932-33, which is now deposited at the Edward Grey Institute of Field Ornithology at Oxford, and for permission to make use of a large and valuable series of notes on starling fly-lines in the Harrow district in 1933-40, made by Mr G. H. Locket and boys of Harrow School. The records of the London Natural History Society have been, as always, a most valuable quarry of facts, and my especial thanks are due to all those individual members of the Society and others who have answered my queries and supplied me with information.

The most notable feature of the roosting habits of London starlings is the fact that they now fly into the centre of the city to roost in the evenings instead of out into the country, as they did in the 19th century. Let us first examine the origin of this habit.

II. THE ORIGIN OF INNER LONDON STARLING ROOSTS.

The earliest reference to starlings roosting in Inner London in large numbers appears to be in a letter to *The Times* from Sir T. D. Pigott on Nov. 13, 1894 (25), in which he drew attention to the fact that starlings were coming into London to roost in the trees of Duck Island in St James's Park. This was evidently a very recently formed habit, since the second edition of Pigott's "London Birds and Other Sketches," published in 1892 (26), made no reference to it. Kirke Swann's little book on London birds (29), which appeared in 1893, also made no men-

**Sturnus v. vulgaris* L.

tion of starlings roosting in London. Further, Tristram-Valentine (30), writing in 1888, described the starling as a common breeding bird in the London parks, adding that though they were to be found in London throughout the year, the main body of starlings left town at the end of the summer. It is a curious coincidence that the severe winter of 1894-95, which "is generally accepted as marking the beginning of the regular invasion" of London by gulls (28), also apparently marked the beginning of the regular invasion of London by starlings.

When Hudson (10) wrote in 1898, the roosting of starlings in several London parks was already an established practice, and the number of birds, at least in 1897 compared with 1896, was increasing. At that time the birds showed a distinct preference for the islands in the ornamental lakes in the parks, roosting on such islands in Regent's Park, Battersea Park, Hyde Park and Buckingham Palace grounds, as well as in St James's Park. Subsequent records have added the islands in Victoria Park and at Walthamstow Reservoirs to this list (13). In the late 90's, however, most of the starlings left their London roosts at the beginning of October, and spent the winter at roosts in the country.

Exactly when starlings began to roost in large numbers on buildings in London does not seem to have been recorded. According to Macpherson (16), "the roosting on buildings was a gradual habit developed in the early years of the present century, and possibly started by the steps taken to drive the birds away when they became too numerous in St James's Park." Frank Finn (3) records in 1923 that when starlings first began to roost on the Nelson Column, they arrived only in ones or twos, instead of in flocks as at present, which seems to confirm the gradual development of the habit.

We have evidence that both the British Museum and St Paul's Cathedral began to be used as roosts during the war of 1914-18, the British Museum probably in 1917 (23). Parker is the first reliable observer to have actually recorded starlings roosting on any building in London, on the British Museum in November 1919, and on St Paul's in January 1920 (22, 23). By 1922 Harding could write that St James's Park was "well-nigh forsaken" by starlings, that "nowadays starlings roost in London wherever there are a few trees," that the Temple and the Savoy Churchyard were the most crowded roosts, and that the National Gallery and the Nelson Column were also used (8). In 1923 Low (14) recorded that none of the starlings which came into the island in the Serpentine at dusk stayed to roost, all flying off eastwards, presumably to the Trafalgar Square area. By 1925-26, when Nicholson carried out a detailed survey of London starling roosts and fly-lines (21a), all the principal existing roosts on buildings were being used.

Thus, some time between 1898 and 1917-19, the starlings roosting in trees on the islands in the parks, and in some cases, according to Macpherson (16), already in "various squares and open spaces," instead of migrating to country roosts in the autumn, when the trees lost their leaves and became unsuitable, seem to have adapted themselves to roosting on the ledges of buildings in the neighbourhood of their urban tree-roosts, and especially on the acanthus leaves of Corinthian capitals.

It seems at least possible that this transition first took place from Duck Island in St James's Park to the buildings surrounding Trafalgar Square, for at this point an existing building-roost is nearer a former island-roost than at any other. The function of the island roosts, in so far as they continued to be used, then became to act as gathering-places for the starlings prior to their actually taking up their quarters for the night.

III. INNER LONDON STARLING ROOSTS AT PRESENT.

There are at present five main types of starling roosts in inner London:

(a) Autumn roosts, mostly on islands in parks outside the central built-up area, where starlings began the habit of roosting in Inner London, and which are now only used, if at all, as gathering-places for starlings proceeding further into London; e.g., the islands in the Serpentine and the Regent's Park lake.

(b) Autumn roosts in trees in squares and other open spaces, which appear to be mostly forsaken for building-roosts when the leaves fall in October-November; e.g., Duck Island in St James's Park, Leicester Square.

(c) Roosts on buildings, usually on ledges or the acanthus leaves of Corinthian capitals, which appear to be used throughout the roosting season (June-March); e.g., the National Gallery, the Royal Exchange.

(d) Small roosts in such places as church steeples, away from the central area, probably only used by local starlings; e.g., Albert Bridge, Westminster City School.

(e) Summer roosts used by non-breeding birds during the breeding season; the only roosts of this type appear to be Duck Island and some of the buildings round Trafalgar Square. Birds were flying into London over Highgate Cemetery right through the breeding season in 1942 and 1943 (5).

A list of all the starling roosts traced in the built-up area of London up to the winter of 1941-42, divided into the above main types, will be found in Section IV, and the roosts are mapped in Fig. 1 on page 6.

A glance at the map shows that the great majority of the roosts in the (b) and (c) categories, that is tree-roosts and building-roosts, are situated in two small areas in Central London. One is centred on Charing Cross, and extends north to the junction of Shaftesbury Avenue and High Holborn, east to Somerset House, south to Parliament Street and west to Piccadilly Circus. The other lies in the heart of the City, extending north to Finsbury Circus, east to the Tower, south across the river to Guy's Hospital and west to St Paul's Cathedral and St Sepulchre's, Newgate Street. A secondary area is to be found along the Marylebone Road between the Great Central Hotel and St Marylebone Parish Church, and extends south to the Marble Arch.

Since, as Nicholson (21a) has shown, there is a constant interchange of birds between these two main roosting areas, birds flying in from the east passing over the City to the Charing Cross area and *vice versa*,

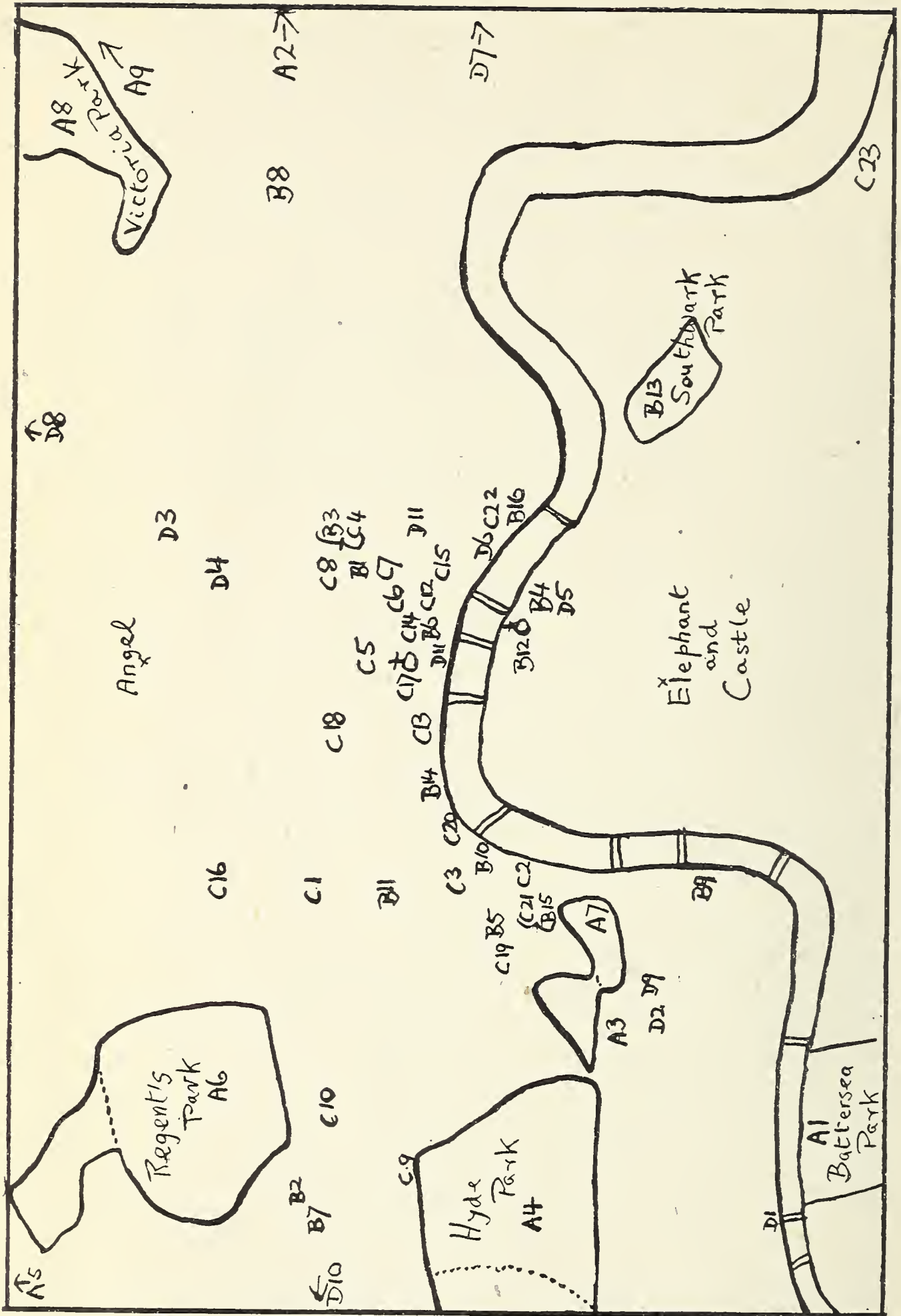


Fig. 1. STARLING ROOSTS OF INNER LONDON.

For Key to Roosts see pp. 10-13.

practically the whole of the north bank of the river between Westminster and the Tower must be regarded as one gigantic starling roost, and many more buildings have probably been used from time to time than are listed here. In the main, however, the City group is fed from the suburbs in the north-eastern and south-eastern quadrants, while the Charing Cross area is resorted to nightly by birds coming from the two western quadrants.

Remarkably little field work has hitherto been done on London starlings, though there must be hundreds of ornithologists living in London. Nicholson carried out two surveys, a private one in 1925-26 (21a) and another in 1932-33 (21) in connection with Marples's nation-wide survey (18). Neither of these has ever been published.

The 1925-26 survey (21a) established the existence of a number of fly-lines, such as that over Primrose Hill to the British Museum roost, and one from Finsbury Park to St Paul's. It also showed that only certain areas in the inner suburbs were frequented by starlings during the day-time. The slum areas of the East End and the mansion areas of South Kensington, Mayfair and Bayswater were found to be devoid of starlings, whereas districts with larger gardens than the slums and smaller houses than Mayfair, such as Clissold Park, Swiss Cottage and Barnes, provided feeding-grounds for them. On the basis of his 1925-26 investigations, Nicholson was led to divide "Starling-London" into three zones: an outer zone, where they remained continually, surrounding an inner zone where they were found by day and not by night, and in the centre a core where they roosted in large numbers but hardly any spent the day.

These three zones still exist, though not, of course, with any precise boundaries. Even in the heart of London, in St James's Park, up to 50 starlings feed every day in the winter, and a few starlings seem to be regular inhabitants of Bloomsbury. Thirteen starlings, for example, were feeding on the turf in Ridgmount Gardens, Bloomsbury, on October 11, 1940 (5). In the middle zone also there are a number of small local roosts, such as those in the City Road and the Stoke Newington Road, which show that not all the starlings in this zone fly to Inner London in the evenings. Probably the boundaries of these zones fluctuate from year to year.

The 1932-33 survey (21) summarised most of what is known about the extent of the foraging area of the Inner London starling roosts.

The London starling roosts north of the Thames have a single more or less defined foraging area. This area includes hardly any of S.E. London, even immediately south of the river, except for odd birds. It does include most of S.W. London, although the day population of Battersea Park, and Clapham, Tooting Bec and Wandsworth Commons combined was only about 50 or less during January 1933 (J.H.W.), and the number coming into central London either from this area or from beyond it is evidently very small (J.H.W., E.M.N.). Fairly large numbers come in from the Wimbledon-New-Malden-Richmond-Park-Richmond-Kew-Gardens-Barnes area, the farthest proved feeding grounds in this direction being all within nine miles of Charing Cross.

North of the Thames they come in from Hounslow, or perhaps a little farther. Continuing north, the boundary of the London foraging parties seems to run within the Wembley-Kingsbury-Green-Mill-Hill line. This boundary seems to

have remained fairly stable since Harrisson sketched it in 1929-30 (9). A substantial number come in over Hampstead (H.F.W.) from towards the Welsh Harp, while there is a strong line over Ken Wood from Finchley way (E.M.N.).

All the birds so far discussed come in by fly-lines gradually converging over Battersea Park halting place and Victoria (J.H.W., C.W., C.L.C., E.P.C., E.M.N.), or by Kensington and Hyde Park (G.C.L., W.S.) or by Regent's Park and Kentish Town (A.T., E.M.N.) towards the West End group of roosts round Charing Cross. East from Ken Wood appears to be the point where the City group of roosts tends to become the objective, but as on reaching either group a large proportion of birds continue on opposite lines to sleep in the other group, the two groups cannot properly be separated. A small number only come over Alexandra Palace on the line for Trafalgar Square, six miles away (E.M.N.). Farther east exact information about the boundary is lacking, but it runs well on the London side of Chingford, which is only eight miles from St Paul's (B.T.W.), and of Dagenham (E.M.N.). Some come in by Islington (C.W.) and Mile End Road (H.B.), but observation in the City shows that practically none come in to the roosts north of the river from anywhere between E. and S.W., going round clockwise. At St Paul's on November 26, 1932, 80-90 per cent. came in from the northern half of the field of vision and 50-60 per cent. from between N.E. and N.W. (E.M.N.).

A number of observations on rate of flow show that very small numbers pass most points five miles or more from Charing Cross. At Hounslow East 25 birds in three parties were noted on January 1, 1933 (E.M.N.); at Kew Gardens less than 40 in five or six parties on December 31, 1932 (E.M.N.); at Wimbledon Common about five per minute for at least half an hour, which only gives 150 birds seven miles out; at Barnes Common eight per minute for 15 minutes; Wandsworth Common one per minute, Clapham Common 36 in 30 minutes (all these four observations in early January 1933, J.H.W.). Birds leaving or crossing Richmond Park only number 30-40 (C.L.C.). The strongest fly-line recorded two miles or more from the roost was in Upper Street, Islington, where C.W. counted 904 birds over in 15 minutes on December 19, 1932.

This summary plainly shows how exaggerated is the common idea of the absolute and relative magnitude of the central London starling roosts. Although several roosts have probably not been investigated, the total population of roosts in London north of the Thames probably does not normally much exceed 15,000 or 20,000 at a generous estimate. In fact if there were 20,000, and the ample allowance were made of 5000 day population within the five-mile radius, which is mostly built up and unsuitable for foraging, then the number passing in and out over every half-mile of the 31.4 mile circumference at five miles out should average about 238 birds. In fact this figure is nearer the maximum than the average at that distance, which is not unnatural, seeing that the distance from the roosts to the edge of the foraging area varies between half a mile and eleven miles, with a probable average of less than six miles.

There are remarkably few starlings in the foraging area for roosts south of the Thames. The only strong line discovered was to S.S.E., about 50 passing over the west end of Westhorne Avenue, Eltham Green, in seven minutes on January 6, 1933 (E.M.N.). The farthest out point found was Eltham, six miles from the Southwark Park roost. The maximum possible extent of this southern area appears to be within the Charlton-Eltham-Sydenham-Brixton-Vauxhall line. There is no reason to suppose that it can include more than 5000 birds at the outside, and there may be as few as 1000, although several minor roosts no doubt remain to be located.

Comparatively little information has come to hand since 1933. Parmenter (13) counted 897 starlings in less than an hour flying towards the West End between Edgware Road and Kensington Gardens in Sept. 1929. Hale (7) traced a fly-line from Hendon sewage farm to Trafalgar Square in 1933. Parrinder (13) saw a small flock flying S. from Southgate in June 1941. Mann (17) saw many small parties flying over

Edmonton sewage farm in the Lea Valley towards the City in Sept. 1934, while at the same time a flock of many hundreds rose and flew in the opposite direction, showing this to be on the border between the middle and outer zones. Boardman (13) saw about 200 flying south over Hackney in Sept. 1929. Parmenter (13) recorded a fly-line to the N.N.W. at Sydenham in Aug. 1928. Hollom (13) traced the fly-line into London along the main Southern Railway line from Waterloo out as far as a point half-way between Earlsfield and Wimbledon in March 1933. White (13) recorded regular London-ward flights over Southall of several thousand birds in the winters of 1935-36 and 1936-37, and of smaller numbers in 1941.

Bearing in mind, then, that it is a line that probably fluctuates from year to year, and that there appears to be an intermediate zone where some birds fly towards and some away from London, the boundary between the second and third zones of Starling-London, between the area where the starlings fly into London to roost and the area where they fly away from the city every evening, roughly corresponds with that of the heavily built-up area. Beginning in Kent, it appears to run approximately from Charlton to Eltham and Sydenham (though Catford and Lewisham starlings were flying S.E. in the evenings in 1932), then through Streatham and Tooting to Wimbledon and Richmond Park. North of the river the boundary seems to run through Hounslow, Southall, Harrow, Hendon, Mill Hill, Southgate and Edmonton, but it is noteworthy that from nearly all these places there are also records of starlings flying away from London in the evenings, and there is evidence that the starlings of Hanger Hill district, well within this boundary were roosting away from London early in 1939. In Essex, information is lacking, excepting that at Chingford, Woodford Green and Dagenham the starlings fly away from London. Hackney Marshes appears to be one of the borderline areas. It is noteworthy that hardly any starlings roosting in London come from further out than 12 miles from St Paul's (see Fig. 2 opposite p. 14).

One of the most remarkable features of the 1932-33 survey was the very small degree of change since 1925-26, except for the abandonment of the British Museum roost, especially since the whole system was of such recent origin. So far as can be ascertained, the position in 1941-42 is substantially the same as in 1932-33. The boundaries established some time between 1919 and 1925 appear to be still relatively stable after a lapse of two decades, which suggests that the factors leading to their establishment are also relatively unchanged.

Perhaps the most interesting outcome of Nicholson's first survey (21) was his discovery that the starlings that roost in London are not immigrants from the Continent that spend all day feeding in large flocks in the country and fly in together to roost, but the ordinary resident starling population of the suburbs, which, as all over Britain, prefers a communal roost in winter. He describes how the parties that fly into London every evening collect, first of all by single birds leaving their day-time feeding grounds for a local rendezvous, where they often halt

while others join them, and eventually continue their journey, either in one large flock, or in several flocks leaving one after the other.

“It was particularly interesting to observe the behaviour of starlings in Kensington Gardens towards roosting-time. In the late afternoon they mounted to the crowns of the trees and sang unceasingly to themselves or to each other. One by one they became impatient, and took wing towards the Long Water, where on the fringe of trees they used to halt to form loquacious gatherings in the upper branches. The babble of their conversation attracted many passing birds to descend and join them. By this process its volume rapidly swelled, casting an irresistible spell upon all the starlings within hearing. Nothing so fascinates a starling as the sound of other starlings; the gathering flock exercised over a spreading radius a kind of magnetism or centripetal attraction, till all the solo performers had come into it. The largest of these assemblies was in the trees between the Peter Pan statue and Temple Lodge. When it had attained a respectable size, parties began to break off from it and fly over the bridge and down the Serpentine, till the departures exceeded the fresh arrivals, and the main flock, taking wing in a body, ascended towards Hyde Park Corner.”

IV. LIST OF STARLING ROOSTS IN INNER LONDON.

A. ISLAND ROOSTS.

1. *Battersea Park* (see also D. 1): in 1896-97 the most important London roost, used only June-Oct. (10); in 1926 used as a gathering-place only (21a).
2. *Bromley-by-Bow Gas Works*: c. 10,000 birds roosting in trees and on gas-holders, Sept.-Oct. 1937, coming in from N.E. (R.P.D., 13); this appears to be a roost of the A category, which is still used as such in the autumn.
3. *Buckingham Palace Grounds* (see also D. 2, D. 9): roost in 1896-97, June-Oct. (10); no record since.
4. *Hyde Park*: roost on island in Serpentine, 1896-97, June-Oct. (10); by 1923 used only as a gathering-place for roosts further E. (14); island in Serpentine and trees round the Dell still used as gathering-places, 1928 (15).
5. *Ken Wood*: said to have been occupied Oct.-Mar. 1928-32, and perhaps earlier (J.C., 21), but no trace in Nov. 1932 (E.M.N., 21); apparently a roost, Jan. 1936, and small numbers flying in from W., May 1936, but no evidence of a roost in 1941-42—Highgate starlings fly into London (5).
6. *Regent's Park* (see also B. 2, B. 7, C. 10): roost on island in lake, used only June-Oct. 1896-97 (10); still used in 1911—on a stormy night in 1906 large numbers were washed to the ground and drowned by heavy and continuous rain, 93 being found dead (31); used as a gathering-place only by 1926 (21a); apparently still used as a gathering-place for roosts further S., Dec. 1929 (M.R., 13) and Dec. 1939 (5); in the summers (June-Aug.) of 1940 and 1941 the islands and surrounding trees were certainly used as gathering grounds, but whether the birds roosted there or flew on to Central London was not certain (H.M.R.K., 13; 5); in winter 1941-2 they were using these trees as a temporary resting place only, before flying on in a S.E. direction (E.C.W., 13).
7. *St James's Park* (see also B. 15, C. 2, C. 11): roost first noted in Nov. 1894, when c. 1000 estimated coming to Duck Island to roost (25); by 1922 the Park was described as “for some reason now well-nigh forsaken” by roosting starlings (8); in 1930 hundreds were roosting on Duck Is. even in mid-May, young birds being present by mid-June (2); in 1932 stated to be used in autumn, spring, and especially summer, with several thousand present in May and June (21); in 1933 roosting was recorded on Duck Is. throughout the year, with 8000 in the first week of May and numbers increasing Aug.-Nov., when many moved to Trafalgar Square (2); Duck Is. was occupied throughout the winter of 1933-34, but not in the following winter or subsequently (C.S.B., 13).

8. *Victoria Park*: large flocks arriving in trees round women's bathing lake in late afternoon, Jan. 1927; park-keeper reports they roost on island all the winter (K.T., 13).
9. *Walthamstow Reservoirs*: in some years trees on islands used as roosts (1924) (R.W.P., 13); but not for past ten years, 1938 (R.W.P., 13).

B. TREE ROOSTS.

1. *Basinghall St., E.C.2* (see also C. 6, C. 7): small roost on tree behind Guildhall, autumn 1938 (J.H.G.P., 13); noted in Nov. 1939 (5).
2. *Dorset Sq., N.W.1* (see also A. 6, B. 7, C. 10): roost in trees, 1937 (J.M.M.F., 13), but apparently not in Sept. 1938 (5).
3. *Finsbury Circus* (see also C. 4, C. 8): roost in trees, appeared Oct. 1932 and stayed about a month (A.C.P., 21); some roosting in trees, Sept. 1940 (5).
4. *Guy's Hospital* (see also B. 12, D. 5): some hundreds roosting in trees, Aug.-Sept. 1932 (R.H., 21).
5. *Leicester Square* (see also B. 15, C. 2, C. 19, C. 21): 25-30 in trees, 1932 (E.M.N., 21); apparently roosting in trees, Aug. and Oct. 1938 (5).
6. *Mansion House Station* (see also D. 11): small roost in tree in disused churchyard nearby, Oct. 1936 (5).
7. *Marylebone Road* (see also A. 6, B. 2, C. 10): several hundreds gathering in trees W. of Great Central Hotel, and some coming in from N.W., Feb. 1939 (5).
8. *Mile End Road hospital*: roost in trees, 1932; birds appear early in Sept. since 2-3 years ago (F.C.G., 21):
9. *Millbank*: 100-120 roosting in two planes near Tate Gallery, Oct.-Dec. 1929 (J.E.S.D., 13).
10. *Savoy Churchyard* (see also B. 14, C. 20): in 1922 said to be one of the biggest roosts in London (8); in 1932 occupied early Oct. to Nov. 22 (F.S.R., 21); noted in Sept. 1934 (5).
11. *Shaftesbury Avenue*: assembly, probably gathering rather than roosting, on planes at junction with High Holborn, Sept. 1938, Mar. and Aug. 1939 (5).
12. *Southwark Cathedral* (see also B. 4, D. 5): 60-70 in trees, Apr. 1939 (J.H.G.P., 13).
13. *Southwark Park*: 3-400 roosting in trees, Dec. 1932 (W.D., E.M.N., 21).
14. *Temple Station* (see also B. 10, C. 20): large roost, varying in size from year to year, largest in 1926 (1929, J.E.S.D., 13); large flocks in trees throughout Oct. 1929 had gone by mid-Nov., a few noted again in Oct. 1930 (5); 50-200 fluctuating from one side of the road to the other, Oct. 1932-Feb. 1933 (E.M.N., 21). N.B.—In 1922 a roost at The Temple (? trees or buildings) was described as one of the most crowded in London (8).
15. *Trafalgar Square* (see also A. 7, B. 5, C. 2, C. 19, C. 21): a few roosting in trees, Oct.-Nov. 1938, gone by end Nov. (5).
16. *Tower of London* (see also C. 22, D. 6): occasional roost in trees, Sept.-Nov. for past few years (1932, A.S., 21); a few gathering in trees on Tower Hill, Jan. 1941 (5).

C. BUILDING ROOSTS.

1. *British Museum*: 6-8 began to roost in autumn 1919 (22); one of the two biggest London roosts by 1925-26 (21a); many heard at 4 p.m., Dec. 21, 1929, and some flew off towards Trafalgar Sq. (L.P., 13); deserted since spring of 1931 (E.M.N., 21).
2. *Charing Cross Station* (see also A. 7, B. 5, B. 15, C. 19, C. 21): roost noted on Eleanor Cross since 1933 (E.M.N., 21; 5); more than 400 on May 13, 1936 (E.M.N., 13); none here in Dec. 1941 (5).
3. *Covent Garden*: some roosting on Corinthian capitals of Royal Opera House, Oct. 1940 (5).
4. *Finsbury Circus* (see also B. 3, C. 8): roost on buildings, autumn 1938 (J.H.G.P., 13) and Sept. 1940 (5).

5. *General Post Office, E.C.1*: many heard roosting, Feb. 1930 (L.P., 13): 2-3000 roosting in Nov. 1932 (E.M.N., 21); small numbers in Sept. 1940 (5).
6. *Gresham Street, E.C.2* (see also B. 1, C. 7): a few roosting on Corinthian capitals of building on S. side between Aldermanbury and St Lawrence Jewry, Sept. 1940 (5).
7. *Guildhall* (see also B. 1, C. 6): fairly large roost. 1926 (21a).
8. *London Wall, E.C.2* (see also B. 3, C. 4): some hundreds roosting on buildings in Compton St., Jan. 1933 (P.W.H., 21).
9. *Marble Arch*: roost noted in Sept. 1937 and Sept. 1938 (5).
10. *Marylebone Parish Church* (see also A. 6, B. 2, B. 7): some arriving and settling on tower, Sept. 1939, and a few roosting on feathered capitals, Oct. 1941 (5).
11. *Ministry of Health, Whitehall* (see also A. 7): roost noted on E. front, winter 1938-39 (5); C. S. Bayne reports it has been there since about 1932-33 (*in litt.*).
12. *Royal Exchange* (see also C. 15): roost in 1926 (21a); counts between Mar. 18 and Apr. 17, 1931, ranged from 1181 to 2364 (27); estimated at 500-1000 in Nov. 1932 (E.M.N., 21); roost still there, Sept. 1940 (5). Mansion House also mentioned as a roost, 1941 (23).
13. *St Dunstan-in-the-West*: birds flying in from S. to roost in church tower, Oct. 1940 (5).
14. *St Mary-le-Bow Church*: roost in 1926 (21a).
15. *St Michael's, Cornhill*: roost in 1926 (21a).
16. *St Pancras Station*: unsubstantiated report of roost in 1932-33 (21); definite roost, Sept.-Nov. 1940 (5).
17. *St Paul's Cathedral*: "scores of hundreds" roosting in Jan. 1920, said by a gardener to have begun during 1914-18 (23); packed large roost in Jan. 1922 (R.W.P., 13); estimated at 7000 in Nov. 1932 (E.M.N., 21); still a roost in Nov. 1939 (5).
18. *St Sepulchre's Church, E.C.1*: small numbers roosting, Sept. 1940 (5).
19. *Shaftesbury Avenue* (see also B. 5, B. 15, C. 2, C. 21): occasionally as roost when birds deserted Leicester Sq. in autumn 1936 or 1937 (27); on theatre at Piccadilly end (C. S. Bayne, *in litt.*, 1939).
20. *Somerset House* (see also B. 10, B. 14): no roost in 1926 (21a); roost, Aug. 1935 (5).
21. *Trafalgar Square* (see also A. 7, B. 5, B. 15, C. 2, C. 19): roosting on National Gallery and Nelson Column by 1922 (8); fly-lines from Hyde Park, 1925-26 (21a), from Regent's Park and the British Museum, 1929 (M.R., L.P., 13); counts between March 24 and April 30, 1931, ranged from 1413 to 4625 (27); 1293 on National Gallery, 1163 on St Martin's Church (probably 2500 at peak), Nov. 1932 (E.M.N., W.B.T., 21); Bayne (2) records many moving from St James's Park (A. 7) to Trafalgar Square in Nov. 1933; more than 300 on National Gallery, more than 600 on St Martin's, May 1936 (E.M.N., 13); roosting on Canada House and on the spire as well as in the portico of St Martin's, March 1939 (5); none on any building round Trafalgar Square, except a few in the porch of St Martin's and possibly on the Nelson Column, Dec. 1941 (5).
22. *P.L.A. Building, Tower Hill* (see also B. 16, D. 6): a few heard roosting on the building, which has feathered capitals, Jan. 1941 (5); also in autumn 1941, after bombing (C.A.W., 13).
23. *Deptford*: [in Jan. 1937 starlings were gathering in trees near the Blackheath entrance of Greenwich Park and flying off towards central London; a park worker said that these were going to three roosts in Deptford, at Creek Bridge, the Victualling Yard and the Cattle Market (20); these roosts have never been substantiated by first-hand evidence.]

D. SMALL ROOSTS.

1. *Albert Bridge* (see also A. 1): a few roosting on iron towers of bridge, 1926 (21a)
2. *Buckingham Gate, S.W.1* (see also A. 3, D. 9): some roosting in steeple of Congregational Church, Dec. 1932 (E.M.N., 21).

3. *City Road, E.C.1* (see also D. 4): c. 25 roosting in infirmary and trees at junction with Shepherdess Walk, Jan. 1933 (E.M., 21).
4. *Goswell Road, E.C.1* (see also D. 3): small numbers roosting in steeple of church in Moreland Street, Sept. 1940 (5).
5. *Kipling St. Recreation Ground, S.E.1* (see also B. 4, B. 12): small roost in trees, occasionally used Oct. 1932, but may be only gathering-place (A.H.C., 21).
6. *St Dunstan-in-the-East* (see also B. 16, C. 22): minor roost, 1926 (21a).
7. *Silvertown*: St Mark's Church said to be used as roost throughout year, 1932 (D.S., 21).
8. *Stoke Newington Road*: several roosting in church spire, Nov. 1929 (L.P., 13).
9. *Westminster City School, Palace St., S.W.1* (see also A. 3, D. 2): probably not more than 20 roosting, Dec. 1932 (E.M.N., 21).
10. *Harrow Road*: small roost in steeple at corner of Westbourne Park Crescent, Jan. 1941 (5).
11. *St Swithin's Lane* (see also B. 6): three flew in to roost on a church tower on the evening of July 8, 1942 (5).

V. STARLING ROOSTS AND FLY-LINES IN THE COUNTRY ROUND LONDON.

The converse of the boundary described in Section III of the area within which starlings fly into London to roost is the boundary of the area in which they are known to fly away from the city in the evenings. Going clockwise from the Thames estuary, this line appears to run through the following places: in Kent, Woolwich, the Crays, Lewis-ham, Catford; Sydenham, Elmers End; in Surrey, Thornton Heath, Mitcham Common, Morden, New Malden, Richmond Park; in Middlesex and Hertfordshire, Hampton Court, Southall, Hanger Hill, Harrow, Arkley, Cheshunt, Edmonton, Hackney Marshes; in Essex, Chingford, Woodford Green, Dagenham. This boundary will be found marked on the map in Fig. 2 opposite p. 14, and, as has already been noted, it runs for the most part within the 12-mile circle from St Paul's. The most striking fact emerging from Fig. 2 is that whereas in the south and west there are many roosts within 20 miles of London, in the north and east most of the roosts for starlings flying away from London are well over 20 miles from St Paul's.

In discussing the roosts and fly-lines in the country round London, it will be convenient to keep to this clockwise direction, and to divide the area up into eight segments:

- (i) Kent, east of a line drawn from Bromley to Sevenoaks.
- (ii) Kent, west of a line drawn from Bromley to Sevenoaks, and Surrey, east of a line drawn from Croydon to Godstone.
- (iii) Surrey, west of a line drawn from Croydon to Godstone.
- (iv) The Thames Valley from Kingston to Staines.
- (v) West Middlesex, south-west of the Watford By-pass Road (A.5088) and north of the Oxford Road (A.40).
- (vi) South Hertfordshire, between the Watford By-pass Road (A.5088) and the Lea Valley.
- (vii) The Lea and Roding Valleys.
- (viii) South-west Essex.

(i) *Kent, east of the Bromley-Sevenoaks line.*

Five roosts have been recorded either in this area or as being frequented by starlings from this area :

Shorne (4 m. S.S.E. of Gravesend, outside London area) : roost in thick larch plantation, noted in Jan 1930, and contained " a few thousand " in Jan. 1933 (21, R.D.E.); draws birds from within London area at least as far as Dartford and Northfleet, Feb.-Mar. 1933 (E.M.N., 21); a fly-line in this direction was noted over Gravesend in Feb. 1940 (5).

Lullingstone : " used to be " a roost in the Darent Valley between Shoreham and Eynsford Stations (R. Mercer, *in litt.*, 1940); this may have been the destination of the following flocks :

S.S.E. from Swanley Junction, Jan. 1933 (E.M.N., 21).

S. or S.E. from the Crays (E.M.N., 21).

S.S.E. from Catford and Lewisham, 1932 (R.C.H., 13).

S.S.W. from Tilbury Marshes, Essex, Feb. 1933 (B.D.N., 21).

Knockholt Pound : a large roost at the top of Star Hill, 1938 (R.M., 13), may have been the successor of the Lullingstone roost, and the destination of some of the flocks mentioned under that heading, as well as of the following :

S. from Woolwich (L.R.A.G., 21).

W. along the scarp at Kemsing, but also a slight backwash to S.E., Oct. 1939 (5).

Crockenhill : a roost at Wood's fruit farm c. 1917 (A.E.S., 19) may possibly have been the destination of the southbound flocks from Catford, Lewisham, Swanley, Woolwich, and the Crays mentioned under Lullingstone and Knockholt Pound.

Penshurst : a roost near the Station in 1932-33 (E.M.N., 21) was still in use seven years later (R.M., 13); flocks flying S. from Shoreham in Oct. 1929 (L.P., 13) and Nov. 1938 (5) and S.E. from Kemsing in Oct. 1939 (5), may have been heading for it, as may large flocks flying S. from Westerham in the autumn of 1940 (P.A.A., 13).

The only other fly-line recorded in this part of Kent is one N. from Woolwich (L.R.A.G., 21).

(ii) *Kent, west of the Bromley-Sevenoaks line, and Surrey, east of the Croydon-Godstone line.*

Three roosts have been recorded in this area, of which only one appears to be still in use :

Selsdon : autumn and winter roost, also used by a few non-breeding birds in summer, situated at south end of Croham valley in scrub hawthorn, in use certainly 1934-40; birds come in from all points of the compass except between E. and S.; main body comes from Beddington sewage farm (3-5 m. N.W.), but fair numbers also from N.E. and E. (West Wickham 2½ m., Hayes 3½ m., Elmers End sewage farm 3 m., Beckenham 4 m., Sydenham 5½ m.) (G.E.M., 13).

Chelsham : roost at Lunghurst Firs c. 1927, occupied for one winter only (1).

Warlingham : roost at Crewes Lane c. 1912, also occupied for one winter only (1).

The two latter records suggest that starling roosts in this part of the North Downs are apt to be rather shifting ones. Other fly-lines recorded from this area include :

W. from Westerham and Brasted (1200 in 13 minutes), Dec. 1930 (L.P., 13).

S. from Selsdon Bird Sanctuary, Jan. and Mar. 1930 (L.P., 13).

These lines intersect near Marden Park.

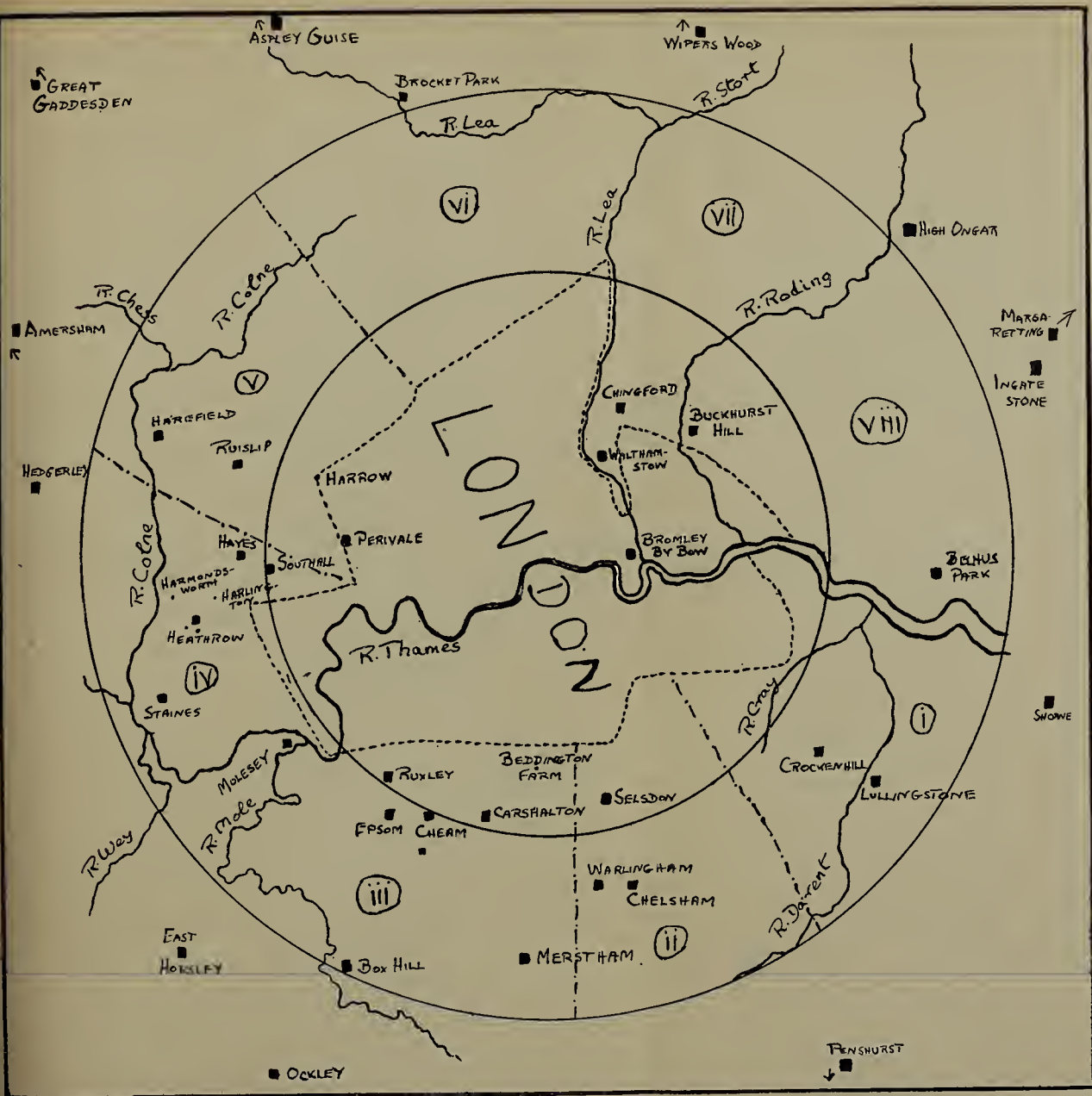


Fig. 2. THE STARLING ROOSTS OF THE LONDON AREA.

■ Indicates the site of a roost.

----- Indicates the approximate boundary of the area within which starlings fly into London to roost. The inner circle represents 12 miles and the outer circle 20 miles from St Paul's Cathedral.

----- Indicates boundaries of areas described on p. 13, and numbered in small roman numerals.

(iii) *Surrey, west of the Croydon-Godstone line.*

As many as eight roosts have been reported in this area, or just outside it and being used by starlings from within the area, but only one is known to have been in use in the past two or three years.

Ruxley Corner: winter roost in dense hawthorn thicket on Ewell-Tolworth road (A. 240) near the bridge over the R. Hogsmill; used by at least 10,000 birds, which congregated in trees on the N., E. and S. sides of the roost before flying in; stated in March 1933 to have been in existence for at least ten years (4); deserted after building development began in the summer of 1934.

The principal fly-line came in from the E., and was traced to Beddington sewage farm, 5-6 miles away; there were also fly-lines coming straight into the roost from the S.W. (direction of Epsom sewage farm), and from the N.W. across the Kingston By-pass (A. 3) in 1933 (L.M.E., 13, 4, 5). A fly-line noted in Jan. 1933 going E. between Esher and Claygate (3 m. W.) was almost certainly bound for this roost, and another seen in the same month going E. over Molesey (4½ m. N.W.) may also have been heading for it (P.A.D.H., 13).

Cheam Warren: autumn roost in the old game-preserve of Nonsuch Palace, ½ m. S. of Cheam village; birds roosting in 15-20 ft. elms; used regularly June-Nov., 1924-35, and probably earlier (P.H.T.H., 19); in 1936-37 only used June-Aug., and since 1938 only sporadically (P.W.E.C., 13); when not in regular use has always been used occasionally as a roost or a gathering-place by small parties, e.g. Dec. 1932 (J.C.B., 19) and several times since (P.W.E.C., 13), also fly-lines recorded in Dec. 1929, Dec. 1934, March 1935, Dec. 1936, Jan. 1937, Jan. 1939, and April 1940 (5).*

When in full use, in the autumn of 1934, by at least 10,000 birds, there were gathering-places near Banstead Station (1 m. S.), in a wood on Ewell Downs (1 m. S.W.), on Howell Hill (1 m. W.N.W.), in a copse 200 yards N.W., and at Cuddington Court (¾ m. N.N.W.). Most of the birds came into the roost or the gathering-places from the N.E., N., N.W., and W., but a few came from the E. and S.E. Birds flying in from the E. or N.E. would fly right in over the Warren and out to the Cuddington Court gathering-place before returning (5).

Fly-lines towards the Cheam Warren roost have been recorded from Epsom sewage farm (3 m. W.), where birds were coming in from the N.W., Beddington sewage farm (4 m. N.E.), Wallington (3½ m. E.N.E.) and Woodcote Grove, Coulsdon (3 m. S.E.). The bulk of the starlings using the roost probably came from Beddington and Epsom sewage farms. On July 24, 1937, a flock estimated at 5-6000 flew over Howell Hill towards the Warren from the direction of Epsom sewage farm (4, 5).

Carshalton Beeches: roost in a dense thorn thicket just S.W. of Queen Mary's Hospital, first located in Feb. 1941, when it was estimated to contain 10,000 birds, most of which came from Beddington sewage farm, though starlings were also seen flying towards the roost from Banstead and Cheam, and small numbers from Epsom sewage farm; a fly-line towards this roost was noted over Carshalton in Feb. 1940, and other evidence suggests that this roost has been used at least since the Cheam Warren roost was abandoned (C.B.A., 13).

Epsom Sewage Farm: a very large roost was reported here in Aug. 1929 (T.H.H. 13), and in Sept. 1936 the gamekeeper stated that there was always a roost in the withies in Oct. and Nov., but though the farm was visited frequently between 1933 and 1937, no trace of a roost was

*However, three records of fly-lines passing over Cheam Warren show that these fly-line records do not necessarily all indicate actual use of the roost, viz., S. over the Warren, Dec. 1934 (5), E.N.E. over the Warren, Dec. 1937, and S.W. from the Warren, Nov. 1939 (P.W.E.C., 13). The E.N.E. fly-line was probably going to the Carshalton Beeches roost.

ever found, though birds were frequently seen flying E. to Cheam Warren, e.g. Oct. 1934, while in Dec. 1934 and Nov. 1935 a westward fly-line from or over the farm was noted (5).

East Horsley (c. 2 m. outside London area): roost noted at Longhurst Road, Oct. 1932, and said to have been occupied for at least three years; birds coming in from all sides (19); no birds there in Jan. 1933 (P.H.T.H., 21), but an assembly of c. 500, with a fly-line from the N.N.W., was reported in March 1936 (R.C.H., 13). The following fly-lines in the direction of this roost have been recorded:

From the N. : S. from Cobham (3½ m.), Jan. 1933 (P.A.D.H., 13).

S.E. from Addlestone (7 m.), winter 1932-33 (P.A.D.H., 13).

S. from Chertsey (8½ m.), Oct. 1936 (5).

S. from Hampton Court (10 m.), June 1935 (5).

S.W. from Morden (13 m.), Dec. 1940 (5).

From the E. : Numerous records of starlings flying W. or S.W. over Epsom and Ewell, mostly in Dec., but also one each in Jan., March, June, Oct. and Nov., 1933-37, and in Aug. 1940 (5); also a marked fly-line E. over Epsom in the mornings in the winter of 1934-35 (R.C.H., 13), and a report in Nov. 1939 that occasional parties passed S.W. over Cheam Warren (P.W.E.C., 13).

Jayes Park, Ockley (7-8 m. outside London area): a fairly large roost since 1922 was reported in 1933 to be drawing birds through the Mole Gap from Mickleham (8 m. N.) and perhaps beyond, but with no indication that more than a very small number were involved (21); a few birds were noticed going S. or S.W. in the Mole Gap in Jan. and Sept. 1935 and Oct. 1937, but in Nov. 1934 there was a small movement N.E. at Juniper Hill (5). In Sept. 1940 a large flock, estimated at over 18,000, flew S.S.E. over Fetcham, and smaller flights were noticed on later dates (H.J.B., 13).

Box Hill: roost reported at the foot of the hill, Aug. 1939 (L.P., 13): see the Mole Gap fly-lines mentioned under Jayes Park.

Merstham: autumn roost for over 20 years in trees at the corner of Brighton Road (A. 23) and Station Road, birds coming in from all sides except N., Oct. 1932 (P.H.T.H., 19).

Southerly fly-lines to unlocated roost: The following fly-lines in a southerly direction indicate one or more unlocated roosts somewhere on the North Downs, probably in the Chipstead-Kingswood-Headley district (4, 5):

S. over Little Woodeote, Wallington, Jan. 1930.

S. over Wallington, March 1930.

N.E. from Juniper Hill, Nov. 1934.

S. over Cheam Warren, Dec. 1934.

S. over Nork, Dec. 1934.

S. over Croydon Aerodrome, Dec. 1934.

S. over Howell Hill, Jan. 1935.

S. from Beddington sewage farm, Dec. 1936.

S. over Thirtyacres Barn, Ashted, Dec. 1936.

E. from Mole valley just S. of Leatherhead, Dec. 1940.

It is possible that some of these are connected with the Box Hill roost, but unlikely that any of them go to Jayes Park.

The principal feeding ground for starlings in this part of Surrey is the Croydon Corporation's sewage farm at Beddington. Well over 5000, probably at least 10,000, starlings feed here and on the adjoining Mitcham Common and Waddon Marsh every day the winter. Starlings from Beddington have been traced at various points to the roost at Selsdon (3 m. S.E.), Carshalton Beeches (2½ m. S.S.W.), Cheam Warren (4 m. S.W.), and Ruxley Corner (6 m. W.). In Dec. 1936 some were going S., possibly to the unlocated roost in the Kingswood district,

and since Feb. 1937 some have been flying N.W. across the Thames (see under Thames Valley) at Teddington at least nine miles away.

(iv) *The Thames Valley.*

The records for this area consist of a number of old ones, all prior to 1933, of roosts or suspected roosts, and several more recent ones of fly-lines, which are too few to give a very clear picture of the situation at present. The old roosts comprise:

A roost near *Molesey* taking birds from Sunbury, Hampton, and possibly Walton-on-Thames in Dec. 1929 (T.H.H., 13). This is possibly the same as the unlocated roost S.E. of the engine-house at Littleton Reservoir reported in Dec. 1931 (J.P.H., 13).

The fly-line S. from Hampton Court in June 1935 might have been going to a roost at Molesey, as also one W.S.W. from Richmond Park in Dec. 1940 (P.M., 13).

An unlocated roost somewhere between Bedfont and Hanwell, taking birds from Staines and Bedfont districts in 1929 (T.H.H., 13).

A very small roost (max. counted, c. 60) in reeds of a pond opposite the S.W. corner of Staines Reservoir in July 1932 (P.A.D.H., 13).

Southerly fly-lines from Addlestone, Chertsey and Hampton Court, possibly heading for the East Horsley roost, have already been mentioned. There was a small westerly fly-line at a point $\frac{1}{2}$ m. N. of Addlestone in Dec. 1932 (P.A.D.H., 13).

The intersection of the following fly-lines suggests the existence of a considerable roost somewhere in the triangle, Harlington-Harmondsworth-Heathrow:

S.E. from Poyle, Aug. 1937 (5).

S.W. from Harlington, July 1936 (5).

N.E. over Heathrow, winter 1939-40 (C.A.W., 13).

N. over Staines Reservoir, Dec. 1939 (5).

N. over Littleton Reservoir, Dec. 1939 (P.A.D.H., 13).

W. across Harlington-Hatton road (A. 312) between A. 4 and A. 30, 1940 (J.E.R., 13).

A strong fly-line numbering thousands of birds N.W. over New Malden and crossing the Thames near Teddington Lock between Nov. and March, 1937-40 (W.I.C., 13). These birds evidently come from Beddington sewage farm (9 m. S.E. of Teddington Lock, and may be heading for the supposed roost near Harlington, 6-7 m. further on.

Two further fly-lines that may be going to this supposed roost are:

W. from Hanger Hill, Jan. and Feb. 1939 (12; P.A.D.H., 13).

W. over Southall, winter 1939-40 (C.A.W., 13).

Such a roost would also take the birds going S. and S.W. from Harrow (see under West Middlesex). It might also be the same as the roost posited by T.H.H. between Bedfont and Hanwell in 1929.

Two other small roosts have been recorded in this area:—

Southall: a roost of about 200 in elms by the Grand Union Canal at Waxlow Farm, winter 1932 (C.A.W., 13).

Hayes: a roost of about 150 in elms near Coldharbour, seen twice in the winter of 1939-40 (C.A.W., 13).

Neither of them, however, are large enough to affect the fly-lines listed above, and they are both probably used only by local birds.

(v) *West Middlesex, S.W. of the Watford By-pass and N. of the Oxford Road.*

Two or three old records of roosts in this area are of historical interest only :

Ruislip : large numbers roosting in Park Wood, Nov. 1893 (6).

Lower Brent Valley : large numbers roosting in the reeds of a pond, 1896 (6).

Perivale : Selborne Society's bird sanctuary (a wood in the Lower Brent Valley) used as a roost c. 1911 (6).

Modern records for this area consist for the most part of a large and valuable series of notes on starling fly-lines in the Harrow district, made by boys of Harrow School in 1933-40, for the use of which I am much indebted to Mr G. H. Locket (12). These records, which are all for the autumn and winter months from October to March, show that Harrow, with its extensive playing-fields, golf-courses and sewage farms, is an important starling feeding ground, corresponding to Beddington sewage farm on the other side of London. Starlings from Harrow appear to fly to almost every point of the compass to roost. In the eight years 1933-40 they were observed in the evenings flying N., E., S.E., S., S.W., W.S.W., W., W.N.W., and N.W. The main fly-lines were those to the S.E. to Trafalgar Square (10 m.), to the S.W. probably to the unlocated Harlington roost (9 m.), to the W. to the Hedgerley roost (11 m.), to the W.N.W. to Amersham (14 m.) and to the N.W. to Gaddesden (16½ m.).

It is of interest to note that a roost recorded in 1929 was apparently no longer in use by 1933. This was near Harefield, where in March 1929 a very large roost was taking birds from Northwood (3 m. E.), Ruislip (3½ m. S.E.), Pinner (4½ m. E.), Northolt (6½ m. S.E.) and the district just west of Harrow (5½ m. E.S.E.) (9).

It will be convenient to deal with the 1933-40 fly-lines clockwise, starting from the east :

East and South-East : Fly-lines to the S.E. of Harrow in the afternoons and in the reverse direction in the mornings were observed in Sept. (once), Oct., Nov., Dec., Feb., in 1933-35-36-37. They were almost certainly bound for the Central London roosts ten miles away. A few starlings were observed flying W. in the mornings in Oct. 1935 and Oct. and Nov. 1936, but these were near the Metropolitan Railway line and had probably followed its curve from N.W. to W. just before the point at which they were seen.

South and South-West : A fly-line to the S.W. was recorded in all months from Nov. to Mar. in 1933-37 and 1939-40. It was most probably going to the supposed roost in the Harlington district (see under Thames Valley). A few birds going S. in Nov. 1935 and 1936, several flocks in Feb. 1937 were probably also going to this roost, and small parties heading E.N.E. in the morning in Dec. 1934 and Feb. 1937 may have been either from this or the Hedgerley roost.

West : Starlings in some numbers were observed flying W. from Harrow in all months from Nov. to Mar. in every year from 1933 to 1940. They were probably going to the large roost (many thousands) located in a wood near Hedgerley (11 m. W. and outside our area) in 1935 (C.A.W., 13).

Large flocks were also flying towards this roost S.W. from Harrow Weald in Feb. 1937, W. from Northolt Junction in Dec. 1938, W. from Pinner in Feb. 1939, S.W. from Ruislip Res. in Mar. 1937, and W. from Denham in Mar. 1934 and Feb. 1937, but in Oct. 1936 there was an E.N.E. fly-line from Denham Marsh as if to the old Harefield roost (possibly used in that year as an autumn roost), while in Nov. 1936 starlings were flying N.W. towards Amersham across the canal at Denham. Ruislip starlings flew W., probably to Hedgerley, both winter and summer, 1936-41 (W.R.P., C.A.W., 13). The following fly-lines have been noted towards the Hedgerley roost in the Thames Valley (5), and the fly-lines W. from Hanger Hill and Southall (see under Thames Valley) may have been going there too:

N. from Datchet (6 m. S.), Dec. 1939.

N. from Sunnymeads (7 m. S.), Dec. 1939.

N.W. from Staines (10 m. S.E.), Jan. 1940.

W. along G.W.R. line between Denham and Northolt, Feb. and Oct. 1941.

West-North-West: Starlings were observed flying W.N.W. from Harrow between Dec. and Mar. in 1933-34 and 1936-40. The line W.N.W. from Harrow passes through Harefield (7 m.), where there was a roost in 1929 and Amersham where there was a roost in 1933. Other fly-lines bound for Amersham include many flocks along the Grand Union Canal between Denham (8½ m. S.E.) and Rickmansworth (7 m. E.S.E.) in Nov. 1936, and one from Denham Woods in Oct. 1937. In Jan. 1938 2-300 birds were gathering at Loudwater (6½ m. E.S.E.) and others coming in from the S., while small parties were flying W. over Rickmansworth towards the Amersham roost (5). The Amersham roost was located in Second Wood, 1 m. S.W. of the town, early in 1933, and was stated to have been there for three years (19, 21), i.e. it apparently began in the year after T.H.H. recorded the roost near Harefield which has not been heard of since. Birds came in to the Amersham roost from all sides, and E.M.N. gives Harrow (14 m. S.E.), Northwood (10 m. S.S.E.), Harefield (7 m. S.E.), and Farnham Common (7 m. S.) as within its foraging area. A fly-line N.W. from Newyears Green (1 m. W. of Ruislip and 9 m. S.E. of Amersham) was noted in Nov. 1939 (5).

North-West and North: Starling fly-lines to the N.W. were recorded at Harrow in every month from October to Mar. in 1933 and 1935-38. These birds were apparently going to the roost at Great Gaddesden, 16½ m. away. This fly-line was noted over Watford (10 m. S.E. from Gaddesden) in 1932-33, and the only other fly-lines in the direction of this roost recorded from within the London area are a flock of more than 1000 flying N.W. at Pinner (14½ m. S.E.) in March 1923 (L.J.T., 13), and a fly-line N.N.W. from Radlett (11 m. N.W.) in Jan. 1933 (P.B.N.D., 21) and Nov. 1940 (5). The same applies to a strong fly-line going N. over St Albans station in Nov. 1940 (5), though some of these birds seemed to be veering rather E. of N., as though to Brocket Park or Wipers Wood (see next two sections). A few birds were noted flying N. at Harrow in Jan. and Feb. 1934, Nov. 1935, Oct. 1936, and Mar. 1939. These may have been going to the Gaddesden roost, or possibly to Brocket Park (17 m. N.N.E.).

(vi) *South Herts between the Watford By-pass and the Lea Valley.*

A roost was recorded in October 1932 in the wood at the N. end of the lake in *Brocket Park* (P.B.N.D., 19). Fly-lines towards it were observed N.E. at Hatch End (15 m. S.W.) in Nov. 1934 (5), N.W. at Cheshunt Park (10 m. S.E.) in Feb. 1930 (H.A.L., 13), and over Cuffley Great Wood (7 m. S.E.) in Mar. and June 1941 (E.R.P., 13). Two N.E. fly-lines over Elstree and Borehamwood in Jan. 1929 and Nov. 1930 (9) may have been going either to Brocket or to Wipers Wood. A

fly-line due W. was noted at Hendon Park Farm on the Herts-Middx. border 1 m. S.W. of Arkley in Feb. 1939 and occasionally thereafter up to Apr. 1940 (W.D.M., 13). The nearest known roost in this direction is Amersham, $16\frac{1}{2}$ miles away. A regular fly-line N. over Radlett (9 m. S.S.W.) was reported late in 1932 as having been noted for some years previously (A.S., 19). Nicholson (21) suggested that the Radlett birds went to Aspley Guise roost (26 m. N.N.W.), as a N.N.W. fly-line was noted over Radlett in Jan. 1933, and flocks only $4\frac{1}{2}$ m. E. of Gaddesden definitely flew to Aspley Guise. If this is true of the Radlett fly-line, it must also apply to the St Albans fly-line mentioned in the previous section. The foraging area of the Brocket Park roost does not apparently go very far E., as Hertingfordbury and Welwyn Garden City birds fly N.E. to Wipers Wood.

(vii) *Lea and Roding Valleys.*

The starlings of the Lea Valley mostly go to a large roost in *Wipers Wood*, Albury Hall Park, 2 m. N. of Little Hadham in Herts and 6 m. N.W. of Bishop's Stortford. A fly-line was followed here from Chingford ($19\frac{1}{2}$ m. S.) via Waltham and Roydon in Jan. 1933 (11), and a large flock flew in this direction from Edmonton sewage farm in Sept. 1934 (17). Early in 1933 it was estimated that 100,000 starlings were using the Wipers Wood roost, mostly coming from the W. and S. In 1933 its existence had been known for five years. Fly-lines headed for this roost have been recorded from Welwyn Garden City (14 m. S.W.) and Hertingfordbury ($11\frac{1}{2}$ m. S.W.) in 1932-33 (P.B.N.D., 21), from Epping Upland (13 m. S.) in Nov. 1937 (5), from St Margaret's (9 m. S.S.W.) in Nov. 1940 (C.P., 13), and from Hertford (10 m. S.W.) in Jan. 1941 (5).

Lower down the Lea Valley a new roost was started in Nov. 1934 in bushes on Yardley Hill, 1 m. N. of Chingford, taking birds from the S. and S.W., some having been traced from Hackney Marshes (J.R., 13, 11). On Dec. 21, 1934, a large flock was seen to fly N. over this roost, evidently bound for Wipers Wood, but some birds came down to roost. Parmenter (13) has an interesting note of a small party of starlings flying N.E. at Chingford in June 1929, "apparently to a roost later used by thousands," which suggests that this roost, or one very near it, had been in use prior to 1934.

On the other hand, fly-lines recorded W. over Woodford Green in the mornings in Jan. and Nov. 1929 and E. over Buckhurst Hill in the evenings in Jan. 1929 (S.B., 13) suggest that Chingford starlings were roosting somewhere E. of the Roding valley in that year. This fly-line was again noted in 1940, when a flock flew W. over Woodford Green on the morning of Oct. 20, and flocks were flying E. by N. in the evenings in Sept. and Oct. at Abridge; by the end of Nov., however, the Abridge flocks were all flying due N. (? to Wipers Wood) (K.E.H., 13). A small reedy pond in the Roding valley near Buckhurst Hill was used as a roost by c. 70 birds in June-Aug. 1940 (K.E.H., 13).

The whole position in the Epping Forest area in 1940-41 was very complex. I am much indebted to Mr K. E. Hoy for a valuable series of

observations for this area during these two years. As with the Harrow notes, these are best dealt with in clockwise rotation :

North-North-West : c 100 birds which gathered in the trees of Hill Wood, Robin Hood, in Nov. 1940, and flew off N.N.W. were going in the direction of no known roost, unless they turned north to Wipers Wood on reaching the Lea valley.

North : fly-lines going approximately N. or W. of N. from Woodford Green and South Woodford in Nov. 1940 and Jan. 1941, and N. from Sewardstone Gravel Pit in Dec. 1940 and 1941, were doubtless bound for Wipers Wood. A fly-line W. of N. from Passingford Bridge in Dec. 1940 may also possibly have been going to Wipers Wood.

North-East : in this direction there is a roost at Chivers Hall, 700 yards E. of *High Ongar* church, in a plantation of 10-12 ft. young elms, measuring about 300 by 400 yards. This roost was located in Nov. 1941, when it was occupied by 6-7000 birds, and it was thought that it could not have been in use very long owing to the lack of droppings under the trees (K.E.H., 13). It is possible that this is the same roost as the one reported N.W. of Ingatestone in 1932 (W.S., 19). Fly-lines towards the Ongar roost have been noted from :

- Yardley Hill (13½ m. W.S.W.).
- Connaught Water (12½ m. W.S.W.).
- Woodford Green (13½ m. S.W.).
- Abridge (8½ m. S.W.).
- Hainault Forest (12 m. S.W.).
- Stapleford Tawney (6 m. S.W.).
- Navestock (5 m. S.W.).

Other fly-lines which may have been bound either to Ongar or to Wipers Wood, or possibly to some unlocated roost in between include :

- N.E. from Yardley Hill, Nov. 1940.
- E. of N. from Abridge, Nov. 1940.
- E. of N. to W. of N. from Passingford Bridge, Dec. 1940.
- W. of S. (a.m.) from Woodford Green, June-July 1941.

East : Fly-lines over Woodford Green, W. in the morning in Oct. 1940 and Aug. 1941, and E. in the evening in March and Nov. 1941, appear to be headed for the same unlocated roost as those E. over Buckhurst Hill and Woodford Green in 1929, referred to above.

South-East : In March 1941 starlings were noted flying S.E. over South Woodford and E.S.E. over Buckhurst Hill. This fly-line might go to Belhus Park (see Section viii).

Lower still down the Lea Valley is the Bromley-by-Bow roost, mentioned (A2) in Section IV, which may have taken the starlings recorded as flying N. from Woolwich in 1932-33 (p. 14) and E. or S. from Lea Bridge Road in March 1941 (K.E.H., 13).

(viii) *South-West Essex.*

There is little information about starling roosts or fly-lines in Londonward Essex, except for the Lea and Roding Valley areas dealt with in the previous section. At Dagenham in Feb. 1933 some birds flew off on a line which would cut the various E. and S.E. lines from the Roding valley at various points between Becontree and Havering-atte-Bower (B.D.N., 21), but might equally well go on to the Ongar roost or to the roost reported in wooded country N.W. of Ingatestone in 1932 and stated to be taking birds chiefly from the E. and S. (W.S., 19). Another fly-line from Dagenham in Feb. 1933 went slightly S. of E., intersecting another line S.W. from Laindon in Dec. 1932, as well as the S.E. line from the

Roding Valley, near Belhus Park, where there is an unsubstantiated report of a roost (21). Finally, there was a roost near Margaretting in 1932, which had been used for at least ten years and which was said to receive birds from all sides (T.C.H.B., 19). The foraging area of this roost would probably extend to within the 20-mile radius of St Paul's.

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P. A. Adolph.	J. P. Hardiman.	L. Parmenter.
C. B. Ashby.	T. H. Harrisson.	E. R. Parrinder
C. S. Bayne.	P. A. D. Hollom.	C. Pease.
S. Boardman.	R. C. Homes.	J. H. G. Peterken.
H. J. Burkill.	K. E. Hoy.	R. W. Pethen.
W. L. Colyer.	H. A. Littlejohn.	W. R. Philipson.
P. W. E. Currie.	Mrs H. M. Rait Kerr.	Miss M. Rew.
J. E. S. Dallas.	P. Maclaren.	J. E. Roberts.
R. P. Donnelly.	G. E. Manser.	J. Ross.
L. M. Emberson.	W. D. Melluish.	Mrs K. Taylor.
J. M. M. Fisher.	R. Mercer.	E. C. Watt.
		C. A. White.
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T. C. H. Bartrop.	P. H. T. Hartley.	W. Simms.
J. C. Blyton.	A. Scott.	A. E. Skinner.
P. B. N. Davis.		
20. MERCER, R. : Letter in *Observer*, January 30, 1937.

21. NICHOLSON, E. M. : Unpublished MS. of a survey of London starling roosts in 1932-33 in connection with 18; including notes from the following observers :
- | | | |
|-------------------|--------------------|----------------------------|
| H. Bryant. | P. H. T. Hartley. | A. Smoker. |
| J. Clancy. | R. Hiscutt. | D. Southerwood. |
| A. H. Clayton. | P. W. Horn. | Sir W. Beach Thomas |
| E. P. Coleman. | A. Johnstone. | (in <i>The Spectator</i> , |
| C. L. Collenette. | G. Carmichael Low. | November 1933). |
| P. B. N. Davis. | E. Mann. | A. Trimmer. |
| W. Dickens. | B. D. Nicholson. | B. T. Ward. |
| R. D. English. | A. C. Poore. | J. H. Ward. |
| F. C. Griggs. | F. S. Rayner. | C. Weeks. |
| L. R. A. Grove. | W. Smith. | H. F. Witherby. |
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Absent Friends.

The following members serving overseas or in prisoner of war camps would be very glad to receive letters from other members. Some changes in the addresses in the *L.N.* for 1941, p. 11, are also given here :

F/Lt. G. Beven,
c/o P.O. Box 1573,
Durban, S.A.

Lt. E. H. Gillham,
242 Armd. Div. Tps., R.A.S.C.,
B.N.A.F.

S/254206, Cpl. E. M. Cawkell,
Spears Mission,
Syria and the Lebanon,
M.E.F.

Lt. R. C. Homes,
19 Fd. Battery, R.A.,
9 Fd. Regt., R.A.,
India Command.

Capt. P. W. E. Currie,
C Battery, 4th Regt., R.H.A.,
M.E.F.

Pte. David Morgan, 7740,
British Prisoner of War,
Stalag XXI.D/13.

Contributions to a fund for sending books and other comforts through the British Prisoners of War Books and Games Fund to three members of the Society who are prisoners of war will be welcomed by the Secretary of the fund, Mr R. W. Hale, 6 Grendon Gardens, Wembley Park, Middlesex. It costs a minimum of 5/- per month per prisoner to keep the fund going.

Plant Gall Records for 1942.

Compiled by H. J. BURKILL, M.A., F.R.G.S.

WITH field work restricted, observations were naturally reduced, and the year was hardly a good one for recording.

As stated a year ago, Messrs M. Niblett and J. Ross were paying special attention to *Rhodites*. This genus was considered by Cameron in 1893 to be represented here by *Rh. rosae* L., *Rh. eglanteriae* Htg., *Rh. nervosus* Curt., and *Rh. spinosissimae* Gir. Prof. Heslop Harrison added *Rh. mayri* Schl. in 1916 from Durham. We found it in Kent in 1928 and have since noted it in two other different localities in that county as occurring on three different species of *Rosa*.

Cameron stated that the fly of *Rh. spinosissimae* induced galls of different forms on *R. spinosissima*, which complicates the position, and Mr R. B. Benson drew attention to identification of some of the insects in this genus, so Messrs Niblett and Ross have carried out investigations with many thousands of galls. Mr Niblett's results are printed elsewhere (*Entomologist*, 76, pp. 11 and 34). Mr Ross bred two species from smooth pea galls on *Rosa canina* L. and *R. rubiginosa* L., viz.:— (1) *Rh. eglanteriae* and (2) possibly *Rh. nervosus* or *Rh. rosarum* Gir. He also bred two females of *Rh. spinosissimae* from galls on *Rosa* sp., not *spinosissima*. The investigations are being continued.

The observations in past years of Messrs E. B. Bishop, R. W. Robbins and others have shown that the different species of galls occur on several species of *Rosa*, and these records can be seen in the *L.N.* from 1924 onwards. Here again the work has not reached finality.

The following galls are possibly new to the British list: Small *Cynipid* galls in the stems of *Achillea millefolium* L. which failed to develop, Fetcham. Multilocular swellings in the root-stocks of *Leontodon autumnale* L. inhabited by *Chalcid* larvae, Fetcham. *Isosoma* sp. causing large galls on *Agropyron repens* Beauv., somewhat resembling galls of *I. graminicola* Gir. but much more pronounced, Fetcham Downs. A *Cecidomyid* inducing swellings of the flowers of *Angelica sylvestris* L. which remained closed and contained an orange-coloured larva. The same host plant had the umbels swollen by a pale yellow *Cecid.* larva with an internal structure different to the last. A small *Cecid.* gall of elongated oval shape on the stem of *Pimpinella saxifraga* L. on Box Hill, which resembled that found at Bookham in August 1934 by Miss Longfield on *Silva pratensis* Besser.

Among other species can be mentioned *Saperda populnea* L. found in *Salix atrocineria* Brot., *S. caprea* L., and *Populus tremula* L. *Sesia formicaeformis* Esper was found on the two species of *Salix* just mentioned, and *S. flaviventris* Staud. was bred from a gall on *S. caprea*. *Laspeyresia servilleana* Dup. was found galling *S. atrocineria*. *Melanagromyza simplicoides* Hendel was found on *S. atrocineria* and *S. caprea*, and what seems to be *M. schineri* Gir. on *S. caprea*. All

these were taken at Bookham or on Box Hill. *Oxya nebulosa* Weid. on *Chrysanthemum* L. at Fetcham.

Many species of *Aphides* were abundant and the galls of *Pemphigus bursarius* L. and *P. marsupialis* Courcelet were very noticeable on *Populus pyramidalis* Rozier, while *P. affinis* was present in some numbers, and *P. spirothecae* Pas. on *Populus nigra* L. occasionally. *Tetraneura ulmifolia* Baker and *Eriosoma ulmosedens* Marchal were reported as plentiful on *Ulmus campestris* L.

Salix triandra L. was strongly galled by *Eriophyes triradiatus* Nal. between Richmond and Teddington Lock. *Phyllocoptes anthobius* Nal. was again seen on *Galium uliginosum* L. on Bookham Common.

Messrs J. E. Lousley and C. P. Castell sent in some good specimens of *Coniothyrium tumaeformis* Güss. on *Rubus* sp. from Wimbledon.

A visit to Kew Gardens supplied several fresh host plants in our lists for some of the commoner galls.

Lepidoptera Notes, 1942.

By H. J. BURKILL, M.A., F.R.G.S.

NO attempt has been made to compile the customary synopsis on British Butterflies for this last year as so many of my usual correspondents have had little opportunity for observation.

Probably the butterfly of the year was *Pararge megera* (Wall), which seems to have been abundant in most places. *Polygonia c-album* (Comma) continued its spread and has reached Northumberland, while *Limenitis camilla* (White Admiral) seems to be holding its own. One male of *Apatura iris* (Purple Emperor) was seen in the Coldharbour district of Leith Hill sitting on a piece of damp cardboard on the ground, probably for the purpose of obtaining moisture.

I watched *Aglais urticae* (Small Tortoiseshell) ovipositing on 23rd June. I saw her settle over a dozen times on leaves of *Urtica dioica*, not on the terminal leaves but always on those just below the top, curl her abdomen round, apply the tip to the under surface of the leaf and fly off without depositing any ova. How many leaves she had tested before I saw her I do not know. I searched each leaf as soon as she had left it and there were no ova. Then she found one to suit her, the condition of the leaf was satisfactory and she proceeded to business. I watched for nineteen minutes and then disturbed her and picked the leaf. Examination at home showed fifty or more eggs had been deposited in a compact mass.

I have seen this selective process carried out by *Pieris brassicae* and *P. rapae*. Scent will tell them if the plant is the right species, but there is something more in the sensation detected by the tip of the abdomen as to the condition of the plant. I have several times watched them settle on various species of the cabbage family and prepare for oviposition, but as soon as the abdomen touches the under surface of the leaf they fly off without ovipositing. Twice last season I saw *P.*

brassicae settle on leaves of rhubarb as if to lay, but no ova were placed there.

Mr J. H. Harvey has sent from North Wales some small flies for identification with some interesting remarks on their behaviour. He says: "We have been beset with an immense plague of Large White caterpillars, which are now pupating, also a smaller number of the Small White. The behaviour of the small flies is curious. They seem to confine their attention to the pupae of the Small White, first prospecting around, then patiently waiting beside the caterpillar, which has hung itself up to pupate, even settling on the caterpillar after it has fixed itself with the silken band, but taking no further steps until after the transformation. I haven't had patience or opportunity to see all that goes on, but in one case two of the flies were ovipositing in the Small White pupa for over 24 hours from the time of transformation, each of them laying a large number of eggs in the pupa. The process does not seem always to be quite the same, as in one instance I saw one of the flies apparently scraping with its mandibles at the skin of the pupa for several minutes before ovipositing; at other times it seems able to exert enough penetrative power on finding a suitable spot; the wings of the future butterfly seem to be the part of the pupa chosen, at least in the instances I saw."

Referring to the *Apanteles* parasitic on the *Pieris* larvae, Mr Harvey says "each *Apanteles* larva cuts its own way out of the Large White caterpillar, indifferently in back, side, or belly, but all of them coming out at once, then in a few minutes they gather together 'in a huddle' near the middle of the caterpillar's belly and spin their own yellow web, which seems as though exuding all round each of them practically from the moment they emerge."

"Specimens of the hymenopteron are prospecting around the caterpillars which are attempting to pupate, and I have seen one feeling its way over a bundle of *Apanteles* cocoons." "I have now seen it actually oviposit in the *Apanteles* pupa."

Cucullia verbasci and its Food Plants.

The species of plants included by botanists in the order Scrophulariaceae seem to be so divergent that I thought it might be of interest to see if the larvae of the Mullein moth had any preference for one species over another. I had no difficulty in obtaining a number of these larvae and some were placed in each of four large glass jars, and each day were given different species of plants. Some days they were given a choice of two, three or four species. Sometimes only one plant was given, and if not eaten at all at the end of four hours the larvae were given one that they had previously shown a preference for.

The favourite was *Scrophularia aquatica*, which was an easy first. Then came *Verbascum thapsus* followed by *S. nodosa*. Some way behind came *V. nigrum* and some garden varieties, Harkness hybrids of the last named.

My daily journey to town and back entails a walk past several plants of *S. aquatica* but I do not remember seeing any wild larvae on the plants. Both species of Figwort were given and then the preference was for *S. aquatica*, a preference one might understand, for as a rule these came from damp situations, but I was fortunate enough to find both species growing close together on a dry bank in Norbury Park, and I took a supply of each and gave the larvae both together. *Aquatica* proved the favourite. A cross section of the stems shows a more solid structure in *nodosa*, so possibly this greater hardness extends through the rest of the plant and thus the larvae reject it if more easily eaten food is available.

Even when no other plant was offered the following were completely rejected—*Linaria vulgaris*, *L. minor*, *Antirrhinum orontium*, *Digitalis purpurea*, *Veronica officinalis*, and *V. chamaedrys*. No attempt at eating was observed and I could not detect any nibbled leaves. It might be possible another year to see if insects bred from larvae fed exclusively on *S. aquatica* would oviposit on that plant.

Only two of the larvae used during the experiment died so I should not say the changes in diet were harmful to the larvae.

Herbs Needed for Drug-making.

OWING to the war-time shortage of the material of a number of important drug plants, the Vegetable Drugs Committee of the Ministry of Supply's Directorate of Medical Supplies is seeking to make good the losses with indigenous plants. County Herb Committees have been set up in many counties to organise the collection and drying of a number of wild plants. The plants especially needed are the Deadly Nightshade (*Atropa belladonna*), Henbane (*Hyoscyamus niger*), Meadow Saffron (*Colchicum autumnale*), Foxglove (*Digitalis purpurea*), Male Fern (*Dryopteris filix-mas*), Common Valerian (*Valeriana officinalis*) and Sphagnum moss. Species of secondary importance include the Stinging Nettle (*Urtica dioica*), Dandelions (*Taraxacum* spp.), Broom (*Cytisus scoparius*), Burdocks (*Arctium* spp.), Sweet Flag (*Acorus calamus*), Centaury (*Erythraea centaurium*), Coltsfoot (*Tussilago farfara*), Common Comfrey (*Symphytum officinale*), Parsley Piert (*Alchemilla arvensis*) and Wormwood (*Artemisia absinthium*). Members of the Society who know of localities where any of these species are present in sufficient numbers to warrant collection should get in touch with the appropriate County Herb Committee (addresses given below), provided that such collection is not likely to lead to the extinction of the rarer species:—

Bucks: Dr W. O. James, Botany School, Oxford.

Essex: Mrs Ranson, East Hanningfield, Chelmsford.

Herts: Miss Duncan, 56 Hilfield Lane, Aldenham, Watford.

Kent: G. Holland, 1 Holmsdale Terrace, Folkestone.

Middx.: Lady Abrahams, 49 Ashbourne Avenue, Golders Green, N.W.11.

Surrey: Mrs P. Devlin, Citizens' Advice Bureau, 201 High Street Guildford.

The Survey of Bookham Common.

FIRST YEAR.

Some Preliminary Observations on the Base Map and Topography.

By C. P. CASTELL.

AS announced in *The London Naturalist* for 1941 (p. 37), the Ecological Section has commenced a survey of the fauna and flora of Bookham Common, Surrey, two miles west of Leatherhead, and lying just within the boundary of the Society's area.

For the purposes of the survey, the term "Bookham Common" is applied to about 380 acres of three adjacent commons, as follows: (1) Great Bookham Common, in the parish of Great Bookham, with the exception of the small portions north-east of Cobham Road and south of the railway-tunnel (300 acres); (2) all of Little Bookham Common, in the parish of Little Bookham (75 acres); and (3) about 5 acres of the easternmost part of Bank's Common, in the parish of Effingham. The parish boundaries are shown on the map accompanying Mr J. H. Harvey's article on p. 32. These commons are the property of the National Trust, which has kindly offered the Society every facility in undertaking the survey.

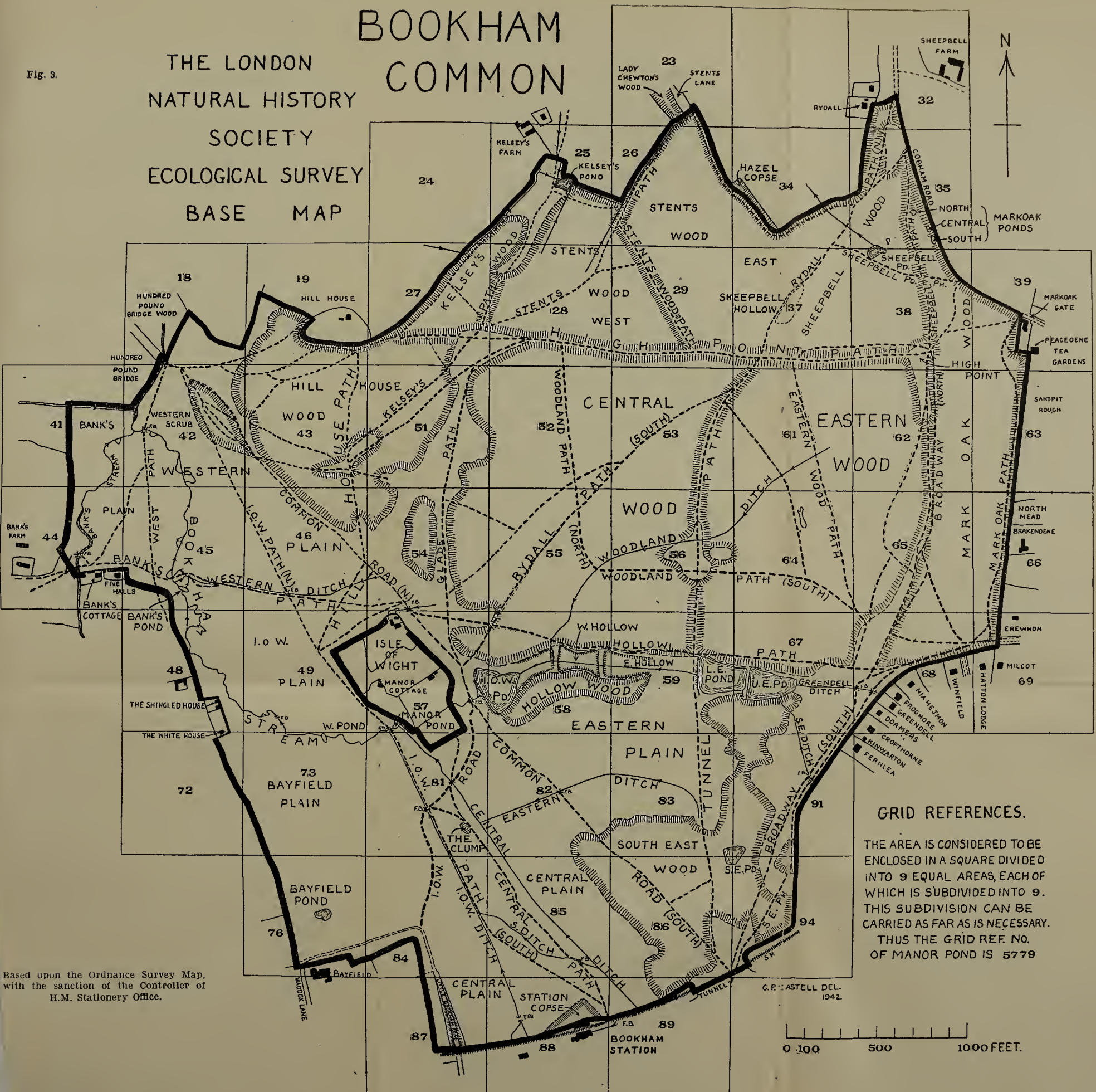
The base map (see Fig. 3) accompanying these notes has been specially prepared by the author, assisted in the field by members of the Section. Two types of map are available for the use of members, one printed in black and the other lightly printed in grey for the purpose of adding field and other notes. The map is based on the Ordnance Survey 1/2500 plan (25 inches to the mile), reduced to the scale of $9\frac{1}{2}$ inches to the mile, and reproduced here with the sanction of the Controller of H.M. Stationery Office. Topographical features, especially footpaths, were checked in the field and considerable alterations and additions made. To facilitate the recording of observations, names have been given to many of these features, including the subdivisions of the rather uniform woodland areas. For the more accurate location of habitats, however, a reference grid has been superimposed on the map. The length of the survey area is rather more than a mile both from north to south and from east to west; it has, therefore, been considered as enclosed in a square with a side of 2000 yards. This square is divided into nine equal primary squares, each of which is again divided into nine secondary squares which are shown numbered on the map. In the diagram on p. 29 the primary square 5 is shown subdivided into the secondary squares numbered from 51 to 59.

By a similar subdivision of the secondary squares, the position of a spot on the map may be indicated, in decimal notation, by the numbered square in which it occurs, and this subdivision can be carried as far as is required. Thus, the house Winfield is in square 68 and its position

Fig. 3.

THE LONDON
NATURAL HISTORY
SOCIETY
ECOLOGICAL SURVEY
BASE MAP

BOOKHAM
COMMON



GRID REFERENCES.
THE AREA IS CONSIDERED TO BE ENCLOSED IN A SQUARE DIVIDED INTO 9 EQUAL AREAS, EACH OF WHICH IS SUBDIVIDED INTO 9. THIS SUBDIVISION CAN BE CARRIED AS FAR AS IS NECESSARY. THUS THE GRID REF. NO. OF MANOR POND IS 5779

Based upon the Ordnance Survey Map, with the sanction of the Controller of H.M. Stationery Office.

0 100 500 1000 FEET.

can be more accurately expressed as 6865. In estimating the subdivisions it has been found helpful to construct a template, on cellophane or tracing paper, which can be placed over the map and the location reference number then readily estimated. In practice, however, the

1	2			3
4	51	52	53	6
	54	55	56	
	57	58	59	
7	8			9

degree of accuracy is usually limited by the difficulty of accurately locating one's position in the field, especially in the wooded areas. Nevertheless, it is hoped that the addition of the grid will add to the accuracy of recording observations and obviate the necessity of an elaborate description of the position of a habitat.

A ridge, covered with dense oakwood, runs from east to west across the northern part of the common at an average height of some 150 feet above sea-level, reaches its maximum, 233 feet, at High Point, near Markoak Gate at the eastern boundary, and rises again westward to 178 feet at Hill House. The ridge slopes down northward to the R. Mole, half-a-mile outside the area, and to the south-west and more steeply, to the west to Bookham Stream, a small tributary of the R. Mole. Bookham Stream flows across the common in a N.N.W. direction, joins Bauk's Stream from Effingham Common, and turns north, leaving Little Bookham Common in the N.W. corner at Hundred Pound Bridge, to unite with the R. Mole at Cobham. This low-lying wet grassland, with an average height of about 120 feet, drops from 140 feet at the railway station to 98 feet where the stream leaves the common. A shallow valley, occupied by ponds and damp hollows, falling from 140 feet at the head of Greendell ditch to 115 feet at the "Isle of Wight,"

runs from east to west between the northern ridge and a minor wooded hill to the south-east which reaches a maximum height of 160 feet at the railway tunnel.

There are some fifteen ponds and many ditches on the common, with a winter maximum of about three acres of water. A summer minimum of about one and a half acres of water is afforded by Sheepbell, Upper Eastern, Isle of Wight, and Bayfield Ponds, which appear to be the most permanent.

The common is on London Clay, with the exception of a small capping of Plateau Gravel on the high ground at Markoak Gate and a narrow belt of alluvial deposits fringing the streams some 70 yards wide at Hundred Pound Bridge and broadening out at the railway to about 250 yards.

The survey area is bounded on the N.E. by Cobham Road, a minor road and omnibus route between Leatherhead and Cobham, on the far side of which lies a further wooded piece of common land and some farmland; on the east by scattered houses, gardens and fields; on the south by the Southern Railway branch line from Leatherhead to Effingham, and by Bookham Station, from which direct access is made to the common; on the west by farmland, including a small sewage disposal works, some cottages and the rest of Bank's Common; on the north by farmland. An enclosure, of about 10 acres, "The Isle of Wight," in the low-lying land of the S.W. part of the common, comprises a few cottages, orchards and grassland.

The wooded areas are clearly spreading, both in the woods themselves, where many glades and paths marked on old maps are overgrown and impassable, and on the southern and western edges of the woods, which are fringed by hawthorn scrub and bracken. Low scrub occurs on parts of the grassland away from the woods.

More than half the common is covered by what would appear to be a semi-natural pedunculate oak wood; the rest is occupied by grassland, water-logged in winter, and characterised by the grasses *Deschampsia caespitosa* and *Molinia coerulea*, the rush *Juncus glaucus*, and a local abundance of the Field Thistle *Cnicus arvensis*, with bracken on the higher ground.

A study of the vegetation and animal life of this area should provide an interesting contrast with that of Limpsfield Common (see the results of the Survey of Limpsfield Common in *The London Naturalist*, 1937-42).

Index to Place-Names on Bookham Common.

(* indicates that name does not appear on Fig. 3.)

	Map reference.		Map reference.
Bank's Cottage	44	" Bayfield "	76
„ Farm	44	Bayfield Plain 48, 49, 72, 73, 76, 81, 84	
„ Path	44-54	„ Pond	76
„ Plain	41, 42, 44, 45	Bookham Railway Station	88
„ Pond	45	„ Stream	57-18
„ Stream	44-42	" Brakendene "	66

	Map reference.		Map reference.
Broadway (North)	38-68	,, Path	25-43
,, (South)	68-94	* ,, ,, (Lower)	28-43
* ,, Clearing	65-94	,, Pond	25
Central Ditch	89-57	,, Wood	24, 25, 27, 28
,, Path	57-88	“Kinwarton”	92
,, Wood	28, 29, 37, 51-59, 61	Little Bookham Road	76-87
* ,, ,, Path	53-54	Lady Chewtons' Wood	23
* ,, Clearing	56	Maddox Lane	76-79
Clump	81	Manor Cottage	57
Cobham Road	32-39	,, Pond	57
Common Road (North)	18-57	Markoak Gate	39
,, ,, (South)	57-86	,, Path	39-68
“Cropthorne”	68	,, Ponds	35
“Dormers”	68	,, Wood	35, 38, 39, 62, 63, 65, 66, 68, 69
Eastern Ditch	83-81	“Milcot”	69
,, Hollow	59	*New Path	53-64
,, Plain	58, 59, 82, 83	“Nia Hejmon”	68
,, Pond (Lower)	59, 67	“North Mead”	66
,, ,, (Upper)	67	“Peacedene” Tea Gardens	39
,, Wood	37, 38, 53, 56, 59, 61, 62, 64, 65, 67	“Rydall”	32
* ,, ,, Clearing	56	Rydal Path (North)	32-37
,, ,, Path	37-65	,, ,, (South)	37-57
* ,, ,, Pool	64	Sandpit Rough	63
“Erewhon”	69	*Sheepbell Clearing	32, 35
“Fernlea”	92	* ,, Ditch	34-35
“Five Halls”	44	,, Farm	32
“Frogmore”	68	,, Hollow	37
*Glade	27, 28, 51, 54	,, Path	35-38
,, Path	51-57	,, Pond	38
“Grendell”	68	* ,, ,, (Little)	35
Grendell Ditch	68-67	,, ,, Path	34-38
“Hatton Lodge”	69	,, Wood	32, 34, 35, 37, 38
Hazel Copse	34	“Shingled House”	48
High Point	38	South Ditch	85-84
* ,, ,, Clearing	38, 62	South East Ditch	91-67
,, ,, Path	27-38	,, ,, Path	68-94
“Hill House”	19	,, ,, Wood	59, 67, 91, 82, 83, 85, 86, 89, 94
,, ,, Path	19-49	Station Copse	88
,, ,, Wood	19, 27, 42, 43, 46, 51, 54	Stents' Lane	23-35
* ,, ,, ,, Clearing	43	,, Path	23-27
* ,, ,, ,, Path	19-42	,, Wood (East)	23, 26, 29, 34, 37
*Hollow Ditch	59-58	,, ,, (West)	25, 26, 28, 29
,, Wood	58, 59	,, ,, Path	26-29
Hundred Pound Bridge	18	Tunnel (Railway)	89-94
,, ,, ,, Wood	18	* ,, Clearing	86, 89, 94
* ,, ,, Path	18-19	,, Path	53-86
Isle of Wight	49, 57, 81	Western Ditch	54-45
,, ,, Ditch	88-57	,, Hollow	53
,, ,, Path (North)	18-57	,, Path	18-45
,, ,, ,, (South)	57-88	,, Plain	18, 19, 42, 43, 45, 46, 54
,, ,, Plain	45, 46, 48, 49, 54, 57	,, Pond	73
,, ,, Pond	57-58	,, Scrub	42
* ,, ,, ,, (Little)	54-57	“White House”	72
,, ,, Road	57-84	“Winfield”	68
*Kelsey's Clearing	25, 28	Woodland Ditch	61-58
,, Farm	25	,, Path (North)	28-55
		,, ,, (South)	55-68

Bookham Common : A Short History.

By JOHN H. HARVEY.

Bookham Common has been formed from the two ancient commons of Great and Little Bookham, or rather from the lower commons of the two parishes, for the ancient manors included also the upper commons, now known as Ranmore.* Though Great and Little Bookham were already distinct at the Domesday Survey of 1086, it is possible to consider the two commons as a single unit, for there can be no doubt that the whole was, in fact, the common wasteland of the original Saxon settlement of Bocham, "the village by the beeches" (1). The beeches grew, and still grow, on the chalk lands of the southern half of the parish, but it must have been the northern common on the clay, covered with oak woods, which provided the greater part of the pannage for swine mentioned in Domesday: Chertsey Abbey, holding Great Bookham, then had "wood for 80 hogs. From the herbage, 30 hogs," while Halsard, subtenant of William de Braose, the successor of the Saxon Godtovi, had "11 hogs from the pannage and herbage" of Little Bookham (2).

Unfortunately, no mediaeval description of Bookham Common has yet come to light, and we depend on incidental references until we come to the survey of Great Bookham taken in 1614. During the Middle Ages the Commons were known as the Northwood and Southwood of Bookham; in 1343 one Gilbert le Tras surrendered in the manor court "half an acre of land lying next a certain place called 'le Woderude' at 'Slyfeld' . . . lying towards 'Northwode' on the South, the land of Nicholas de Slyfeld on the East, the land of Gilbert le Tras on the North, and the land of John Lewyne on the West" (3). In the preceding year the same Gilbert had surrendered $2\frac{1}{2}$ acres "enclosed by ditches and hedges" which lay "at Slyfeld at Woderude." The name Woderude means "the clearing in the wood" and evidently Slyfeld and these other lands had been cleared and improved from the common waste at an early period. The lands of the le Tras family were afterwards known as "Tracies," but the holding itself is referred to as "the tene-ment le Tras" in 1340 (4) and it may well be that the name is an allusion to the coppice wood with which the land was covered when it was first enclosed (5).

Other old place-names provide clues to the state of the land in the period between the Saxon settlement and the survey of 1614: an early name in the "Northend" of Bookham was "Le Mullehamme," meaning the meadow by the mill, mentioned in 1330 (6); this was evidently close to Slyfeld Mill. "Broakes Lane" and "Broakes Hatch," the old gate to the Common, refer to the valuable water-meadows approached by the lane, the Old English word *broc* meaning a marsh or meadow as well as a brook or stream; "Rydons" was *ryding*, a clearing. On the southern edge of the Common "the Burrows" was perhaps short for "Coneyburrows," a rabbit-warren, and "Burnams Green" beside

*See Fig. 4 opposite.

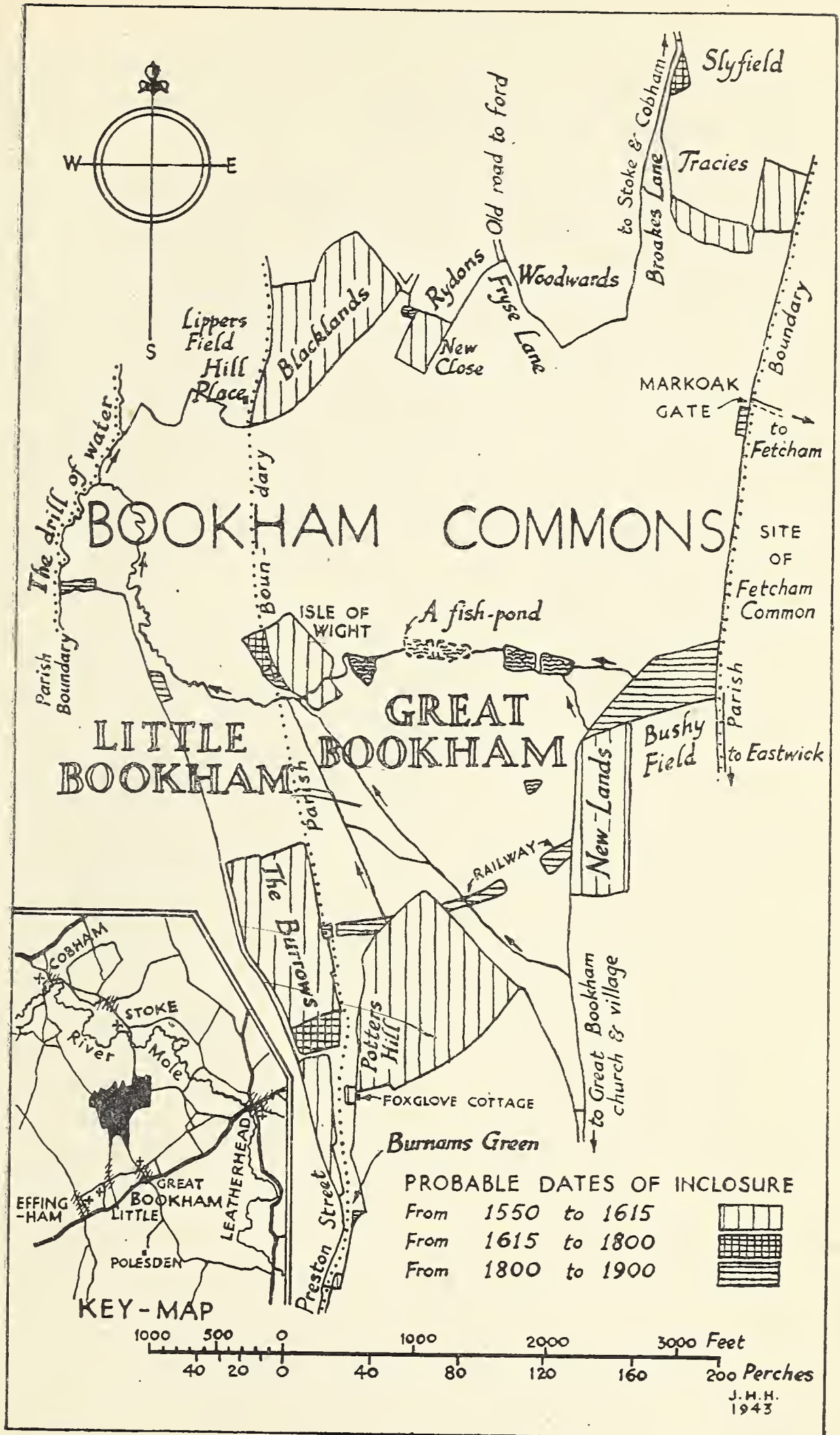


Fig. 4.

Based upon the Ordnance Survey Map, with the sanction of the Controller of H.M. Stationery Office.

Little Bookham Street must have been a patch of open grass land for centuries, as it still is. "Bushy Fields" were early inclosures from a part of the Common covered with bushes.

In 1435 the main road running through Great Bookham from South to North is referred to in a charter as "the Royal way which leads from 'Pollesdene' to 'le Northwod' of Bookham" (7); this ancient road ran through the woods down to the Mole at a point a quarter of a mile to the west of Stoke D'Abernon Manor House; until the 17th century, and perhaps later, the river was fordable here, and a raised grass-grown causeway marked by trees still carries the line of the old road through the water meadows of Stoke Park as far as the south bank of the river. This road formed the link between Chertsey Abbey and its possessions at Cobham and Bookham until the surrender in 1537, but afterwards rapidly decayed, as the heavy land of the Common becomes impassable in winter. The road evidently had to be moved from time to time to more solid ground, for Walter Hudson of Great Bookham left by his will of 1523 twenty pence "to the Causey towarde the Comyn there as most new is" (8).

In the 16th century there was a certain amount of valuable timber, for in 1538 the building accounts of Nonsuch Palace record that in June and July Stephen Chrispian, one of the royal carpenters, rode to "Bristow Wood, Start Wood, Lee Wood, Ewwod, Grovelond, Sowthewood, Ebbesham (Epsom) Common, and Bowcham (Bookham) Common" to mark and choose out timber for the King's works, and that a few months later three carpenters rode "to Horley, Bristow, Lea, and Bowkham woods, Cobham park, Bowkham Common, Green Dean, Borsam Crosse, Estey, Godston and Rotherwik," no doubt for a similar purpose (9).

As a result of the lands of Chertsey Abbey coming into the possession of the Crown, a survey of Great Bookham was made in October 1548 (10), the earliest description of Bookham which is known to survive. No information is given concerning the commons, but certain holdings are mentioned as lying "next to Northwood" and these lands can be identified with some of those included in the survey and map of 1614. So far as it is possible to work backwards by comparison of the surveys of 1614 and 1548, it seems that the intervening period, covering only two generations, produced more inclosure from the Common than the preceding two centuries, while inclosure during the last three hundred years has been negligible.

This may well have been due to the anxiety of the new landlord (Lord William Howard, soon afterwards created Lord Howard of Effingham) to increase his annual rentroll, but it is less easy to account for the very slight changes of the past three centuries; probably several different factors played their part. Bookham, which had been a market town in monastic times (Henry III in 1243 granted a weekly market and a two-day fair at Michaelmas), declined in importance, and the population remained almost stationary. That this was the case can be shown from the documentary evidence, for the total number of houses in Great Bookham parish in 1614 was 85 (11) and the number was still

the same in 1674 (12), while the total had only risen to 113 in 1811 (13). At the later date the population was 606, divided into 120 families, an average of almost exactly five persons to each family. In 1801 the earliest census return gave the population as 587, so that at the turn of the century the period of rapid increase was already beginning.

Using the ratio of 5:1 to obtain the 17th century population, we arrive at 425, which is probably very close to the true figure. It is notoriously difficult to use Domesday Book as a substitute for a census, but the householders mentioned amount to 40, namely Gunfrey, the holder of a hide of land, 32 villeins, 4 bordars (cottagers), and 3 serfs. Supposing the same ration of 5:1 to apply, the population was then about 200, and thus did not double itself until five centuries had passed, though this was largely due to the Black Death in the 14th century.

In addition to Bookham's stagnation, the inclosures from the common waste in the 16th century must in the long run have been resented by the smaller copyholders, whose livelihood depended largely on their pasturage rights on the wasteland. So far as it is possible to judge from the available records, the smaller tenants were in a strong position in 1614, for out of 62 tenements in the manor of Great Bookham (not the whole parish), 36 were held by separate tenant-occupiers, while 21 were held by a group of eight "landlords" who sub-let their holdings (14). Since the independent smallholders were in a majority of over 4:1, they must have wielded some power in the manorial court, which had to approve all the inclosures made.

The earliest evidence of inclosure which can be found in the extant Court Rolls dates from 1556, when a beginning was made in the formation of the small isolated set of closes now known as the "Isle of Wight." The entry runs, in translation, as follows:—"To this Court comes John Arnold and seeks licence from the Lord to build a house on the Common of Great Bookham in a certain place there next 'le Slade Bushes' (i.e., the valley bushes) and upon this his Steward by the assent of the tenants there assigned to the same John half an acre of land on the common of Bookham aforesaid in a certain place there next the Common of Little Bookham next 'le Slade Bushes' to have to him and his heirs at the will of the Lord according to the custom of the Manor by Copy of Court Roll by rent of 8d per annum, Suit of Court, fine two capons and for fine after alienation two fat capons" (15).

Three more cottages were erected under similar circumstances on adjoining plots by the end of the century, viz., "a cottage and 1 acre of customary land lying in 'le North Common' . . . fine 4d, heriot 4d," held by John Hill and his wife Cicilia in 1605 (16); "one acre of waste in the North Common and a cottage lately . . . erected there" held by Richard Tayler and Mary his wife in 1607 (17); and "a cottage with appurtenances in the common called 'le North-common'" which John and Alice Payne held in 1615 (18). The folio which contained the description of these holdings is missing from the Survey of 1614, but fortunately there is an enrolment concerning that belonging to Richard and Mary Tayler:—"Richard Tayler and Mary his wife hold by Copy

of Court Roll dated (1 Oct. 1607) . . . a Cottage with an acre of waste in 'le North Common' lately erected by him to have to the same Richard and Mary for the term of their lives and of whomsoever of them lives the longer, at the will of the Lord, etc., by a rental per annum of 4d, and 4d in the name of a heriot, with remainder to John Tayler their son and his heirs for ever" (19).

At the time of the survey John Arnold's cottage had passed into the hands of William Collinson and the ground had increased from $\frac{1}{2}$ acre to 1 acre; the rent was still 8d but the fine in kind had been commuted to 3s 4d in money and a heriot in cash of 2s had been fixed (20). Further small inclosures were still being made in 1614, for at the Court of 6th October "the Lord granted by his Steward Thomas Collett 'generosus' to Nathaniel Maynwaringe a parcell of land containing by estimation one acre and a half lying next the land late of William Collynson clerk and Elizabeth his wife lying in the Common of Great Bookham near 'le Slade bushes' . . . at 4d per annum etc." (21).

The Survey of 1614 affords the earliest description of the Common, proceeding under the heading "Wastes and Commons":—"The Lower or North Common there abutteth on the North parte on the lands and tenements called the Northend: Fetcham Common adioyneing therunto on the East: on the South it is encompassed with other severalls belonging to this Mannour and the Mannour of Eastwick and on the West it adioyneth to the Common belonging to Little Bookeham haveing upon the same some small Tymber trees but of no value except it be for fewell and contayneth besides the Cotages on the west side therof 353 (acres) 0 (roods) 11 (perches)" (22). It will be noted that there were no longer any good timber trees on the Common; probably a very large amount of Wood had been taken for the Nonsuch Palace works three-quarters of a century earlier.

The survey was made by Thomas Clay, a very competent land surveyor of the time, who was an authority on his subject and author of "A chorologicall discourse of the well ordering disposing and governing of an honourable estate," published in 1618, which ran into a third edition in 1624, besides numerous unpublished treatises on mathematics, logarithms, field surveying, the use of the theodolite, etc. His calculated areas seem to be remarkably accurate, and we may therefore accept his estimate of 353 acres as roughly correct. In giving the bounds of Great Bookham, Clay mentions certain parts of the Common: the eastern boundary of the parish went "by the River eastwards to East Bickney, then it turneth southwards by Haters Garden to the Pirrie Crofte and soe by Upcroft to Willis Heron, from thence along the Common to the Marked Oake and so still southward to Bushey Feild Corner . . .," while the western boundary ran "into Preston Streete keeping along the same streete northwards to Burnams Green and soe to Potters Hill, from thence some what Northwest to the north Corner of the Burrows and so flatt North over the Common to Lippers Feild: from thence by Hill Place to Wrenne Hole, and so still northwards to Muck Crofte . . ." (23).

We learn from the survey that, as might be expected, the small protruding garden in front of "Foxglove Cottage" in Preston Street, had been taken from the common; in 1614 William Arnold held it by Copy of Court Roll, the land being described as "a little parcell of wast enclosed lying just befor the dore of his tenement scituate at Potters Hill for which he is to pay a heriott at every death and alienation, which said parcell conteyneth 20 perches and payeth yearely 2 little Capons" (24). The survey also gives us definite information concerning the recent inclosure of some $2\frac{1}{2}$ acres from the north side of the common: "Mr's Crosse holdeth . . . by Coppy of Court Roll a parcell or Close of pasture called New Close lying at North end aforesaid lately enclosed out of the Common there, abutting on the East South and West upon the said Common and on the North upon a Close called Rydones contayneing 2 acres 2 roodes 18 perches and payeth yearelie—2d" (25). This New Close is marked on the 1934 edition of the 6" scale Ordnance Survey Map, as "The Birches."

Lastly, among the Memoranda, we find that "Anthonie Smyth hath taken in and encroached of the Lords waste a small garden place adioyning to his Customarie Tenemente at Preston streete contayneing about some 24 feete in length and 18 feete in breadth which is not yet presented by the Jury, neither compounded for with the Lord, nor arented to his use" (26).

The manor court made orders from time to time to regulate the rights of pasture on the waste; for example in 1614 it was presented "that Edmund Hudson, Edmund Wilkyn, Friswid Crosse widow, Thomas Wood of Bagden, Robert Rogers of Sole and Thomas Martir and all others who keep their sheep on the Commons of this lordship have a day for removing their sheep before the 3 May next under penalty for each of them—10s" (27).

Very little alteration took place during the late 17th and 18th centuries; in 1721 the Lord of the Manor's rights included the ownership of "all those several pieces of woodland containing 200 acres lying in upon or near two several Commons belonging to the said manor of Great Bookham called Bookham Upper Common and Bookham Lower Common in the . . . parish of Great Bookham" (28). About 1804 a very fine map, on a scale of 20 inches to one mile, was made of the whole parish of Great Bookham, and the reference book to this gives the area of Bookham Common as 348a. 2r. 23p. (29). Some 2 or 3 acres had been added to the area of the Isle of Wight on its western side, but otherwise the boundaries are the same as those shown on the map of 1614. The odd acre or two unaccounted for in the difference between the two estimates probably represent the land granted to Nathaniel Maynwaring, after Clay had made his survey and calculations; Maynwaring's plot is marked only with a dotted line on the 1614 map. During the 19th century some 8 acres of the south-eastern corner of the common were inclosed next to the Fetcham boundary, and a small plot at Markoak Gate, while in 1885 the railway from Leatherhead to Effingham Junction was opened, resulting in the loss of some three acres. The area of the Common in 1896, inclusive of the ponds, was 332a. 1r. 27p. One of the ponds, now dry,

had been marked as "A fish-pond" on the map of 1614, perhaps indicating that it was kept artificially stocked with fish; it was almost certainly a relic of monastic times, when the monks of Chertsey required large supplies of fish for days of fasting and abstinence. Part of the discrepancy between the ancient and modern figures for the area is due to the exclusion of made roads from the latter. After the sale of the Eastwick Park Estate, the Common with the remaining manorial rights was purchased by subscription, and vested in the National Trust.

The history of the western part of the Common, belonging to Little Bookham, is less easy to follow, for few early documents survive. Enough of the enclosure boundaries is shown on the 1614 map of Great Bookham, to show that the common's extent from North to South was the same as it is to-day, but no survey of the manor is known, and the Court Rolls do not begin until 1633. In 1656 William King was presented to the Court for encroaching on the Common and building a house there—he was ordered to be fined £5 if it had not been pulled down by the following Michaelmas (30). At the same Court it was presented "that Beavin being no Tenant of this Mannor doth oppress ye Common of this Mannor by keeping certeine Sheepe thereon and to forbear to doe the like againe upon payne of 1s a Sheepe. One halfe to the Lord the other half to the Pownder."

In 1757 the Homage presented "John Richball for inclosing and taking in part of the Common and we order him to lay the same open before Michaelmas Day" (31). This Court also recorded a perambulation of the bounds; the "Jury and some of the Antient Inhabitants," while following the western boundary "came out on the Common at the Drill of Water and made a Cross on an Oak and across the Comon by the drill," and after taking in the north end of the manor, went "' thro' the Orchard to Hill Place taking in the House and Barns and came out on the Common and made a mark on an Ash in the Common and on a streight line to John Richbald's Corner and made a Cross on the Ground there and from thence on a Streight Lane (*sic*: line) to Burroughs Corner."

Three years later William Symonds "encroached upon the Common of this Mannor by cutting the Bushes and carrying away the same. And the Homage . . . Amerce him for the same Offence 1£" (32). Several very small inclosures were made in the 18th and early 19th centuries, on the west side of the Common, but otherwise there can have been little alteration in the limits of the waste for several hundred years. In 1924, two years after the acquisition of Great Bookham Common by the National Trust in 1922, Little Bookham Common amounting to 75 acres was presented to the Trust by the Lord of the Manor, the late Henry Court Willock Pollen, Esq.

Bookham Common, like most commons nowadays, is thought of principally as an open space for public recreation, but it may not be out of place to say a few words upon the even more vital uses of the wasteland in earlier periods. For a description of the mediaeval and later methods of farming upon the old system, the reader must be referred to Mr and Mrs Orwin's excellent book (33) which describes both the system itself,

and the history of Laxton in Nottinghamshire, now the only English survivor.

The principle adopted depended upon the holding of land by the villagers *in common*, and not as purely personal property; this applied both to the arable fields, which were ploughed and cropped, and to the waste-lands, which were stocked with animals. At the same time, the individual's share of the land, and his cattle, were his own property, subject to compliance with the customs of the manor.

At Bookham, most of the villagers had small private plots of enclosed land, in addition to their holdings in the open fields, but these closes would have been quite insufficient to provide constant grazing for their stock, even when allowance is made for the use of the stubbles after harvest, and for sheep being put to run in the fallow-field of the village. Owing to the three-course system, each of the three great arable fields would lie fallow once in three years, but the weeds of the fallow field would be inadequate food for any large number of sheep. Consequently the poor man's livelihood depended on the amount of waste-land which could be used by him as common pasture, and the number of beasts which he was allowed to put out on it. Horses, oxen, cows and sheep were the animals counted "commonable," but special rights were acquired by ancient usage for others, such as donkeys, pigs and geese.

In addition to his dependence on the common for grazing, the commoner derived from it other necessities, including gorse, twigs and loppings for fuel, known as *fire-bote*; heather or turf for litter or for use as fuel like peat, called *turbary*; and wood for the repairs of houses and hedges, technically *house-bote* and *hedge-bote*. All these rights only extended to the amounts required by the commoner for his own use on his village holding, and could not be sold or transferred. The Manorial Court, composed of the villagers themselves, presented offenders against the customs, and everyone had a very practical interest in the maintenance of these local laws. Whatever the faults of the old methods may have been, they did at least safeguard the common good without undue sacrifice of the individual, and besides making it possible for the poor man to have his own "three acres and a cow," found means for him to feed his cow, and some sheep as well.

REFERENCES.

- (1) E. Ekwall: *Oxford Dictionary of English Place-Names*; cf. English Place-Name Society, Vol. xi, *Surrey*, p. 99.
- (2) Victoria County History, *Surrey*, i, 309a, 321a.
- (3) British Museum, Lansdowne MS. 434, year 17.
- (4) *Ibid.*, year 14.
- (5) Cf. E.P.-N.S., Vol. xi, p. 273, where "Trashurst" in Dorking is associated with "trash" in the dialect sense of "cuttings from a small wood or copse."
- (6) B.M., Lansdowne MS. 434.
- (7) Public Record Office, E. 164/25—Cartulary of Chertsey Abbey.
- (8) Principal Probate Registry: Archdeaconry Court of Surrey, Register MATHEWE, f. 189.

- (9) Letters and Papers of Henry VIII, Vol. 13, Pt. II, 1538, p. 132, 133, 342, iii, v.
- (10) P.R.O., E. 26/168, f. 106 ff.
- (11) Survey and Map of Great Bookham in 1624, by Thomas Clay. The originals are in the possession of the National Trust. A complete transcript, with copy of the map, by J. H. Harvey, are in the library of the Surrey Archaeological Society, Castle Arch, Guildford.
- (12) Hearth Tax Assessment, 1674. P.R.O., E. 179/188/481.
- (13) *V.C.H., Surrey*, iv, 448.
- (14) Survey of 1614, see note 11.
- (15) Court Rolls of Great Bookham, Court of 15 Apr. 1556; in the possession of the National Trust. Some extracts are included in a typescript "Materials for the History of Great Bookham." by J. H. Harvey, deposited with the Surrey Archaeological Society.
- (16) *Ibid.*, Court of 15 May 1605.
- (17) *Ibid.*, Court of 1 Oct. 1607.
- (18) *Ibid.*, Court of 5 Oct. 1615.
- (19) Survey of 1614, Inrollment No. 17, fo. 4, 1st paging; Transcript, §19.
- (20) Courts of 4 Mar. 1607/8; 4 Nov. 1613; 25 May 1614.
- (21) *Ibid.*, Court of 6 Oct. 1614.
- (22) Survey of 1614, f. 16, 2nd paging; Transcript, §108.
- (23) *Ibid.*, f. 7, 7b, 1st paging; Transcript, §36.
- (24) *Ibid.*, f. 4, 2nd paging; Transcript, §73.
- (25) *Ibid.*, f. 2, 2nd paging; Transcript, §60.
- (26) *Ibid.*, f. 17, 2nd paging; Transcript §111.
- (27) Court Rolls, Court of 6 Oct. 1614.
- (28) Indenture enrolled on Close Roll 8 Geo. I pt. 4 (P.R.O., C. 54/5188).
- (29) Map and Reference Book of Great Bookham, Surrey County Record Office, Kingston upon Thames.
- (30) Court Rolls of Little Bookham, Court of 21 Apr. 1656; now in the custody of Messrs Carter & Swallow, 61 Carey Street, London, W.C.2. Some extracts are included in an appendix to the typescript referred to in note (11) above.
- (31) *Ibid.*, Court of 1 June 1757.
- (32) *Ibid.*, Court of 22 Oct. 1760.
- (33) C. S. & C. S. Orwin: *The Open Fields*; Oxford U.P., 1938.

The Survey of Limpsfield Common.

SIXTH YEAR.

Rabbits on Limpsfield Common.

By J. L. HARRISON, A.R.C.S., B.Sc., F.R.E.S.

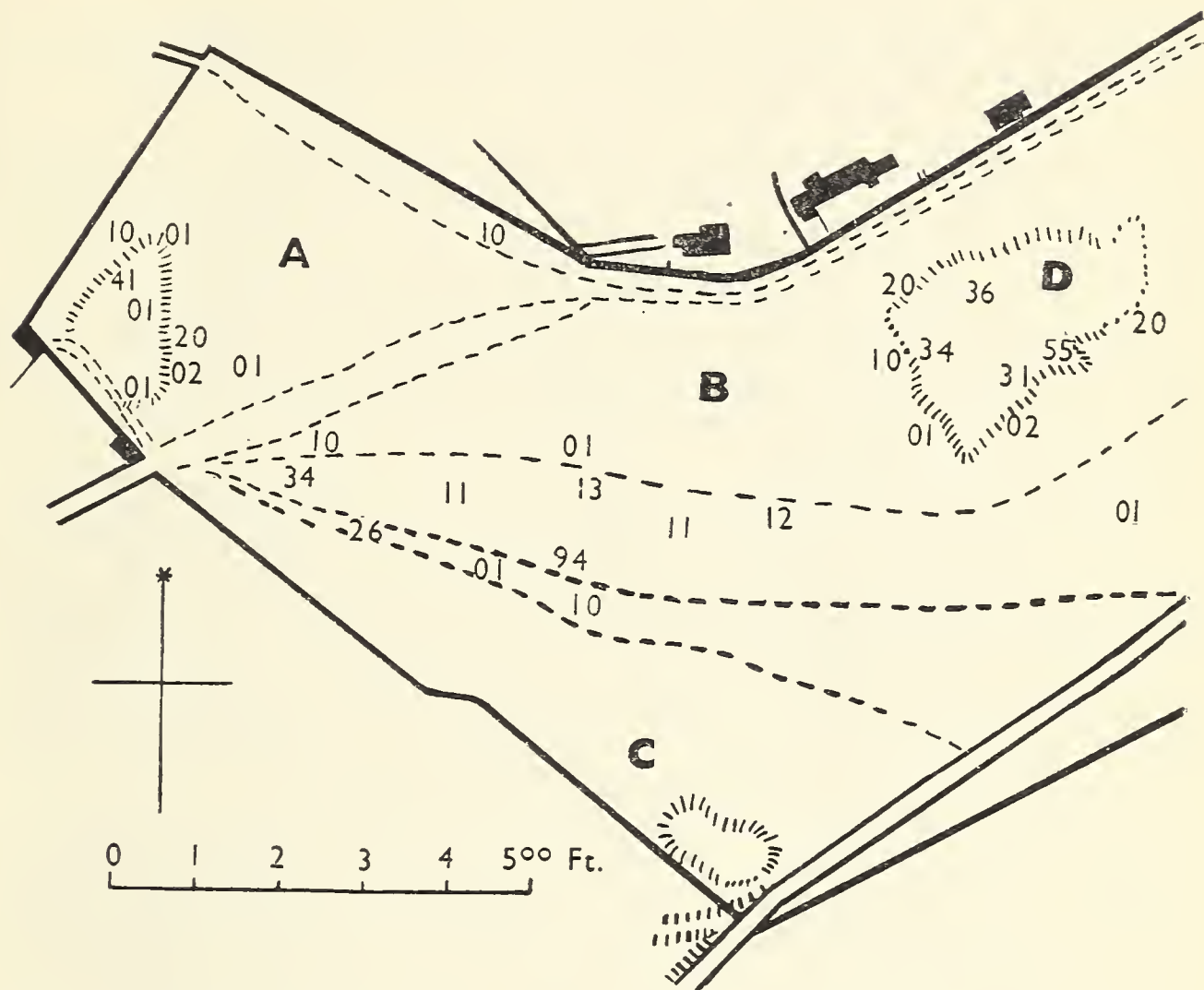
THESE observations, though incomplete, are published now in order to put them on record until work can be resumed.

In February 1938 an attempt was made to map all rabbit burrows on the Common, and in the S.W. corner, comprising areas A, B, C, D and part of E,* the survey was completed. Each hole found was recorded either as occupied at the time or recently or as disused. The criteria used were the presence or absence of faeces, footprints, freshly excavated earth and dead leaves or other materials blocking the hole.

*For an account of these areas, see Parmenter, L., and Thomas, C. H. R. (1937): *The Limpsfield Common Survey*, *L.N.*, 1936, pp. 46-48.

Fig. 5. DISTRIBUTION OF RABBIT BURROWS IN THE S.W. CORNER OF LIMPSFIELD COMMON.

Based upon the Ordnance Survey Map, with the sanction of the Controller of H.M. Stationery Office.



The positions of the various groups of holes are shown on the accompanying map (Fig. 5). The position of each group is marked by a two figure number, the first figure showing the number of occupied holes, and the second the number of disused holes. It will be seen that there are 47 occupied holes distributed as follows: 7 in pit A, 19 in pit D, 20 scattered in the southern half of area B, and one by the north boundary fence. The 50 disused holes are similarly distributed.

Grasshoppers on Limpsfield Common.

By J. L. HARRISON, A.R.C.S., B.Sc., F.R.E.S.

An apology is needed for the publication of observations so incomplete as these. The object is to put them on record until work can be resumed.

On the 3rd and 8th June 1938, a survey was made of the distribution of short-horned grasshoppers (*Orthoptera*, *Acrididae*) on the Common. Each area and sub-area (see Parmenter and Thomas, 1937) was visited and each species recorded as seen or not seen there; no attempt was

made to record abundance. Only three species were seen, *Chorthippus bicolor* (Charp.), *Omocestus viridulus* (L.) and *Myrmeleotettix maculatus* (Thnbg.); these were recorded from the areas as indicated by crosses in the following table:—

Area	A	B	D	E	F	Ka	Kb	L	M	Nab	P	Ra	Ub	V	W
<i>Ch. bicolor</i>	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+
<i>O. viridulus</i>	+	-	-	-	-	+	+	+	-	-	-	+	-	-	-
<i>M. maculatus</i>	+	+	-	+	-	-	-	+	-	-	-	-	+	-	+

No grasshoppers were seen in areas C, G, H, Q, Rb, S, T, Ua, Uc, X, Y, Z.

It is, of course, absurd to attempt to draw conclusions from such inadequate evidence, but two observations are worthy of note.

Ch. bicolor was the most abundant grasshopper at Limpsfield. This is in contrast with Bookham Common, where *Ch. parallelus* (Zett.), which was not recorded from Limpsfield, was, in 1942, the more abundant of the two species.

A comparison with Robbins (1938) and the vegetation map (Castell, 1939) shows that if each area be classified as either mainly woodland or mainly heath, then grasshoppers are recorded from only one (F) of the nine woodland areas and from all but three (Rb, S, Ua) of the eighteen heath areas, large parts of which are dominated by *Pteris*, *Calluna*, *Ulex*, and grasses. Of these three, two (Ua and S) were taken up largely by the golf course and, in spite of careful search, no grasshoppers were seen on the fairways, so perhaps they dislike the game.

Each area, however, contains so many different plant associations that to call any of them "woodland" or "heath" is likely to be misleading. It is found, in fact, that the lettered areas are quite unsuitable for recording distribution; they are too large; there are no convenient means of referring to points or to small areas; and they do not represent uniform habitats. They suffer a further disadvantage in being neither wholly topographical nor wholly vegetational. It is suggested that, when work is resumed on the common, the lettered-area reference system be discarded and, for purely topographical references, a grid system be adopted. The vegetation map (Castell, 1939) could be brought up to date without much difficulty and checked yearly, a revised edition being issued as necessary. In this map the Common is divided into about 160 areas, and if some system of referring to these areas could be devised, it would form an excellent base for any further distribution surveys.

REFERENCES.

- Castell, C. P. (1939.) Limpsfield Common Vegetation Map, *L.N.*, 1938, opp. p. 60.
 Parmenter, L., and Thomas, C. H. R. (1937.) The Limpsfield Common Survey, *L.N.*, 1936, pp. 46-48.
 Robbins, R. W. (1938.) Preliminary Observations on the . . . Vegetation of Limpsfield Common, *L.N.*, 1937, p. 50.

ERRATUM.

Lond. Nat., 1941, p. 34: (E) in Rabbit Holes (Area C): for C read A.

The Epping Forest Survey.

A PRELIMINARY ACCOUNT OF THE ECOLOGICAL WORK OF THE CHINGFORD BRANCH AT THE CUCKOO PITS IN 1942.

Report by the Branch Council:—W. A. Wright, Chairman; D. G. Tucker, Secretary; J. H. G. Peterken, E. T. Nicholson, E. B. Pinniger, K. E. Hoy.

WHEN the Chingford Branch recommenced activities in January 1942, it was decided to undertake a series of surveys of representative portions of the Forest near Chingford, and the first area selected was that surrounding the Cuckoo Pits. A small area was considered desirable, as the resources of the Branch are small, and the provisional boundaries enclose an area approximately 500 × 250 yards. A preliminary map was made, and the area was subdivided into 14 vegetation units. The map has been revised from time to time, and the accompanying one (Fig. 6 opposite p. 44) is thought to be reasonably correct, except that footpaths have been shown somewhat straightened for simplicity. It is intended to be used for recording and for work in the field, and copies may be obtained from the Branch Secretary.

The south-western boundary of the area is the small stream known as the Cuckoo Brook, and from this the land rises perhaps 20 feet, being capped with a bed of gravel over its highest portion, in which lie the series of shallow stagnant ponds known as the Cuckoo Pits. To the north, the northern edge of Pear Tree Plain (vegetation area M) forms a boundary; the southern and part of the eastern boundaries are formed by grassy "rides"; the north-western, and middle part of the eastern, boundaries are rather artificial, being formed by not-too-distinct footpaths.

The ponds comprise five vegetation units. Pond G is the largest, being about 45 × 25 yards. It is almost completely overgrown with vegetation, chiefly sallow and rushes; there are considerable quantities also of bur marigold (*Bidens cernua*) in the autumn, and bitter-sweet (*Solanum dulcamara*). The greatest depth is about 2 ft. 6 ins., and in the late summer of 1942 the pond became very nearly dry. The water teems with small animal life; on one occasion a sample of the water contained about 15 water-fleas (*Daphnia*) to the cubic cm. Other crustacea, including *Cypris* and *Cyclops*, and numerous other microscopic forms of animal life (including many protozoa) are common.

Pond K is almost the same area, being about 35 × 30 yards. However, only about one-third of its area is overgrown with vegetation; the remainder is open water, except for patches of white water-lily (*Nymphaea alba*) and *Potamogeton natans*. The overgrown portion is occupied chiefly by reed-mace (*Typha latifolia*) and bur-reed (*Sparganium*

sp.) with some rushes. This pond does not dry up in the summer. The ground to the north is marshy, and is included in area K. *Sphagnum* moss occurs in both these larger ponds.

Ponds J and H, about 100 sq. yds. in area, dry up completely for some months, and so far have shown little of interest.

Pond area E is a series of ten mostly very small ponds and marshy areas, which also dry up completely in the summer. Rushes form a considerable proportion of the vegetation.

The woodland consists of five vegetation units, A, B, C, D and L. In all of these, the dominant tree is hornbeam, with pedunculate oak subdominant. Tansley, in his book "The British Islands and Their Vegetation," 1939, says generally ". . . it is probable that hornbeam would in no case dominate the oaks with which it is associated since its height growth is not so great, though it casts a deeper shade" (p. 257). The Cuckoo Pits district is evidently an exception to this general rule. Holly and hawthorn are common. The undergrowth is chiefly bramble, with some bracken on the gravel portion.

Pear Tree Plain (area M) is the only large open area; it is very damp. The vegetation consists of grasses of several species, sedges and rushes. *Deschampsia caespitosa* is locally dominant. The boundary on the north is a line of fine oaks, but on the south there is a dense tangle of hawthorn and blackthorn, with dog-rose and bramble, which is encroaching on to the Plain, and threatens eventually to overrun it.

The open, gravel-soil, area immediately surrounding the ponds E and G is considered a vegetation unit (F) and is covered chiefly with grasses, bracken, rushes, and a little bramble and heather (*Calluna vulgaris*).

The other two vegetation units are the rides (N) and the stream (P).

Methods of Recording the Vegetation. The common plants are recorded by means of quadrat charts and line transects, and fairly detailed vegetation charts have been made of the ponds. For the rest, lists of species are made with notes on their relative abundance.

Invertebrate Animal Life. It has not been possible to do very much work on this vast subject, owing to the absence of expert observers in most branches. However, the dragonflies have been studied in some detail, a preliminary list of butterflies and moths has been prepared, and a visit by Mr L. Parmenter led to a short list of flies. Some notes on gall-flies have been contributed by Mr J. Ross.

Birds and other Vertebrates. These have been studied relatively thoroughly. Of birds, 48 species have been recorded in the survey area, although 81 species have been observed in a larger area, 1 mile diameter, centred on the Cuckoo Pits. Evidence of breeding has been looked for, and 12 species have been recorded as giving such evidence in the survey area.

Other vertebrates are not numerous, only 7 species having been recorded in 1942.

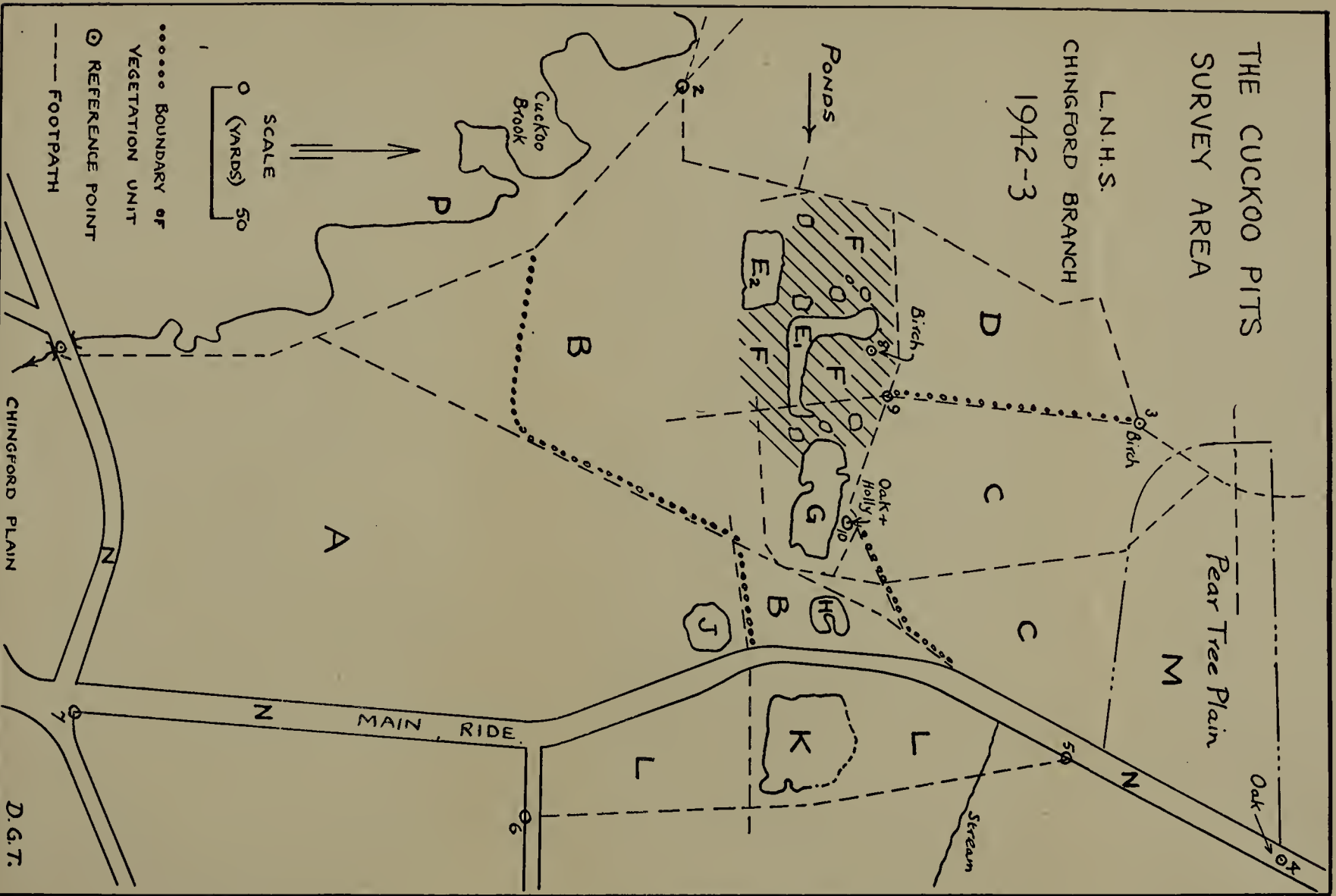


Fig. 6. Based upon the Ordnance Survey Map, with the sanction of the Controller of H.M. Stationery Office.

Official Reports for 1942.

Council's Report, 1942.

ONE more year of war conditions has seen the Society progress very favourably; our membership number has turned the corner, and instead of the decrease of past years, actually shows an increase of 18, to 540.

Especially gratifying is the improvement in the Chingford Branch; not only has its membership been augmented by about 40 per cent., but its scientific work, under the direction of its new Secretary, Mr D. G. Tucker, is proving most useful, particularly in the Ecological Survey that has been inaugurated in Epping Forest.

The London Naturalist, containing an illustrated Obituary of the late R. W. Robbins, was published, with its Supplement, *The London Bird Report*, rather late in the year owing to present disturbed conditions; it is hoped that earlier production may be possible in 1943.

The Treasurer's Report shows a better financial position than might have been expected during these trying times.

A continued, and augmented, influx of new members is a greater need than ever; the Council trusts that every individual will do all possible to bring in fresh recruits.

A. B. HORNBLOWER, *Hon. General Secretary.*

Librarian's Report, 1942.

A PART from official journals of other societies, there were few additions to the Library in 1942, but these included E. C. Arnold's *Bird Reserves* presented by Miss R. Davis, and a volume of Witherby's *Handbook of British Birds*, lost early in the war due to a defaulting borrower and kindly replaced by Messrs Austin and Bayne. Only 54 books were borrowed by members.

My attendances at the Library on meeting days had become so rare that in November I decided it would be best for the Society to find me a successor as Librarian. Mr T. L. Bartlett very kindly consented to take over the duty, and I should like to take this opportunity of thanking him. The disorder resulting from accumulations of unsorted periodicals, and from the flotsam and jetsam which the Library seems to attract, was most ably tidied up by Mr M. T. Hindson, who has busied himself for many months checking and restoring order to both the Library and its card index. To him also I am very grateful.

There is still insufficient shelf room in the Library for all the books, and another book-case would be a most serviceable addition to the Library (members with a book-case to spare, please note).

G. H. SPINNEY, *Hon. Librarian.*

Curator's Report, 1942.

COMPLETION of blast damage repairs to the bookcases and cupboards was effected early in the year, and the amount of £19 14s 6d received from the Treasurer was paid over in settlement. From this time the Society's property has been dust-free, entirely under lock and key, and the external appearance has become worthy of our Society.

In September I obtained special permission from the authorities to have the use of the corridor monthly on Tuesday evenings. I then invited the sub-curators to join me in overhauling the Collections.

I have satisfactory reports on the condition of the Ornithological property from Mr Austin and from Mrs Parrinder, and on the Entomological from Mr Pinniger. There have been a few additions to the bird skin and wing collections during the year.*

There have also been numerous additions to the Herbarium, which continues under the painstaking care of Rev. P. H. Cooke. The new black covers enclosing some of the genera add considerably to the appearance of the herbarium.

The nucleus of the Ecological collection is now placed under the care of Mr Castell in the long drawer under No. 3 herbarium. During the year this Section has received a valuable addition to its property by the gift of a photostat map and record of the Bookham Common area.

Mr Burkill informs me that few additions have been made to the Plant Gall collection but that work is still going on.

In conclusion, and briefly, I am satisfied that the *status quo* is being maintained and that the enthusiasm of a very small band of workers will keep in safe trust for our absent members that material proof of our practical activities represented in the corridor cases, cupboards, and shelves.

L. G. PAYNE, *Curator.*

Report of The Director of Sectional Organisation, 1942.

DESPITE absence of members and other adverse conditions, the Sections of the Society have managed to continue some activity.

The Bookham Common Survey has afforded the ECOLOGISTS opportunity for co-operative work with other sections and has fully justified this new venture. A very useful base map of the Common has been prepared by the Secretary and copies are available for members' use.

The ORNITHOLOGICAL SECTION, numerically the strongest, has carried on with its district recording and is also working in conjunction with the British Trust for Ornithology in the important Wood Pigeon inquiry. The sixth number of *The London Bird Report* has been completed and published.

*It is hoped that members will continue to send as many skins, wings and photographs as possible for the collections to the Sectional Curator, Mrs Parrinder.

The BOTANISTS have added 10 new species to our local district records and many fresh sheets of specimens have been placed in the Society's Herbarium.

Our smallest section, PLANT GALLS, is still active and recording.

There is little to report of the remaining sections, viz., ENTOMOLOGICAL, ARCHAEOLOGICAL, and RAMBLERS, all of which are handicapped by loss of active workers, but these and other sections have provided lecturers for our Syllabus and carried through some field meetings, the latter with varying degrees of success.

The GEOLOGICAL COMMITTEE is confining its activities to co-operating in the Bookham Common and Epping Forest ecological surveys. In the present anxious and trying conditions our Sectional System is proving its value and usefulness by keeping together those who have some degree of leisure, and it continues to act as the backbone of the Society.

S. AUSTIN, *Director of Sectional Organisation.*

Report of the Chingford Branch, 1942.

THE Branch recommenced activities in January 1942, and as the major part of its programme undertook an ecological survey of a part of Epping Forest. After discussion by the Branch Council, the Cuckoo Pits area was selected for detailed study, and a large amount of work has been done on the survey of the vegetation and bird life. Other aspects of the study have so far been only cursorily investigated, but it is hoped to cover these in more detail next year. Nine official ecological field meetings have been held, with an average attendance of 11, but, naturally, most of the work is done by individuals and small groups of members apart from official meetings.

Other outdoor work has included 6 rambles in the neighbourhood of Chingford, with an average attendance of 12.

Nine indoor meetings have been held during the year, with an average attendance of 20, and the talks and discussions have included two on Botany, two on Ecology, one on Ornithology, one on Entomology, one on Geology, and two on general subjects.

Ten new Branch Associates and two full members have been recruited by the Branch this year.

The affairs of the Branch are controlled by the Branch Council, which consists of six members. Five Council meetings have been held during the year, with an average attendance of 4.4.

Taking into account the war conditions, it is felt that the Branch has had a successful year.

D. G. TUCKER, *Branch Secretary.*

STATEMENT OF ACCOUNTS 1942: GENERAL ACCOUNT.

Balance, 1st November 1941	...	...	...	£93 17 8	...	...	...	...	£10 10 0
Stationery Sold	...	...	...	0 7 6	...	...	...	...	26 11 2
Interest on Post Office Account	...	...	...	5 3 6	...	...	...	...	2 6 4
Interest on £75 War Stock	...	...	...	2 12 6	...	...	...	...	9 10 3
Subscriptions and Entrance Fees	...	...	...	184 12 6	...	...	...	...	3 5 4
									11 5 0
									2 0 0
									4 3 6
									6 0 0
									45 0 0
									6 2 0
									19 14 6
									62 4 5
									£208 12 6
									78 1 2
									£286 13 8
Balance, 31st October 1942	...	...	...	...	...	...	...	...	£71 6 6

LONDON NATURALIST ACCOUNT.

Donation	...	...	...	...	£0 5 0	...	...	...	£71 6 6
Advertisements	...	...	...	...	3 2 6	...	...	...	...
Sales of <i>London Naturalist</i> and <i>London Bird Report</i>	...	...	...	...	5 10 4	...	...	...	...
Reprints and Maps	...	...	...	...	0 4 3	...	...	...	...
Transfer from General Account	...	...	...	...	62 4 5	...	...	...	...
									£71 6 6

The balance on the Life Composition Account remains at £165, and the balance on the Reserve Account remains at £175. The balances are invested in 3½% War Stock or are on deposit in the Post Office Savings Bank.

Audited and found correct, 14th December 1942.

F. G. DELL, Treasurer.
 J. ROSS,
 J. H. G. PETERKEN, Auditors.

List of Members.

(Corrected up to 28th June 1943.)

It is particularly requested that Members will inform the Secretary as soon as possible of any change of address.

For list of abbreviations, see end.

Honorary President:

PROF. SIR FREDERICK GOWLAND HOPKINS, O.M., M.A., M.D., F.R.C.P., F.R.S.

Honorary Vice-Presidents:

SIR LAWRENCE CHUBB. E. A. COCKAYNE, M.A., D.M., F.R.C.P., F.R.E.S. PROF. M. GREENWOOD, D.Sc., F.R.S., F.R.C.P. A. HOLTE MACPHERSON, B.C.L., M.A., F.Z.S.
L. B. PROUT, F.R.E.S. J. ROSS.

Honorary Members:

- 1916 Brown, A., F.Z.S., 64 Sancroft Road, Eastbourne, Sussex. (Arch., Geol., Orn., R.)
1933 Bryce, E. J., Nelson Road, Killara, Sydney, N.S.W. (Zoo.)
1927 Le Souef, A. S., C.M.Z.S., R.A.O.U., Taronga Zoological Park, Sydney, N.S.W.

Members:

- 1928 Alexander, O. A., c/o 35 Ellington Road, Hounslow, Middlesex. (Ent.)
1939 *Allen, Miss D. (address not known).
1932 Angell, Miss K. W., Stockwell College, Watcombe Park, St Marychurch, Torquay, S. Devon. (Bot., Ecol., Ent., Orn., Pl. G., R.)
1932 Arbon, Mrs J. A., Brookside, Eversley Park Road, N.21. (Arch.)
1942 Archer, H. A., 76 Endlebury Road, E.4. (Orn.)
1939 Ashby, C. B., 20 Denmark Road, Carshalton, Surrey. (Orn.)
1892 Austin, S., F.Z.S., 43 Darent Road, N. 16. (Arch., Bot., Ecol., Orn., R.)
1931 Back, Dr Marjorie, 10 Great George Street, S.W.1. (Bot., Orn.)
1929 *Bagnall, R. S., D.Sc., F.R.S.E. (address not known). (Bot., Ent., Pl. G.)
1927 Baily, Miss A. R., F.Z.S., Cressex Lodge, Binfield, Berks. (Arch., Bot., Ent., Orn., Pl. G., R.)
1924 *Baker, E. C. Stuart, J.P., O.B.E., F.Z.S., F.L.S., M.B.O.U., H.F.A.O.U., 6 Harold Road, S.E.19. (Orn.)
1941 Ballingal, N. C., 120 Cranmer Court, S.W.3. (Orn.)
1934 Banks, H., 172 Cromwell Road, Hounslow, Middlesex. (Bot., Orn.)
1926 Barnes, Mrs E. C., M.B.O.U., Hungerdown, Seagry, Wilts. (Bot., Ecol., Orn.)
1937 Barnett, R. L., 30 Hans Road, S.W.3. (Bot., Orn.)
1941 Barrington, F. J. F., 48 Wimpole Street, W.1. (Orn.)
1941 Bartlett, T. L., B.A., 91 Woodend Avenue, South Harrow, Middx. (Ecol., Orn.)
1933 Bastian, Miss S., 83 Gower Street, W.C.1.
1903 *Battley, Mrs, 1 Sydney Road, Guildford, Surrey.
1932 Bayliss, C. V., 38 Colwyn Avenue, Blackpool. (Arch.)
1915 Bayne, C. S., Savage Club, 69 Brook Street, W.1. (Ecol., Orn.)
1936 Beckwith, Major W. M., D.S.O., 59 Albert Hall Mansions, S.W.7. (Orn.)
1943 Beesley, J. S. S., 63 Warren Avenue, Bromley, Kent. (Orn.)
1929 *Benson, R. B., M.A., F.R.E.S., British Museum (Natural History), S.W.7. (Bot., Ecol., Ent., esp. Sawflies, Orn., Pl. G., R.)
1932 Bentham, C. H., Eothen, Epsom Lane, Tadworth, Surrey. (Orn.)
1937 Best, Miss M. G., M.R.C.S., L.R.C.P., 115 Widmore Road, Bromley. (Orn.)

- 1940 Beven, G., Cromer Hyde, Central Road, Morden, Surrey. (Orn.)
- 1941 Bispham, T., B.Sc., A.I.C., 2 Chestnut Avenue, Wembley, Middlesex. (Orn.)
- 1937 Blackett, Miss F. R. F., 13 Cranley Place, S.W.7. (Orn.)
- 1930 Blair, K. G., D.Sc., F.R.E.S., 11 Durrington Park Road, S.W.20. (Ent.)
- 1939 Blake, E. A., 16 Lindsay Road, Worcester Park, Surrey. (Orn.)
- 1937 Blake, F. W., 16 Lindsay Road, Worcester Park, Surrey. (Orn.)
- 1937 Bond, Mrs M. T., 8 Messaline Avenue, W.3. (Orn.)
- 1941 Bourne, K. W., 47 West Way, N.W.10. (Ecol.)
- 1904 Bradley, S. W., 4 Lucton's Avenue, Buckhurst Hill, Essex. (Bot., Ent., Orn.)
- 1932 Braithwaite, Miss D. M., 18 Warren Road, E.4. (Orn.)
- 1910 Braithwaite, Miss N. A., 18 Warren Road, E.4.
- 1930 Brend, W. A., M.A., M.D., B.Sc., 14 Bolingbroke Grove, S.W.11. (Arch., Orn.)
- 1937 Brightwell, L. R., F.Z.S., White Cottage, Chalk Lane, East Horsley, Surrey. (Marine Life.)
- 1933 Bromley, Miss B., 12a Eton Road, N.W.3. (Orn., R.)
- 1942 Bromley, F. C., 93 Wolmer Gardens, Edgware, Middx. (Orn.)
- 1937 Brown, Miss B. E., Gresham Cottage, Granville Road, Limpsfield, Surrey. (Ecol., Orn.)
- 1926 Browne, Miss C. H., 11 St Mary's Walk, Harrogate, Yorks. (Arch., Bot., Orn., R.)
- 1940 Browne, Miss E. Gore, 3 Claremont House, Lithos Road, N.W.3. (Orn.)
- 1938 Buck, F. D., 49 Elthorne Road, N.19. (Col., Ecol.)
- 1930 *Burgham, Miss J. E., 2 Nevern Place, S.W.5. (Geol., Orn., R.)
- 1915 Burkill, H. J., M.A., F.R.G.S., 3 Newman's Court, Cornhill, E.C.3. (Bot., Ecol., Geol., Lep., Orn., Pl. G., R.)
- 1943 Burt, Miss E. H., 40 Bellfield Avenue, Harrow Weald, Middx.
- 1935 Butterworth, Miss M. H., The Caravan, Ash Walk, Warminster, Wilts. (Bot., Ecol., Orn.)
- 1928 *Campbell, J. M. H., M.D., 47 Arkwright Road, N.W.3. (Orn.)
- 1912 Capleton, A., Golfers' Club, 2a Whitehall Court, S.W.1. (Bot., Ecol., Mam., Orn., R.)
- 1936 Carrington, L. I., The Grey Cottage, Chipstead, Surrey. (Ecol., Orn.)
- 1933 Carter, J. S., Ph.D., M.Sc., F.I.C., 26 St John's Road, N.W.11. (Orn.)
- 1932 Castell, C. P., B.Sc., 52 Graham Road, S.W.19. (Bot., Ecol., Geol.)
- 1936 Cawkell, E. M., 74 Alfred Road, Clive Vale, Hastings, Sussex. (Orn.)
- 1930 Chandler, S. E., D.Sc. F.L.S., 74 King's Road, Caversham, Reading. (Bot., Ecol.)
- 1931 Chubb, Sir Lawrence, 71 Eccleston Square, S.W.1. (R.)
- 1929 Coates, Miss N. H., Woodhouse, Beaumont Road, S.W.19. (Bot., Orn.)
- 1904 Cockayne, E. A., M.A., D.M., F.R.C.P., F.R.E.S., 16 Westbourne Street, W.2. (Biol., Lep.)
- 1925 Cocksedge, W. C., Hardwick House, Whitchurch, near Reading, Berks. (Arch., Bot., Ecol., Geol., Orn.)
- 1929 Cocksedge, Mrs, 6 Aldersmead Road, Beckenham, Kent. (Arch., Bot., Ecol., Geol.)
- 1907 Collenette, C. L., F.R.G.S., F.R.E.S., Parwich Hall, near Ashbourne, Derbyshire. (Api., Bot., Ecol., Ent., Orn.)
- 1936 Collett, R. L., 165/20 Abbey Road, N.W.8. (Orn.)
- 1914 Connoll, Miss E., 22 Ravenslea Road, S.W.12.
- 1904 Cooke, Rev. P. H., B.A., 22 Barnett Wood Lane, Ashted, Surrey. (Arch., Bot.)
- 1938 Cooper, J. M., c/o Fairview, Higher Drive, Purley, Surrey. (Orn.)
- 1939 Coote, F. D., F.R.E.S., 32 Wickham Avenue, Cheam, Surrey. (Lep.)
- 1939 Copithorne, Surgeon Lieut. R. E. C., R.L.V.R., M.R.C.S., L.R.C.P., D.C.H., late of H.M.S. Ark Royal, c/o G.P.O., London.
- 1937 Cornwallis, R. K., Collow Abbey, Wragby, Lincs. (Orn.)
- 1939 Couper, Miss L., 6 St John's Road, N.W.11. (Arch.)
- 1941 Cracknell, A. C., 39 Ravenscourt Gardens, W.6. (Ent.)
- 1942 Cramp, S., 97 Clare Court, W.C.1. (Orn.)
- 1937 Crispin, G. H., Meadowcroft, Abbot's Langley, Herts.

- 1936 Crompton, Miss C. E., Sesame Imperial and Pioneer Club, 49 Grosvenor Street, W.1. (Arch., Orn.)
- 1927 Cross-Rose, F., 20 Woolstone Road, S.E.23. (Orn.)
- 1892 Culpin, M., M.D., F.R.C.S., Fairview, Semaphore Road, Guildford. (Biol.)
- 1928 Cuningham, Miss D. W. M., Milford Cottage, Milford, Godalming, Surrey. (Bot., Ecol., Ent., Orn., Pl. G.)
- 1930 Cunningham, J., M.B.O.U., Drinagh, Kensington Road, Knocke, Belfast. (Orn.)
- 1936 Currie, P. W. E., c/o 102 Burdon Lane, Belmont, Sutton, Surrey. (Ecol., Orn.)
- 1943 Cyprian, Miss N. A., 2 Hadden Way, Greenford, Middx. (Bot.)
- 1892 Cyriax, R. C., 23 Aberdare Gardens, N.W.6. (Arch., Aryan question, Indo-European languages.)
- 1936 Daffarn, J. D., c/o 41 Woodside Avenue, N.6. (Orn.)
- 1920 *Dallas, J. E. S., 4 Herkomer Road, Llandudno, N. Wales. (Arch., Bot., Ecol., Orn., Pl. G., R.)
- 1925 *Dallas, Mrs Rosa F., 4 Herkomer Road, Llandudno, N. Wales. (Arch., Bot., Ecol., Geol., Orn., R.)
- 1940 Darlington, Miss I., M.A., 39 Craven Avenue, W.5. (Arch., Bot., Orn.)
- 1933 Davies, Miss E. B., Graffham, Petworth, Sussex. (Ent., Orn.)
- 1926 Deane, Miss M. B. H., Box 36, B.P.O., Tangier, Morocco. (Orn.)
- 1910 Dell, F. G., 55 Russell Road, Buckhurst Hill, Essex. (Micr., Orn., P.L.)
- 1928 Douglas-Smith, Miss K., 19 Thurlow Road, N.W.3. (Arch., Bot., Ecol., Orn.)
- 1942 Duffin, C. J., 4 Pendennis Road, S.W.16. (Orn.)
- 1934 Eales-White, Major J. C., T.D., F.R.E.S., F.Z.S., Squirrel Wood, Seven Hills Road, Cobham, Surrey (Arch., Ent., Orn.)
- 1936 Elcome, J. W., c/o 28 Dulwich Wood Avenue, S.E.19. (Orn.)
- 1936 Ellington, Miss M. L., 1st London Motor Co., Cam House, Campden Hill, W.8. (Orn.)
- 1936 Ellis, W. G., Wavecrest, Maesgwyn Road, Penrhyn Bay, Llandudno, N. Wales. (Orn.)
- 1939 Elphinstone, K. V., Artillery Mansions, S.W.1. (Orn.)
- 1928 Emberson, L. M., African and Eastern (Near East) Ltd., P.O. Box No. 17, Baghdad, Iraq. (Ecol., Orn.)
- 1927 English, Miss F., 4 Herkomer Road, Llandudno, N. Wales. (Arch., Bot., Orn., R.)
- 1942 Evans, L. R., 35 Champion Grove, S.E.5.
- 1939 Fairbairn, Miss C. E., c/o Westminster Bank Ltd., 94 Kensington High Street, W.8. (Orn.)
- 1939 Faulkner, Miss A. M. G., 127 Lower Richmond Road, S.W.14. (Arch., Orn., R.)
- 1940 Finch, Miss S. A., M.B., B.S., D.T.M. & H., 135 Palmerston Road, N.22. (Arch., Orn., R.)
- 1937 Fisher, J. M. McC., c/o Zoological Society of London, Regent's Park, N.W.8. (Ecol., Orn.)
- 1934 Fitter R. S. R., F.Z.S., M.B.O.U., 39 South Grove House, N.6. (Ecol., Orn.)
- 1924 Foster, J. B., B.A., 478 West Wycombe Road, High Wycombe, Bucks. (Orn.)
- 1938 Franks, Miss H., 21 Queen Square House, W.C.1. (Arch., Bot., Ecol., Orn., R.)
- 1937 Freeman, P., B.Sc., A.R.C.S., F.R.E.S., 8 Sebastian Avenue, Shenfield, Essex. (Ecol., Ent.)
- 1935 French, W. A., Brook Barns, Chigwell, Essex. (Bot., Orn.)
- 1939 Garrett, V. R., c/o 15 The Pryors, East Heath Road, N.W.3. (Orn.)
- 1932 Garrido, A. S., c/o The G.P.O., Birmingham. (Bot., Ecol., Geol.)
- 1933 Gaster, H., 8a Lunham Road, S.E.19. (Bot., Orn., R.)
- 1910 Gaze, W. E., 10 The Avenue, Highams Park, E.4. (Bot., Chem., Lep., Orn.)
- 1939 Gibson, Miss A., M.D., The Central Laboratory, Star and Garter Home, Richmond, Surrey. (Orn.)
- 1939 Gibson, Mrs G. M., 26 Gilston Road, S.W.10. (Bot., Orn.)
- 1931 Gillett, J. D., F.R.E.S., P.O. Box 40, Jinja, Uganda. (Ent., Rep.)

- 1942 Glanville, S. R. K., 53 North Road, N.6. (Orn.)
 1910 Glegg, W. E., F.Z.S., M.B.O.U., The Zoological Museum, Tring, Herts. (Orn.)
 1934 Godwin, C., 50 Lomond Avenue, Blackpool, Lancs. (Orn.)
 1934 Godwin, Mrs M. L., 50 Lomond Avenue, Blackpool, Lancs. (Orn.)
 1929 Goodfellow, Miss L., Flat 3, 7 Lyndhurst Gardens, N.W.3. (Orn.)
 1939 Goom, Miss E. M., 78 Elmfield Avenue, Teddington, Middx. (Orn.)
 1942 Gould, H. G., 35 Bergholt Avenue, Ilford, Essex. (Orn.)
 1927 Green, R., F.Z.S., Ruskin Studio, 7 New Court, Lincoln's Inn, W.C.2, and
 84 Elgin Road, Seven Kings, Essex. (Orn.)
 1899 *Greenwood, Prof. M., D.Sc., F.R.S., F.R.C.P., Hillcrest, Church Hill, Lough-
 ton, Essex. (Arch., Biol.)
 1920 Grinling, C. H., B.A., Redroofs, Peaslake, Guildford, Surrey. (Bot., Ecol.)
- 1927 Hale, R. W., 6 Grendon Gardens, Wembley Park, Middx. (Ecol., Orn.)
 1939 Hambly, E. H. T., M.B., B.S., F.R.C.S., Treharrock, Seer Green, Beacons-
 field, Bucks. (Ent., Orn.)
 1903 Hanbury, F. Capel, Westfield, Hoddesdon, Herts. (Lep.)
 1897 *Hanson, P. J., Burcroft, Village Road, Bush Hill Park, Middx. (Arch., Ecol.,
 Orn., R.)
 1921 Hardiman, J. P., C.B.E., B.A., Hyron's Cottage, Woodside Road, Amersham,
 Bucks. (Orn.)
 1942 Harris, L. F., 47 High Street, Weybridge, Surrey. (Orn.)
 1943 Harrison, D. L., Bowerwood House, St Botolph's Road, Sevenoaks, Kent.
 (Biol., Orn.)
 1942 Harrison, J. L., A.R.C.S., B.Sc., F.R.E.S. (Capt., R.A.S.C.), 12 Hexham Gar-
 dens, Isleworth, Middx. (Ecol., Ent.)
 1939 Haviland, Mrs B., 121 Ashley Gardens, S.W.1. (Bot.)
 1939 Haviland, Miss D. M., 121 Ashley Gardens, S.W.1. (Orn.)
 1938 Haviland, Miss G. M. B., 121 Ashley Gardens, S.W.1. (Orn.)
 1927 Hayward, J. F., Ph.D., M.Sc., 2/Lt., c/o 29 Mount Echo Drive, E.4. (Geol.,
 Zoo.)
 1902 Heath, G. H., M.A., 3 Bolney Court, Portsmouth Road, Surbiton. (Lep.)
 1937 Hett, G. Seccombe, F.R.C.S., F.R.G.S., F.Z.S., 86 Brook Street, W.1. (Ecol.,
 Icht., Mam., Orn.)
 1940 Hick, C. E. St C., Larkfield, Bracknell, Berks. (Lep.)
 1938 Highway, Mrs H. (address not known). (Bot., Orn.)
 1938 Hindson, M. T., 11 Holland Park, W.11. (Ecol., R.)
 1937 Höhn, E. O., c/o Belmont, Westfields, Leek, Staffs. (Orn., Ecol.)
 1932 Homes, Lt. R. C., c/o Park Cottage, Wisborough Green, near Billingshurst,
 Sussex. (Ecol., Orn.)
 1930 Hopkins, Capt. G., c/o Westminster Bank Ltd., Green Lane, Northwood,
 Middx. (Ecol., Orn.)
 1919 Horn, P. W., Stepney Borough Museum, 77 Whitechapel High Street, E.1.
 (Aqua., Orn.)
 1905 Hornblower, A. B., 91 Queen's Road, Buckhurst Hill, Essex. (Api., Arch.,
 Ecol., Orn., R.)
 1941 Hoy, K. E., 5 Beverley Crescent, Woodford Green, Essex. (Ent., Orn.)
 1938 Hurcomb, Sir Cyril, K.B.E., C.B., 12 Campden Hill Court, W.8. (Orn.)
 1939 Hussey, N. W., c/o Penwarne, Stonewall Park Road, Langton, Tunbridge
 Wells, Kent. (Hym., Orn.)
 1937 Hussey, S. V., 40 Flanchford Road, W.12. (Bot., Orn., R.)
 1930 Hutton, Miss R. E., Lytton Lodge, Codicote, Hitchin, Herts. (Bot., Zoo.)
- 1927 Jeffery, H. J., A.R.C.S., F.L.S., 14 Coppetts Road, N.10. (Bot.)
 1933 Johns, Miss L. J., 87 Morley Hill, Enfield, Middx. (Arch., Bot., Ecol., Orn., R.)
 1931 Johnston, F. J., West Park, Sidmouth, Devon. (Ecol., Orn.)
- 1942 Karthauser, B. F., 8a Lawn Road, N.W.3. (Orn.)
 1899 *Kaye, W. J., F.R.E.S., Chantrey Lodge, Longdown, Guildford, Surrey. (Lep.)
 1938 Keith, Miss C., 17 Abercorn Place, N.W.8. (Arch., Bot., Orn., R.)
 1942 Kemp, Mrs M. M., 33 Ellerton Road, S.W.18. (Orn.)

- 1934 Kerr, Mrs H. M. Rait-, 22 Elm Tree Road, N.W.8. (Arch., Ecol., Orn.)
 1936 Keywood, K. P., Croft Cottage, Hare Lane, Claygate, Surrey. (Ent., Orn.)
 1930 King, Miss C. A., M.D., 8 Lancaster Drive, N.W.3. (Arch., Orn., R.)
 1941 Kramer, J. A., 2 Northumberland Road, New Barnet, Herts. (Orn.)
- 1942 Law, Miss M. D. L., 90 Riverway, N.13. (Arch., Ecol.)
 1930 Ledlie, R. C. B., M.B., B.Sc., F.R.C.S., 64 Harley Street, W.1. (Bot., Orn.)
 1922 Lemon, Mrs M. L., M.B.E., J.P., F.R.G.S., F.R.S.A., F.Z.S., M.B.O.U., Hill-
 crest, Redhill, Surrey. (Orn.)
 1937 Lewer, F. A., 10 Oakhill Road, S.W.15. (Orn.)
 1919 Leyton Public Libraries (E. Sydney, F.L.A.), Central Library, E.10.
 1927 Lister, Miss G., F.L.S., 871 High Road, E.11. (Bot., Orn.)
 1926 *Littlejohn, H. A., 2 Brooklands Gardens, Ilford, Essex. (Bot., Orn., R.)
 1934 Locket, G. H., M.A., M.Sc., 1 Mount Pleasant, Harrow, Mx. (Ecol., Ent.)
 1926 *Longfield, Miss C. E., F.R.G.S., F.R.E.S., F.Z.S., M.B.O.U., 20 Pont Street,
 S.W.1. (Bot., Ecol., Ent., Orn., R.)
 1930 *Low, G. Carmichael, M.A., M.D., F.R.C.P., F.Z.S., M.B.O.U., 7 Kent House,
 Kensington Court, W.8. (Orn., Zoo.)
 1938 Lowe, Miss C. B. M., 1 Lake Close, Lake Road, S.W.19. (Arch., Bot., Orn., R.)
 1926 Lutwyche, Mrs A. N., 120 Mildred Avenue, Watford, Herts. (Orn., R.)
- 1928 MacAlister, Mrs E. c/o Natl. Prov. Bank, 18 Cromwell Pl., S.W.7. (Bot., Orn.)
 1937 McClintock, Major D., M.A., A.C.A., c/o Park Grove, Withyam, Sussex.
 (Bot., Orn.)
 1935 McCulloch, Lt. G. K., c/o 65 Chester Road, Northwood, Middlesex. (Orn.)
 1933 MacDonald, Rt. Hon. Malcolm J., M.P., c/o Upper Frogmal Lodge, N.W.3.
 (Orn.)
 1935 McDowell, Miss C. M., 19 Cambridge Park Court, E. Twickenham, Mx.
 (Bot., Orn., R.)
 1939 McEwen, Miss E., c/o Westminster Bank, 74 Westbourne Grove, W.2. (Orn.)
 1911 MacIntosh, Miss I. S., 3 Mayfield Road, E.4. (Arch., Bot.)
 1911 MacIntosh, Miss J. D., 3 Mayfield Road, E.4. (Arch., Bot.)
 1929 Mackay, Helen M. M., M.D., F.R.C.P., 7 Lyndhurst Gardens, N.W.3. (Orn.)
 1932 Mackworth-Praed, C. W., F.R.G.S., F.Z.S., F.R.E.S., M.B.O.U., Castletop,
 Burley, near Ringwood, Hants. (Orn., Ent.)
 1941 McMillan, A., L.R.C.S., L.R.C.P., Ivy House, New Romney, Kent. (Orn.)
 1923 *Macpherson, A. Holte, B.C.L., M.A., F.Z.S., 12 The Beacon, Exmouth, Devon.
 (Orn.)
 1934 Mann, F. R., M.C., Noreena, Ham Common, Surrey. (Orn.)
 1934 Manser, G. E., c/o 29 Gallows Hill, King's Langley, Herts. (Bot., Ecol., Orn.)
 1936 Manson-Bahr, Sir Philip H., C.M.G., D.S.O., M.A., M.D., F.R.C.P., M.B.O.U.,
 F.Z.S., 149 Harley Street, W.1. (Orn.)
 1934 *Marchant, Miss R., 24 Longmeads, Rusthall, Tunbridge Wells, Kent. (Arch.,
 Bot.)
 1938 Maund, Miss L. M. R., 142 Gordon Court, Wood Lane, W.12. (Orn.)
 1940 Megaw, T. McE., M.Sc., A.M.I.C.E., Petty's Farm, Ludgershall, Aylesbury,
 Bucks. (Geol., Orn.)
 1935 Melluish, W. D., c/o 56 Sunnyfield, N.W.7. (Ecol., Orn.)
 1938 Michael, R. P. (address not known). (Ecol., Orn.)
 1931 Millburn, Miss F. C., Calderfield, St George's Avenue, Northampton. (Orn.)
 1926 Mitchell, Miss E. A., 6 The Uplands, Ruislip Manor, Middlesex. (Bot., Orn.)
 1932 Mitchell, Miss M. I., 7 Penwerris Avenue, Osterley, Middlesex. (Bot., Orn.)
 1938 Monk, J. F., 5 Gayton Crescent, N.W.3. (Orn.)
 1937 Mountfort, G. R., M.B.O.U., c/o Vacuum Oil Co., Castor House, Tothill
 Street, S.W.1. (Orn.)
 1942 Mugele, G. F., 68 Connaught Avenue, E.4.
 1928 Murphy, Miss H., L.L.A. (address not known). (Arch., Bot., Ent., Orn.)
 1939 Muspratt, D. E., 13 Scarborough Road, E.11.
 1938 Myers, Lieut. A. F., c/o 43 Arkwright Road, N.W.3. (Orn.)
- 1942 Nevinson, Mrs H. W. (Miss Evelyn Sharp), 2/23 Young Street, W.3. (Orn.)

- 1893 *Nicholson, Miss B., 49 Danecourt Road, Parkstone, Dorset. (Bot.)
- 1934 Nicholson, E. M., M.B.O.U., 13 Upper Cheyne Row, S.W.3. (Ecol., Orn.)
- 1928 Noel, Miss E. F., 37 Burnham Court, W.2. (Bot., Ent., Orn., Pl. G., R.)
- 1934 Norris, C. A., M.B.O.U., Grassholme, Stratford-on-Avon, Warwickshire. (Ecol., Orn.)
- 1940 Norsworthy, H. H., 15 Selwyn House, Manor Fields, S.W.15. (Orn.)
- 1937 O'Farrell, A. F. L., Oaklands, Old Post Office Road, Crawley, Sussex. (Ecol., Ent.)
- 1937 Oldroyd, H., M.A., F.R.E.S., c/o British Museum (Natural History), S.W.7. (Ecol., Ent.)
- 1937 Owen, C. E., 30 Hamilton Road, Harrow, Middlesex. (Orn.)
- 1938 Paddington Public Libraries (H. J. W. Wilson, A.L.A.), Porchester Road, W.2.
- 1929 Page, Miss M. M., 22 Barnett Wood Lane, Ashted, Surrey. (Orn.)
- 1925 *Parmenter, L., F.R.E.S., c/o 94 Fairlands Avenue, Thornton Heath, Surrey. (Bot., Ecol., Ent. (esp. Dipt.), Orn., Pl. G.)
- 1938 Parrinder, Mrs E. R., 27 Gwalior House, Chase Road, N.14. (Ecol., Orn., R.)
- 1938 Parrinder, E. R., 27 Gwalior House, Chase Road, N.14. (Ecol., Orn., R.)
- 1933 Paulson, C. W. G., M.B.O.U. Woodside Cottage, Wheeler's Lane, Smallfield, Surrey. (Orn.)
- 1923 Payne, E. M., Tilgate, Long Lane, Hillingdon, Middlesex. (Bot., Orn.)
- 1923 Payne, L. G., F.Z.S., 22 Marksbury Avenue, Richmond, Surrey. (Bot., Ecol.)
- 1942 Payne, R. M., c/o 22 Marksbury Avenue, Richmond, Surrey. (Ecol., Ent.)
- 1937 Pearce, E. W., 3 Berkeley House, Hampton, Mdx. (Orn.)
- 1932 Pedler, E. G., 64 Palmerston Road, S.W.14. (Orn., R.)
- 1937 Peterken, J. H. G., 73 Forest Drive East, E.11. (Bot., Ecol., Orn.)
- 1937 Philipson, W. R., 33 Park Avenue, Ruislip, Middlesex. (Orn.)
- 1942 Phillipson, Rev. C. Q., 237 West Green Road, N.15. (Orn.)
- 1937 Piercy, K., Clifton Cottage, Clifton, Beds.
- 1931 Pinniger, E. B., 5 Endlebury Road, E.4. (Ent., Orn.)
- 1927 Piper, Miss G. E. M., 12 Elms Road, S.W.4. (Orn.)
- 1941 Pitt, Miss Frances, The Albynes, Bridgnorth, Salop. (Orn.)
- 1935 Pollard, Mrs H. B., The Limes Cottage, Pilgrims Way, S. Croydon, Surrey. (Ecol., Orn.)
- 1928 Poole, A. C., 42 The Mall, W.5. (Bot., Orn.)
- 1933 Pople, Miss W. N., Castle Rise, Castle Hill Avenue, Berkhamsted, Herts. (Ecol., Orn., P.L., R.)
- 1892 Prout, L. B., F.R.E.S., 36 Hillview Road, Hatch End, Middlesex. (Biol., Lep.)
- 1943 Ralls, C. W., 2 Overdale, Dorking, Surrey. (Orn.)
- 1939 Rammell, Mrs E. M., 18 Fishpool Street, St Albans, Herts. (Orn.)
- 1939 Ratcliff, A. G., 39 Howard Road, Dorking, Surrey. (Orn.)
- 1934 Ratcliff, P. W., c/o 39 Howard Road, Dorking, Surrey. (Bot., Ecol., Orn.)
- 1938 Rawlence, D. A., Hill Top Cottage, Warboys Road, Kingston Hill, Surrey. (Orn.)
- 1934 *Ray, Miss T., 24 Longmeads, Rusthall, Tunbridge Wells. (Bot., Arch.)
- 1930 Reeve, Miss E. A., The Penn Club, 22 Bedford Place, W.C.1. (Bot., Ecol., Ent., Orn., R.)
- 1929 Rew, Miss M., Glencoinside, Ullswater, Penrith. (Orn.)
- 1943 Richards, B. A., 29b St John's Avenue, S.W.15. (Orn.)
- 1925 Richardson, A., 2 Manor Road, Wheathampstead, Herts. (Ent., Orn.)
- 1940 Richardson, R. A., Birling Corner, Ratton Village, Willingdon, Sussex. (Orn.)
- 1943 Richter, J. H., 32 Pretoria Road, E.4. (P.L.)
- 1941 Robbins, Rev. R. A., Marshwood Vicarage, Bridport, Dorset.
- 1934 Roberts, J. E., B.Sc., Homewood, Kelsall, Cheshire. (Ecol., Orn.)
- 1940 Robinson, T. R., Flat 10, Linton House, Holland Park Avenue, W.11. (Orn.)
- 1938 Rømmel, Miss D., The Orchard House, Bickley, Kent. (Arch., Orn.)
- 1910 *Ross, J., 23 College Gardens, E.4. (Pl. G.)
- 1935 Rowan, J. D., 65 Haydn Avenue, Purley, Surrey. (Orn.)
- 1931 Rowberry, E. C. (address not known). (Orn., Ecol.)

- 1941 Rutherford, Mrs P., 82 Southgate Road, Potter's Bar, Middlesex. (Orn.)
- 1942 Ryall, R. H. M., 24 Stillcroft Gardens, Wembley, Middlesex. (Orn.)
- 1929 Sampson, E. S., 60 Alexandra Road, Epsom, Surrey. (Orn.)
- 1937 Scott, G. B., c/o 6 Alan Road, S.W.19. (Geol., Orn.)
- 1937 Seth-Smith, D., F.Z.S., M.B.O.U., Brabourne, Poyle Road, Guildford, Surrey. (Orn.)
- 1935 Shill, W. A., Barberries, Greenhurst Lane, Oxted, Surrey. (Bot.)
- 1929 Short, G. R. A., 36 Parkside Drive, Edgware, Middlesex. (Bot., Micr., Pharmacognosy, Ecol.)
- 1943 Siebert, W. F., 18 Headstone Lane, Harrow, Middlesex. (Orn.)
- 1892 Simes, J. A., O.B.E., F.R.E.S., 75 Queen's Road, Loughton, Essex. (Ent.)
- 1933 Skrimshire, E. H. N., F.R.A.I., F.Z.S., 5 The Old Well House, N.6. (Arch., Orn., R.)
- 1940 Sladen, W. J. L., Hilltop Cottage, Warboys Road, Kingston Hill, Surrey. (Bot., Ecol., Ent., Orn.)
- 1935 Smith, Miss A. J., 55 West Avenue, N.3. (Orn.)
- 1892 Smith, C. B., 103 Wood Vale, N.10. (Lep.)
- 1943 Smith, I. B., U.C.H. Medical School, University Street, W.C.1. (Orn.)
- 1937 Smith, M. A., M.R.C.S., Lane End, Putney Heath Lane, S.W.15. (Amph., Rep.)
- 1927 Solly, Miss B. N., 167 Old Brompton Road, S.W.5. (Orn.)
- 1922 Spooner, H., 21 Musgrave Crescent, S.W.6. (Arch., Bot., Ecol., Orn., R.)
- 1936—Springall, R. S. (address not known). (Orn.)
- 1920 *Stowell, H. S., L.R.I.B.A., Pirbright, Torland Road, Hartley, Plymouth. (Arch.)
- 1930 Swayne, F. G., M.A., M.B., M.B.O.U., Ivy Hall Hotel, Crowborough, Sussex. (Orn.)
- 1935 Tams, W. H. T., F.R.E.S., British Museum (Natural History), S.W.7. (Ent.)
- 1938 Taylor, Miss M. L., 6 Kent Gardens, W.13. (Bot.)
- 1920 Thomas, Mrs G. E., 9 Talbot Road, Isleworth, Middlesex. (Orn., R.)
- 1939 Thompson, P., c/o 13 Bearland, Gloucester. (Bot., Orn.)
- 1892 Tremayne, L. J., F.Z.S., Grand Buildings, Trafalgar Square, W.C.2. (Arch., Bot., Lep., Orn., Pl. G., R.)
- 1940 Trouton, Miss E. M., 31 Albert Bridge Road, S.W.11. (Orn.)
- 1940 Tucker, A. V., St Anne's, Bathurst Walk, Iver, Bucks. (Orn.)
- 1935 Tucker, D. G., B.Sc., 31 Frederica Road, E.4. (Ecol., Orn.)
- 1943 Tufnell, B., 14a Queensberry Place, S.W.7. (Orn.)
- 1931 Underwood, R. A., Greenways, Shoreham Road, Otford, Kent. (Orn.)
- 1927 Veitch, Miss A. I., 44 Budoch Drive, Goodmayes, Essex. (Arch.)
- 1929 Venour, Miss D., Offley Place, Great Offley, Hitchin, Herts. (Orn., Ecol.)
- 1933 Vincent, W. G., 154 Winchester Road, Hale End, E.4. (Orn.)
- 1938 Wadley, N. J. P. (address not known). (Orn.)
- 1941 Wagge, Miss L. E., 192 Lichfield Court, Richmond, Surrey. (Biol.)
- 1927 Waller, G., Taunton Dene, Sandyhurst Lane, Ashford, Kent. (Ecol., Ent., Orn.)
- 1938 Warburg, G. O., 1 Woodside, Erskine Hill, N.W.11. (Orn.)
- 1943 Ward, Mrs A., 13 Chatham Road, E.17.
- 1943 Ward, Miss M., B.Sc., 13 Chatham Road, E.17.
- 1933 Ward, Miss M., M.B., Ch.B., Threeways, Jordans, Beaconsfield, Bucks. (Arch., Orn.)
- 1941 Watson, R. L., 55 Redcliffe Gardens, S.W.10. (Bot., Orn.)
- 1936 Watt, E. C., 13 Park Road, N.W.1. (Orn.)
- 1925 *Watt, Mrs W. Boyd, M.B.O.U., 12 Campbell Road, Boscombe, Hants. (Arch., Ecol., Orn.)
- 1938 *Wattson, Miss A. E., 27 Woodhill Crescent, Kenton, Middx. (Ent., Orn.)
- 1939 Wattson, Mrs R. F., 27 Woodhill Crescent, Kenton, Middx.
- 1939 Wattson, R. F., 27 Woodhill Crescent, Kenton, Middx. (Ent.)
- 1928 Weeks, C., 7 Ashmount Road, N.19. (Orn., Ecol., R.)

- 1929 Wheeler, E. P., F.R.I.B.A., 10 St Martin's Avenue, Epsom. (Orn., Arch.)
 1935 Whitaker, F. O., 51 Grosvenor Avenue, Carshalton. (Bot., Ecol., Pl. G., R.)
 1930 Whitbread, R., 6 Meadow Way, Weald Village, Harrow, Middlesex. (Arch.)
 1932 Whitbread, Miss W. H. E., 6 Meadow Way, Weald Village, Harrow, Middlx.
 1933 White, E. I., Ph.D., F.G.S., Ministry of Health, 17 Bath Road, Reading, Berks. (Palaeontology, Orn.)
 1938 Whitehead, Miss D., 173 Sunny Gardens Road, N.W.4. (Bot., Orn., R.)
 1934 Wightman, J. S., c/o 57a Harrington Square, S.W.7. (Orn.)
 1938 Wigram, A. F. (address not known). (Orn.)
 1938 Wigzell, J. A., 17 Wool Road, S.W.20. (Ecol., Orn.)
 1942 Wilkinson, J. S., B.A., A.C.A., F.R.H.S., 26 Golders Rise, N.W.4. (Bot.)
 1937 Williams, O. C. B., 103 Brondesbury Road, N.W.6. (Ecol., Orn.)
 1942 Wilson, D. S., 8a Beulah Hill, S.E.19. (Orn.)
 1931 *Wilson, Mrs M. M., 15 The Avenue, Bickley, Kent. (Bot., Ecol., Ent., Geol., Orn., Pl. G., R.)
 1938 Wilton, A. R., 262 Kingston Road, S.W.20. (Ecol., Orn., R.)
 1938 Winsloe, Mrs C. M., c/o Lloyds Band Ltd., 18 Wigmore Street, W.1. (Orn.)
 1929 Witherby, H. F., M.B.E., H.F.A.O.U., F.Z.S., M.B.O.U., Gracious Pond Farm, Chobham, Nr. Woking, Surrey. (Orn.)
 1942 Wood, B., Vincent's Shaw, Chipstead, Surrey. (Orn.)
 1942 Woodhurst, Miss G. F., 58 Seymour Road, E.4.
 1937 Worthington, Miss L. F., 104 Goldhurst Terrace, N.W.6. (Arch.)
 1922 Wright, W. A., 31 Beresford Road, E.4. (Orn.)
 1942 Wyatt, Miss E. M., c/o Post Office Savings Bank, W.14. (Orn.)
 1938 Wylie-Moore, N., 3 Helena Court, Eaton Rise, W.5. (Orn.)
 1937 Yarrow, I. H. H., M.A., Ph.D., D I.C., F.R.E.S., Agricultural Advisory Offices, 7 Redlands Road, Reading, Berks. (Ecol., Ent.)
 1942 Young, B. W., 15 St James's Mansions, N.W.6. (Bot., Orn.)

Affiliated Societies.

- 1936 Tiffin Boys' School Scientific Society (Natural Science Section) (D. T. Humphris), Tiffin Boys' School, Kingston-on-Thames, Surrey. (Ecol.)
 1936 Westminster School N.H. Society (L. H. Burd), (see Register).

Branch Associates:

- 1943 Abbott, Miss E. J., 339 Hoe Street, E.17.
 1937 Bayes, C. S., 50 Pembroke Road, E.17. (Orn.)
 1943 Beavis, G. H. S., 14 Fairlight Avenue, E.4.
 1943 Beavis, Mrs M. H. W., 14 Fairlight Avenue, E.4.
 1930 Brightman, Miss A., St Osyth, Hempstead Road, E.17.
 1938 Chingford Branch County Library (E. Leyland, Librarian), Hall Lane, E.4.
 1939 Churchill, Miss E. M., N.F.U., Ash Lodge, Pump Hill, Loughton, Essex.
 1943 Dossetter, L. J., 11 York Road, E.17. (Orn.)
 1942 Hammond, A. C., 132 Endlebury Road, E.4. (Orn.)
 1920 Hart, Miss H., 7 Park Hill Road, E.4.
 1933 Hayward, P. D., 2 King's Green, Loughton, Essex. (Orn.)
 1937 Hiles, Miss I. E., 32 Gordon Road, E.4.
 1943 Hindell, Mrs F., 17 Larkshall Road, E.4. (Orn.)
 1943 Hindell, H. G., 17 Larkshall Road, E.4.
 1942 Mansbridge, J. W., 11 Westbury Lane, Buckhurst Hill, Essex. (Ecol.)
 1911 Mathieson, Miss M. L., 7 Crescent Road, E.4. (Meteorology.)
 1934 Nicholson, E. T., 21 Holly Drive, E.4. (Ecol., Orn.)
 1930 Penwarden, Miss C., 39 The Avenue, E.4.
 1935 Pettit, H. A., 197 Billet Road, E.17. (Orn.)
 1927 Pettit, Mrs S., 2 Victoria Road, E.4.
 1927 Pettit, S., 2 Victoria Road, E.4.

- 1942 Rumsey, P. F. C., Park Farm Nursery, Sewardstone Road, E.4. (Orn.)
 1925 Saul, H. J. B., 12 Sandringham Court, Ipswich Road, Norwich.
 1937 Smith, R. P., 22 Pelton Avenue, Belmont, Surrey. (Conch.)
 1903 Stevenson, H. E., F.C.S., 24 Wilton Grove, S.W.19. (Chem.)
 1942 Tucker, Mrs F., 31 Frederica Road, E.4.
 1942 Tucker, J. F., B.Sc., 31 Frederica Road, E.4. (Bot.)
 1942 Tucker, M. J., 31 Frederica Road, E.4. (Ecol.)
 1942 Turner, Mrs L., 202 The Avenue, Higham's Park, E.4. (Orn.)
 1939 Verini, Miss E. M., M.A., 55a Palmerston Road, Buckhurst Hill, Essex.
 1942 Walker, C. H., St Bartholomew's Hospital, W. Smithfield, E.C.1. (Orn.)
 1942 Wheeler, A. C., 17 Neven Drive, E.4.

Country and School Associates:

- 1941 Adolph, P. A., The Lodge, Ashurst Park, Langton Green, Tunbridge Wells, Kent. (Orn.)
 1941 Bale, D. W. D., Marsh Hill, Dulverton, Somerset. (Orn.)
 1931 Benson, Mrs R. B., Dellfield, Featherbed Lane, Felden, Boxmoor, Herts. (Orn., Bot., R.)
 1939 Berry, P., M.D., 46 Magpie Hall Road, Chatham, Kent.
 1943 Betteridge, H. W. G., 52 Newton Road, Tunbridge Wells, Kent.
 1934 Biddlecombe, P. E., 30 Hill View Road, Orpington, Kent. (Arch.)
 1908 Bostock, E. D., 8 Pelham Gardens, Folkestone, Kent. (Lep.)
 1940 Breckin, Mrs E. M., 108 Liverpool Road, Birkdale, Southport, Lancs. (Arch., Ecol., Mycol.)
 1937 Bunker, H. E., 27 Broad Oak Lane, Penwortham, Lancs.
 1937 Clark, A. (address not known). (Orn.)
 1935 Clerk-Rattray, Miss C. E., c/o Easter Drimmie, Blairgowrie, Perthshire. (Bot., Orn.)
 1933 Collett, G. W., 174 Sheldon Road, Chippenham, Wilts. (Bot., Ecol., Orn., R.)
 1924 Collins, Miss F., Martlets, Clapham, near Worthing, Sussex. (Orn.)
 1936 Colyer, W. L., Heybrook, Connaught Road, Sidmouth, Devon. (Ecol., Orn.)
 1938 Cowper, S. G., B.Sc., Ph.D., M.R.C.S., L.R.C.P., F.Z.S. (missing from B.E.F., 3/9/40). (Ecol., Ent., Orn.)
 1938 Eardley-Wilmot, Mrs M., Orchard Lodge, Avon Dassett, Warwickshire. (Bot., Orn.)
 1937 Evans, H. J., Jesemin, Amersham Road, Little Chalfont, Bucks. (Orn.)
 1940 Fairbairn, D. C., M.C., M.B., B.Sc., L.R.C.P., M.R.C.S., c/o 48 Addison Avenue, W.11. (Bot.)
 1933 Ferrier, Miss J. M., F.Z.S., M.B.O.U., A.A.O.U., Sea Gull Bungalow, Porth, near Newquay, Cornwall. (Orn., Ecol.)
 1930 Foster, Mrs S., 12 Victoria Road, Bridgnorth, Shropshire. (Orn.)
 1933 Gibson, Miss E. M., Ashcroft, Station Road, Petersfield, Hants. (Lep., Orn.)
 1940 Harvey, A. A., St Teild's Hall, Roath, Cardiff. (Orn.)
 1927 Harvey, J. H., Half Moon Cottage, Little Bookham, Surrey. (Bot.)
 1926 Hibbert-Ware, Miss A., F.L.S., M.B.O.U., Hilary, Girton, Cambridge. (Orn.)
 1915 Hopkins, Prof. Sir F. Gowland, O.M., M.A., M.D., F.R.S., F.R.C.P., 71 Grange Road, Cambridge. (Biochemistry.)
 1936 Lewis, Miss M., Brincliffe, Osney Crescent, Paignton, S. Devon. (Arch., Bot., Ecol., Ent., Orn., R.)
 1941 Lisney, A. A., M.A., M.D., F.R.E.S., The Red House, Narborough, Leicestershire. (Lep.)
 1933 Lockyer, T. N., LL.B. (Lond.) (address not known): (Arch., Orn., R.)
 1933 Lockyer, Mrs T. N. (address not known). (Arch., Orn., R.)
 1943 Lusty, E. J., 83 Snakes Lane, Woodford Green, Essex. (Orn.)

- 1932 McKittrick, T. H., 7 Central Bahnstrasse, Basle, Switzerland. (Orn.)
 1932 McKittrick, Mrs T. H., 7 Central Bahnstrasse, Basle, Switzerland. (Orn.)
 1932 Mason, C. T., Mill Cottage, Gt. Shefford, Newbury, Berks. (Arch., Ent.)
 1938 Mason, I. H., 134 Ryden's Way, Old Woking, Surrey. (Ent., Orn., R.)
 1902 Miller, Miss M. E., The Croft, Rainsford Lane, Chelmsford. (Lep.)
 1905 Moore, J. W., F.R.E.S., 151 Middleton Hall Road, King's Norton, Birmingham, 30. (Exotic Lep.)
 1942 Moorhouse, S., Lyndale, Orchard Avenue, Bolton-le-Sands, Lancs. (Orn.)
 1938 Muirhead, D., Malvern House, The Baulk, Worksop, Notts. (Ecol., Orn.)
 1929 Perry, Mrs M. D., 37 MacAlister Street, Mackay, Queensland. (Orn., R.)
 1897 Pike, Oliver G., F.Z.S., M.B.O.U., F.R.P.S., The Bungalow, Leighton Buzzard, Beds. (Orn.)
 1927 Raikes, Miss D. T., Hên Ysgol, Bwlch, Breconshire. (Arch., Bot., Orn.)
 1936 Shaw, G. A., c/o 12 Whitby Avenue, Hexham, Northumberland. (Bot.)
 1943 Simmons, G. W., 21 Woodbridge Hill Gardens, Guildford, Surrey.
 1928 Sparkes, Mrs F. M., 4 Loop Road, Kingfield, Woking, Surrey. (Arch., Bot.)
 1937 Spicer, A. H., M.C., M.R.C.S., L.R.C.P., Graffham, Petworth, Sussex. (Orn.)
 1914 Studd, E. F., M.A., B.C.L., F.R.E.S., Exeleigh, Starcross, Devon. (Lep.)
 1942 Wales, Mrs M., Great Garden, Dartington, Totnes, Devon.
 1936 Willcox, J. M., Capt. (R.A.M.C.), M.B., Ch.B., c/o The Moat House, Alvechurch, Birmingham. (Orn.)
 1929 Willcox, P. H., c/o 40 Welbeck Street, W.1. (Ent., Bot.)

Register

of those at present unable to participate in the activities of the Society, to whom the *London Naturalist* is to be sent, but not the Syllabus.

- 1929 Acland, Miss C. M., M.B.O.U., Walwood, Banstead, Surrey. (Orn.)
 1937 Alston, A. H. G., British Museum (Natural History), S.W.7. (Bot.)
 1927 Barclay-Smith, Miss P., F.Z.S., M.B.O.U., 28 Belvedere, Bath. (Orn.)
 1932 Binley, Sister E. M., T.A.N.S. P209810/1, 17th General (London) Hospital, c/o A.P.O. 1665. (Orn., R.)
 1896 Bishop, E. B., Lindfield, Marshall Road, Godalming, Surrey. (Arch., Bot., Orn., Pl. G.)
 1938 Blay, N. A., L.D.S., R.C.S. (Eng.), Lieut. R.A.M.C., c/o 27 Shrubbery Gardens, N.21. (Ecol., Orn., R.)
 1925 Boardman, S., 109 Monkham's Avenue, Woodford Green, Essex. (Ent., Orn.)
 1939 Boyd, B. C. L., 10 Mayfield Road, Dagenham, Essex. (Orn.)
 1936 Burd, L. H., Westminster School N.H. Society, 5 Cruxwell Street, Bromyard, Herefordshire. (Ecol., Ent., Orn.)
 1937 Butlin, Lt. J. H., c/o 90 East Sheen Avenue, S.W.14. (Orn.)
 1938 Buxton, Miss L. R., Newlands, Stanstead Abbots, Ware, Herts. (Orn.)
 1932 Caiger-Smith, Miss J., Denison House, Little Gaddesden, Berkhamsted, Herts. (Orn.)
 1938 Calvert, G. W., 1 Milton Crescent, Cheadle, Cheshire. (Orn.)
 1939 Carter, R. H. W. J., 1 Wood Street, East Grinstead, Sussex. (Ecol., Ent.)
 1938 Chave, Mrs E. L., 15 Glenhurst Rise, S.E.19. (Orn.)
 1938 Chave, S. P. W., 15 Glenhurst Rise, S.E.19. (Orn.)
 1927 Clanchy, Mrs B. L., Westminster Bank House, Harrow-on-the-Hill, Middx. (Orn., R.)
 1927 Clanchy, D. H., Westminster Bank House, Harrow-on-the-Hill, Mx. (Ecol., Orn., R.)
 1937 Cockburn, Major T. A., M.D., c/o Lloyds Bank, Barking, Essex. (Orn.)
 1932 Collenette, Mrs, Parwich Hall, near Ashbourne, Derbyshire. (Orn.)
 1934 Collings, Mrs M., 36 Alfriston Road, S.W.11. (Ent., R.)
 1928 Cox, Miss L. E., 201 Green Street, Atworth, near Melksham, Wilts. (Bot.)
 1931 Crook, W. M., F.R.G.S., F.Z.S., Wyldwood, Cold Harbour, Dorking. (Orn.)

- 1933 Darashah, Mrs E. G., 108 Stephens Road, Tunbridge Wells. (Arch., Bot., R.)
 1932 Davis, Miss R., c/o 118 College Road, S.E.21. (Orn., R.)
 1939 De Bosdar, C. D., R.A.F. Station, Hemswell, Lincs.
 1939 Devenish, L. R., 23 Grosvenor Road, East Grinstead, Sussex. (Ecol., Lep.)
 1933 Doran, F. H., Toddsbrook, Great Parndon, Harlow, Essex. (P. L.)
 1936 Elcome, G. D., c/o 28 Dulwich Wood Avenue, S.E.19. (Orn.)
 1907 Eynon, L., B.Sc., F.I.C., 8 Hall Lane, Upminster, Essex. (Chem.)
 1935 Farquharson, A., Le Play House, Albert Road, Malvern. (Ecol.)
 1927 Fisher, Mrs G. L., 41 Milton Court, Ickenham, Middx. (Arch.)
 1939 Fitter, Mrs M. S., 39 South Grove House, N.6. (Ecol., Orn.)
 1939 Forty, E. W., 22 Medina Avenue, Hinchley Wood, Esher, Surrey. (Orn.)
 1937 Fossey, H. B., c/o 39 Orchard Avenue, Cambridge. (Orn.)
 1935 Foster, Mrs J. B., c/o 478 West Wycombe Road, High Wycombe Bucks.
 1940 Fraser, Miss C. M., B.Com., The Penn Club, 22 Bedford Place, W.C.1. (Orn.)
 1931 Frederick, Miss L. M., M.Sc., F.Z.S., c/o Miss Wilkins, Cold Harbour, Sherborne, Dorset. (Ecol., Orn., P. L., R.)
 1933 Gillham, E. H., 9 Central Parade, Orpington, Kent. (Orn.)
 1937 Gillingham, D. W., c/o 28 Roding Road, Loughton, Essex. (Orn.)
 1930 Goodwin-Vanner, R. E. F., F.R.S.A., F.R.H.S., Essex Villa, Guildford, Surrey. (Arch.)
 1934 Gray, Miss J. W., 10 Canford Road, S.W.11. (Arch., Bot., R.)
 1937 Green, D. B., 20 Fitzjohn's Avenue, N.W.3. (Orn.)
 1939 Greenfield, H. F., Lt., R.A., c/o Beech Bank, Stuart Road, Warlingham, Surrey. (Orn.)
 1928 Griffin, Miss M., Minden, Heathfield, Sussex. (Orn.)
 1937 Guichard, K. M., c/o 10 Lyndhurst Gardens, N.W.3. (Bot., Ecol., Ent., R.)
 1927 Hardiman, Miss A., Hyron's Cottage, Woodside Road, Amersham, Bucks. (R.)
 1935 Harris, A. H., Silton, Loughborough Road, Ruddington, Notts. (Orn.)
 1935 Hatch, R. S., c/o 66 Coston's Avenue, Greenford, Middx. (Orn.)
 1930 Haworth, Miss F. M., B.Sc., F.Z.S., Lytton Lodge, Codicote, near Hitchin, Herts. (Bot., Zoo.)
 1937 Hayward, H. H. S., 60 Ridge Crest, Enfield, Middlesex. (Orn.)
 1936 Hilliard, R., c/o 5 Oakleigh Gardens, Edgware, Middx. (Ecol., Ent.)
 1938 Hodge, Mrs E. M., 62 Roseneath Road, S.W.11. (Arch.)
 1937 Hodge, G. A., 62 Roseneath Road, S.W.11. (Orn.)
 1933 House, F. C., c/o 294 Footscray Road, S.E.9. (Ecol., Orn., R.)
 1929 Johns, Miss F. E., 30 Mt. Stewart Avenue, Kenton, Middx. (Bot., Orn., R.)
 1939 Jones, H. O., 49 Eaton Road, Sutton, Surrey. (Orn.)
 1937 Keen, Mrs E. M., 15 Doughty Street, W.C.1. (Arch.)
 1936 Lamont, Mrs E. H., 49a Netherhall Gardens, N.W.3. (Orn.)
 1935 Leatherdale, D., c/o Tasli, Hawk's Hill, Leatherhead, Surrey. (Bot., Ent., Geol., Pl. G., R.)
 1928 Lee, Miss M., Minden, Heathfield, Sussex. (Orn.)
 1936 Lousley, J. E., 7 Penistone Road, S.W.16. (Bot., Ecol., Orn.)
 1938 MacAlister, D. A., c/o Natl. Prov. Bank, 18 Cromwell Place, S.W.7. (Orn.)
 1923 Mann, E., 10 Frankland Road, E.4. (Ecol., Orn., P. L.)
 1939 Marsh, Miss B. M., 8 Woodland Ct., Wanstead, E.11. (Bot., Ecol., Ent., Orn.)
 1940 Mayo, R. W., Inaspinney, Oaklands, Welwyn, Herts. (Orn.)
 1934 Morgan, D. A. T., c/o 3 Upton Field, Southwell, Notts. (Ecol., Orn., R.)
 1939 Morgan, Miss L., 10 Old Square, Lincolns Inn, W.C.2.
 1937 Morton, Miss G. M., The Whins, Hermit Hole, Keighley, Yorks. (Arch., Orn.)
 1938 Mulholland, Rt. Hon. H., M.P., Speaker's House, Stormont, Belfast. (Orn.)
 1934 Munro, Miss M., Brown Clee, Hollybush Road, Cardiff. (Ecol., Orn.)
 1937 Musselwhite, D. W., 59 Mayford Road, S.W.12. (Orn.)
 1926 Niblett, M., 10 Greenway, Wallington, Surrey. (Ent., Pl. G.)
 1933 Oke, E. E., Tweenways, The Mount, Leatherhead, Surrey. (Ent., Orn., R.)
 1938 Park, W. D., c/o 34 White Horse Drive, Epsom, Surrey. (Ecol., Orn.)
 1921 Parsons, Lt. Cdr. S. T. T., R.N.V.R., c/o Westminster Bank Ltd., 8 Borough High Street, S.E.1. (Orn.)
 1937 Patterson, H. G., 15 Queen's Gate Gardens, S.W.7. (Orn.)
 1935 Pearse, B. S. K., 74 Ashgrove Road, Goodmayes, Essex. (Bot., Ent., Orn.)

- 1922 Pethen, R. W., Pury End, Towcester, Northants. (Ecol., Ent., Orn.)
 1932 Phillips, H. H., M.R.C.S., L.R.C.P., 11 King's End, Bicester, Oxon. (Orn.)
 1941 Pinks, R. S., 25 Parkdale Crescent, Worcester Park, Surrey. (Orn.)
 1927 Piper, Miss G. E. M., 29 Loulsa, Rhiwbina, Cardiff. (Orn.)
 1940 Plumptre, Miss H. M., The Hindles, Atherton, Lancs. (Bot., Orn.)
 1925 Poock, S. G., 65 Milton Road, Harpenden, Herts. (Ecol., Orn.)
 1940 Poore, A. C. G., c/o 17 West Avenue, Wallington, Surrey. (Orn.)
 1910 Pratt, W. B., 10 Lion Gate Gardens, Richmond, Surrey. (Lep.)
 1937 Rose, C. C., c/o Eilerslie Guest House, Fittleworth, Sussex. (Orn.)
 1939 Russell-Smith, Miss J. M., Heathfield, Little Heath, Potter's Bar, Mdsx.
 1932 Ryan, A. P., B.B.C., W.1. (Orn.)
 1937 Scott, Miss E. M. P., 7 Broomfield Road, Kew Gardens, Surrey. (Arch., Orn.)
 1939 Simon, M. H. H., Sharston House, Knutsford, Cheshire. (Ecol., Orn.)
 1940 Smeed, J. A., 133 Cassiobury Park Avenue, Watford, Herts. (Orn.)
 1927 Southern, H. N., M.A., F.Z.S., Sollershott Flats, Linkside Avenue, Oxford.
 (Ecol., Orn.)
 1935 Spinney, G. H., B.A., East Hill Cottage, Copthorne, Crawley, Sussex. (Arch.,
 Bot., Ecol., R.)
 1928 Talbot, G., F.R.E.S., 31 York Road, Woking, Surrey. (Lep.)
 1931 Thomas, Mrs P. I., Woodlands, Cobham Road, E. Horsley, Surrey. (Ecol.,
 Orn., R.)
 1939 Thornton, J. O., 6 Arterberry Road, S.W.20. (Orn.)
 1932 Todd, Miss G. E., Iona, Queen's Road, Old Colwyn, N. Wales. (Bot., Orn., R.)
 1934 Tours, H., 7 Briar Road, Kenton, Middlesex.
 1935 Tracy, N., M.B.O.U., The Black Cabin, South Wootton, King's Lynn, Nor-
 folk. (Orn.)
 1908 Tremayne, Mrs L. J., Grand Buildings, Trafalgar Square, W.C.2. (Arch.,
 Bot., Orn., R.)
 1937 Upton, Mrs P. V., Eweland Hall, Margaretting, Essex. (Orn.)
 1935 Van Oostveen, Miss M. S., c/o 11 Gloucester Walk, W.8. (Ecol., Ent., Orn.)
 1938 Vesey-FitzGerald, B. S., F.L.S., F.G.S., Editor "The Field," 41 Southgate
 Street, Winchester, Hants. (Ecol., Orn., Zoo.)
 1925 Ward, B. T., 24 Long Deacon Road, E.4. (Bot., Ecol., Ent., Orn., Pl. G., R.)
 1933 Ward, Miss I. W., Amaryllis, Hughenden Valley, High Wycombe, Bucks.
 (Icht., Orn.)
 1939 Welford, Miss A. M., 13 Clifton Avenue, N.3. (Orn.)
 1937 White, C. A., 18 Townsend Road, Southall, Middx. (Orn.)
 1937 Wiggins-Davies, W. W., c/o Bracebridge, Four Oaks, Warwickshire. (Orn.)
 1932 Williams, A. R., Barclay's Bank, Haifa, Palestine. (Orn.)
 1936 Wilson, J. M., M.B., B.S., R.A.M.C., Spinnerswood, Fawke Common, Seven-
 oaks, Kent. (Orn.)
 1937 Winters, Miss E. D. M., The Whins, Hermit Hole, Keighley. (Arch., Orn.)

The following abbreviations are used in the above list of members:—Api., Apiculture; Aqua., Aquaria; Arch., Archaeology; Ast., Astronomy; Biol., Biology; Bot., Botany; Chem., Chemistry; Col., Coleoptera; Conch., Conchology; Dipt., Diptera; Ecol., Ecology; Ent., Entomology; Ethn., Ethnology; Geol., Geology; Hem., Hemiptera; Hym., Hymenoptera; Icht., Ichthyology; Lep., Lepidoptera; Mam., Mammals; Micr., Microscopy; Mycol., Mycology; Neur., Neuroptera; Orn., Ornithology; Orth., Orthoptera; Ool., Oology; Pl. G., Plant Galls; P. L., Pond Life; R., Ramblers' Section; Rep., Reptilia; Zoo., Zoology.

* Signifies a Life Member.

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London Naturalist , 1921-25, 1929-31 (1926-28 out of print) -	each 3s
1932-35, - each 5s; 1936-42, - -	each 3s 6d
London Bird Report , 1936-42 (1938 out of print) - - -	each 1s 6d
Transactions of the London Natural History Society , 1914-20	each 3s
Transactions of the City of London Entomological and Natural History Society , 1891-1911 - - - - -	each 2s
1912-13 (1 vol.) - - - - -	3s

N.B.—Members may obtain any of the above
at two-thirds of the published price.

" LONDON NATURALIST " REPRINTS.

2, 6, 8, 12, 14, 15, 16, 17. Botanical Records of the London Area, Being a List of the Plants Observed within 20 Miles of St Paul's Cathedral, in eight parts (1927-35) - -	each 6d
4. The Thames as a Bird Migration Route. President's Address, 1928. By William E. Glegg, F.Z.S., M.B.O.U. - - -	6d
5. Ornithological Records of the London Area, Being a Pre- liminary List of Birds Observed within 20 Miles of St Paul's Cathedral (1928) - - - - -	6d
7. The Birds of Middlesex since 1866. President's Address, 1929. By William E. Glegg, F.Z.S., M.B.O.U. - - - -	1s
9. British Gall Mites. By H. J. Burkill, M.A., F.R.G.S. (1929)	6d
10. Some Diurnal Observations on the Nightjar. By David Lack (1929) - - - - -	6d
11. Birds of the Harrow District (North-west Middlesex), 1925-30. By T. H. Harrisson, M.B.O.U. (1933) - - - -	1s
13. Ornithological Records of the London Area (1935) - - -	6d
18. An Identification Key to British Grey Geese. By John Berry (1935) - - - - -	6d
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Map of the Society's Area: showing the 24 sections into which it is divided to facilitate botanical recording - - -	2d
Life of A. W. Bacot. By Prof. M. Greenwood, reprinted from <i>Journal of Hygiene</i> (1924) - - - - -	6d

LONDON NATURAL HISTORY SOCIETY.

THE Society is an amalgamation of the City of London Entomological and Natural History Society, founded in 1858, and the North London Natural History Society, founded in 1892.

A meeting is held monthly in war-time on Saturday afternoons from September to April and on Tuesday evenings from May to August in the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. On Tuesdays the room is open from 6 p.m. to 9 p.m., and meetings begin at 6.30 p.m. punctually and terminate about 8.30 p.m., unless other arrangements are announced. On Saturdays the room is open from about 2 p.m.

The CHINGFORD LOCAL BRANCH meets at the Staff Recreation Room, Chingford Laundry, Chingford Green, at 2.45 p.m., on the First Saturday in each month during the winter months.

At these meetings specimens of Natural History interest are exhibited, and papers on various subjects are read and discussed. Visitors may be introduced by members of the Society, and are cordially welcome.

The minimum Annual Subscription for members is 12s 6d; if under 25 years of age the minimum is 7s 6d; for associates, 5s minimum. New members and associates pay an entrance fee of 2s 6d. Subscription renewals, which should be sent to the Treasurer, become due on January 1st. Members elected after October 1st pay no subscriptions for the current calendar year. A Register is kept of Members who cannot participate in the Society's work during the war. They pay 2s 6d a year, and receive the Society's publications, but not the syllabus of current activities.

Each member and associate is entitled to one copy of *The London Naturalist* and *The London Bird Report* free; extra copies may be purchased by members, if supplies are available, at two-thirds of the published price.

The Society looks with confidence for the support of all who are interested in the study of Natural History.

Further information and syllabus may be obtained from the Secretary:—A. B. HORNBLOWER, 91 Queen's Road, Buckhurst Hill, Essex.

N.B.—During war-time the time and frequency of Meetings may be varied at the discretion of the Council, and the current syllabus should be consulted.

