

The
**BEDFORDSHIRE
NATURALIST**

BEING THE
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OF THE
BEDFORDSHIRE
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AND FIELD CLUB
FOR THE YEAR
1953

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BEDFORDSHIRE
NATURAL HISTORY SOCIETY & FIELD CLUB
1954

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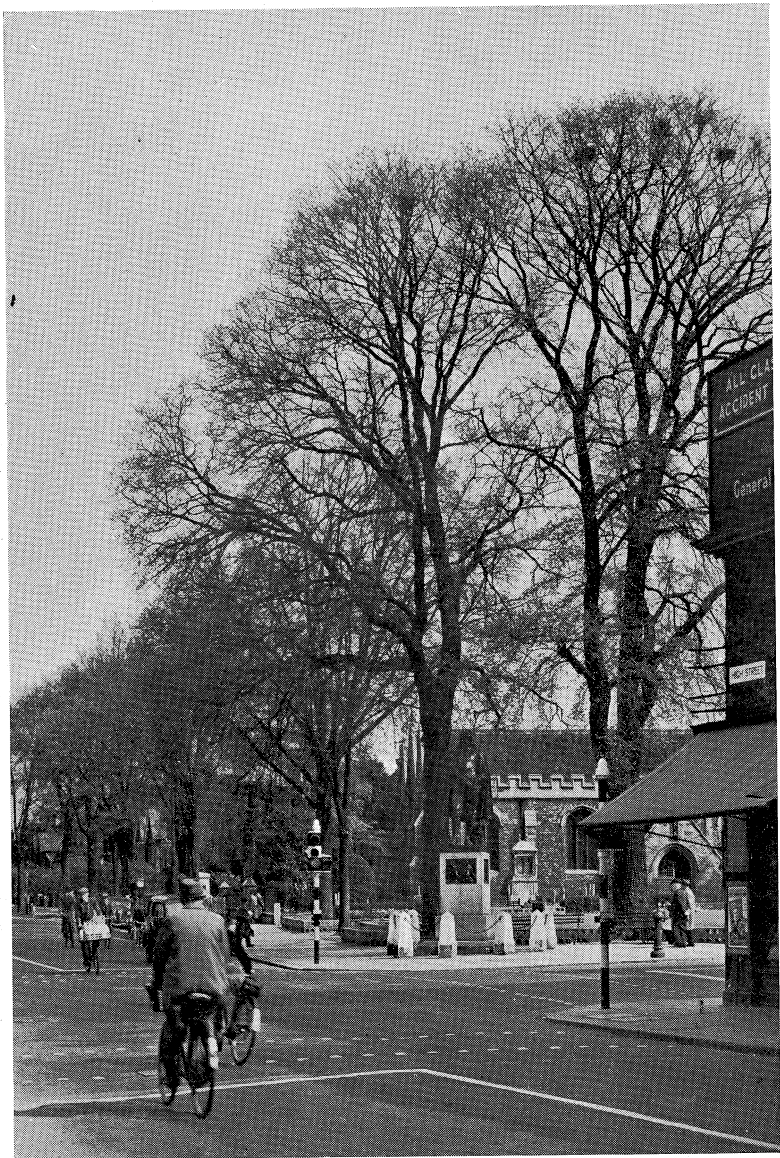
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THE ROOKERY, ST PETER'S GREEN, BEDFORD (see p. 41)
(*Photograph by Henry A. S. Key*)

THE BEDFORDSHIRE NATURALIST

BEING THE

JOURNAL

OF THE

BEDFORDSHIRE NATURAL HISTORY SOCIETY AND FIELD CLUB

EDITED BY H. F. BARNES, M.A., Ph.D.

No. 8—1953

CONTENTS

	PAGE
OFFICERS OF THE SOCIETY	cover
CONTENTS	ii
1. REPORT OF THE COUNCIL	1
2. STATEMENT OF ACCOUNTS	2
3. REPORT OF THE HON. TREASURER	3
4. MEMBERSHIP	4
5. PROCEEDINGS—	
Indoor Meetings	4
Field Meetings	5
Botanical Section	8
The Fungus Foray	8
Ornithological Section	10
Fifth Bedfordshire Ornithological Conference	10
Annual General Meeting 1954	11
The position with regard to the Conservation of Nature in Bedfordshire	12
6. THE WEATHER OF 1953. <i>By A. W. Guppy</i>	13
7. THE ECOLOGY OF THE BEDFORDSHIRE MOLLUSCA (<i>conti.</i>). <i>By</i> <i>Bernard Verdcourt</i>	16
8. BEDFORDSHIRE PLANT GALLS (<i>conti.</i>) (<i>illustrated</i>). <i>By Ray Palmer</i> <i>and V. H. Chambers</i>	18
9. BEDFORDSHIRE ORTHOPTERA (<i>illustrated</i>). <i>By Ray Palmer</i>	22
10. THE FUNGUS FLORA OF A BEDFORDSHIRE SAND PIT. <i>By D. A. Reid</i>	24
11. ECOLOGICAL SURVEY OF HARDWICK SPINNEY, 1953. <i>Report by</i> <i>A. W. Guppy, F. C. Gribble, A. J. Dymond and B. B. West</i>	28
12. REPORTS OF RECORDERS—	
FLOWERING PLANTS. <i>By J. G. Dony</i>	31
FUNGI. <i>By D. A. Reid</i>	31
ODONATA. <i>By K. E. West</i>	32
LEPIDOPTERA. <i>By B. B. West</i>	32
BIRDS (<i>illustrated</i>). <i>By Henry A. S. Key</i>	32
13. NOTES AND OBSERVATIONS—	
THE ROOKERY, ST. PETER'S GREEN, BEDFORD (<i>illustrated</i>). <i>By</i> <i>Henry A. S. Key</i>	41
PLAYFUL HERRING GULL. <i>By H. Cole</i>	41
MOORHEN TAKING FISH. <i>By E. G. Eeles and F. C. Gribble</i>	41
SOME OBSERVATIONS ON THE 'FALSE SPRING' OF 1953. <i>By</i> <i>Henry A. S. Key</i>	42
14. ABSTRACTS OF LITERATURE ON BEDFORDSHIRE NATURAL HISTORY FOR 1953	43
ADDITIONS TO THE LIBRARY	43
BOOK REVIEWS	44
IN MEMORIAM	45
LIST OF MEMBERS	46
THE DISTRIBUTION OF BRITISH PLANTS	cover
NATURAL HISTORY STUDY	cover
NOTICES	iv

Report of the Council for 1953

Although there is no room for complacency the results achieved during the year were most gratifying because of the continued evidence of a more active interest, especially in the field. There is still some misgiving with regard to low attendance at some of the Luton lectures and the remedy here seems to be a supreme effort to recruit more members in that area. Insufficient publicity too has been suggested as another adverse factor and Council is taking steps to ameliorate this deficiency.

Membership remains fairly constant; the year began with 224 names on the register and ended with 217 (see p. 4). During the year the Society lost six members, two by resignation and four by death. Continuing the policy of recent years, the names of twenty members who have not paid their dues since 1951 were removed by Council. Eighteen new members have been elected during the past twelve months and one old member has rejoined. Two further resignations taking place at the close of the year resulted in the Society starting 1954 with 215 members; in addition three new members were awaiting election.

The Society lost by death four valuable members: its President, His Grace the Duke of Bedford; Brigadier C. C. Foss, a former member of Council and a most active and well-informed botanist; J. Arnold Whitchurch; and Geoffrey Young. The Duke revealed his keen interest in the activities of the Society in many ways and the meetings at Woburn, which he so ably led, will long be remembered. His untimely end was a great shock. The Society was represented at the Woburn Memorial Service.

Apart from a few instances the indoor meetings were well attended and it is gratifying to find more members taking part in the discussions. The Society again wishes to record its indebtedness to visiting speakers who have contributed in no small measure to a successful year.

The Fifth Ornithological Conference (see p. 10) was held as usual in November and as in the past there was a large attendance, in fact a record. The joint partner in this venture, the British Trust for Ornithology, was represented by its assistant secretary who spoke on the aims of that organisation and he, with the help of Mr F. C. Gribble, sold a record amount of 'Trust' literature. The ladies' social committee is to be congratulated on its excellent catering.

Kind weather continued to favour the majority of outdoor activities and the attendances were good even at some of the winter meetings when the cold winds were discouraging. The largest gathering was at Hardwick Spinney, Stagsden, in March when an ecological survey of the wood was inaugurated. This survey continued throughout the summer (see p. 28). The programmes were as usual chosen carefully so as to include meetings in all areas.

There is room in the Society's library for additional books of suitable standard and the Council appeals to members who wish to donate volumes to contact Miss E. Proctor, the Hon. Librarian. It is hoped that an increasing number of members will avail themselves of the loan of these books which may be taken out either by arrangement with Miss Proctor or at any indoor meeting in the Nature Room of the Bedford Training College, The Avenue, Bedford.

To the Hon. Editor, Dr H. F. Barnes, go congratulations for maintaining the standard of the JOURNAL and he would be most grateful for a greater variety of articles and especially short notes from members. Dr J. G. Dony too, as convener of the Nature Reserves Committee, is deserving of special praise for his continuing efforts, in liaison with several bodies, to secure the protection of a number of localities from exploitation. It is heartening news to learn that the chalk hill called Knocking Hoe, which holds many botanical treasures, will almost certainly be acquired by the Nature Conservancy as a permanent reserve.

Last but by no means least the Society records its indebtedness to all its benefactors, outstanding among whom are the many owners of properties for generous permission to members to continue their field studies.

H. A. S. KEY, *Hon. General Secretary*

THE BEDFORDSHIRE NATURAL HISTORY SOCIETY AND FIELD CLUB

STATEMENT OF ACCOUNTS FOR THE YEAR ENDED 31st DECEMBER 1953

STATEMENT OF ACCOUNTS FOR 1953

RECEIPTS				PAYMENTS					
		£	s.	d.		£	s.	d.	
To Cash in Bank, 1st January 1953	80	8	0	
„ Subscriptions—1951–52	...	4	10	0	„ Printing and Stationery	12	2	9	
„ 1953	...	87	17	0	„ Postages	6	19	8	
„ 1954	...	3	15	0	„ Hire of Halls	3	0	0	
					„ Bank Charges and Cheque Book		15	0	
					„ Affiliation Fee to British Naturalists' Association		10	0	
„ Sale of JOURNALS	...			96	2	0			
„ Subscriptions towards cost of				4	18	10			
JOURNAL	...			7	4	3			
„ Ornithological Conference									
Sale of Tickets and Refreshments	...	28	1	10	„ Two copies of <i>The Flora of Bedfordshire</i>		3	0	
Less Expenses	...	18	1	7	„ Cash in Bank, 31st December 1953	...	73	3	
				10	0	3			
				£179	18	11			
							£179	18	11

We have examined the above Account with the books and vouchers of the Society and certify the same to be correct in accordance therewith.

BEDFORD,
8th February 1954

McPHERSON, TIMMINS & EDNIE,
Chartered Accountants, Honorary Auditors

Report of Hon. Treasurer

The year 1953 started with cash in the bank £61 13s. 7d. The receipts from subscriptions amounted to £96 2s. 0d. and the sale of JOURNALS resulted in £4 18s. 10d.

Our thanks are due to those members of the Society who so generously contributed £7 4s. 3d. towards the cost of the JOURNAL, £80 8s. 0d., about £10 more than the previous issue.

The Ornithological Conference showed a profit of £10 0s. 3d., this being almost double that of the previous one.

The Society has purchased two copies of Dr Dony's *Flora of Bedfordshire*. These will be available to those members who wish to borrow them.

Once more the Council is greatly indebted to Mr Eric Lucas for auditing our accounts and on behalf of the Society I offer him our grateful thanks.

The Society has suffered a great loss in the passing of the late Duke of Bedford and I was glad to be able to represent the Society at the Memorial Service held at Woburn.

After paying all accounts, the cash in the bank on 31st December 1953 amounted to £73 3s. 6d.

W. H. BONNETT, *Hon. Treasurer*

Membership

	1.1.53	Resignations and Deaths	Presumed to have resigned	New Members	Restored to Roll of Members	31.12.53
Ordinary ...	150	6	13	11	0	145
Corporate	15	0	1	0	0	14
Student ...	11	0	1	2	0	10
Associate ...	34	0	2	3	1	34
Junior ...	14	0	3	2	0	14
	224	6	20	18	1	217

The lack of agreement within the different categories of membership is due to transfers between the categories. After two additional resignations as from the end of the year had taken place, the year 1954 began with 143 Ordinary Members, 14 Corporate, 10 Student, 34 Associate and 14 Junior Members, making a total of 215.

HON. MEMBERSHIP SECRETARY

PROCEEDINGS 1953

Indoor Meetings

59TH ORDINARY MEETING, 15th January 1953, Bedford. 'Birdwatching in Scotland', by F. C. Gribble. Attendance 33. *Chairman*: Mr F. G. R. Soper.

60TH ORDINARY MEETING, 29th January 1953, Luton. 'Talking on Fungi', by D. A. Reid. Attendance 12. *Chairman*: Dr J. G. Dony.

61ST ORDINARY MEETING, 16th February 1953, Bedford. W. Durant should have spoken on Orchids, but owing to the unsatisfactory attendance of only eight members due to inclement weather the lecture was postponed.

6TH ANNUAL GENERAL MEETING, 19th February 1953, Bedford. Details as printed in the last issue, No. 7, 1953, p. 11.

62ND ORDINARY MEETING, 12th March 1953, Bedford. This lecture on 'Trees' was to have been given by the late J. Arnold Whitchurch who passed away on 24th February. K. E. West together with A. W. Guppy volunteered at short notice to deputise. Attendance 19. *Chairman*: Mr K. E. West.

63RD ORDINARY MEETING, 8th October 1953, Bedford. 'Insects and Human Guinea-pigs', by Dr C. G. Johnson. Attendance 24. *Chairman*: Mr L. A. Speed.

64TH ORDINARY MEETING, 15th October 1953, Luton. 'Round and About', by Henry A. S. Key. Attendance 23. *Chairman*: Dr H. F. Barnes.

65TH ORDINARY MEETING, 29th October 1953, Bedford. Special meeting of the Ornithological Section at which the committee for the next twelve months was elected; Mr Henry A. S. Key (Chairman), Mr F. C. Gribble (Hon. Secretary), Miss Pamela Soper, Mr S. W. Rodell and a representative from Bedford School Natural History Society. A talk on Rare Birds of Prey and their Haunts followed. Attendance 24. *Chairman*: Mr F. C. Gribble.

66TH ORDINARY MEETING, 5th November 1953, Luton. This was the first joint meeting to be held with the South Bedfordshire Preservation Society. Dr G. A. Metcalfe gave a showing of bird films in colour and gave a running commentary. Attendance more than 60. *Chairman*: Dr J. G. Dony.

67TH ORDINARY MEETING, 19th November 1953, Bedford. 'An Introduction to the Natural History of Huntingdonshire', by C. F. Tebbutt. Attendance 34. *Chairman*: Mr K. E. West.

68TH ORDINARY MEETING, 3rd December 1953, Luton. 'Common Pests of Garden and Orchard', by Miss S. M. Young, B.Sc. Attendance 12. *Chairman*: Mr S. W. Rodell.

69TH ORDINARY MEETING, 10th December 1953, Bedford. This memorable meeting which was open to the public heard Dr J. G. Dony launch his recently published 'Flora of Bedfordshire'. Attendance 64. *Chairman*: Mr W. Durant.

Field Meetings

SUNDAY, 4TH JANUARY 1953, TURVEY PARK. *Leader*: Mr E. G. Eeles. A party of twelve members set out for a walk over the parkland in about three inches of snow. Bird-life was by no means plentiful though the usual winter flocks of Tits and Finches were seen including a few Goldcrests and Bramblings. A number of Hares were watched disporting in the snow.

SUNDAY, 22ND FEBRUARY 1953, WALK ALONG WOODED RIDGE FROM AMPHILL TO WILSHAMSTEAD. *Leader*: Mr Henry A. S. Key. An interesting walk on a fine day with twelve members present. Nothing of special importance was noted. Nuthatches and Coal-Tits were seen in Ampthill Park. Houghton Ruins were visited and a scarlet capped fungus (*Geopyxis coccinea*) was found in Houghton Wood (Kings Wood). Mistletoe was seen growing on Hawthorn on the ridge above Houghton where a Badger's earth was visited.

SUNDAY, 29TH MARCH 1953, HARDWICK SPINNEY, STAGSDEN. Over fifty members were present on a fine day when the inaugural meeting of the ecological survey of the wood was held. After deciding on the programme for the summer (i.e. the programme of work to be done in the spinney) and after the gathering had been addressed on the various aspects of the study by members of Council, the party broke up into several groups and did preliminary survey work.

SUNDAY, 12TH APRIL 1953, NORTHAMPTON SEWAGE FARM. *Leader*: Mr F. C. Gribble. Only five members attended this meeting, probably because of the exceedingly heavy rain which fell in the morning. A few Redshank, Dunlin and Ruffs were seen besides the usual Snipe and Lapwings. Several Shovellers were feeding on the marshy fields and a pair of Garganey and several Sheld-duck were seen.

SUNDAY, 19TH APRIL 1953, HATFIELD BROAD OAK. *Leader*: Mr K. E. West. Twenty-seven members met in cars at Bedford and proceeded to Hatfield Broad Oak. Nothing of great importance was found, all the usual spring flowers were

in evidence, but the Primrose was not so lavishly distributed as on some of our own clay woodlands. Many grand old forest trees were seen, mainly Oak, but the number of Horse Chestnuts was remarkable and these were in their early cover of first leaf making a most charming picture. An unusual feature was the large masses of Houndstongue in early growth, as many as 30-40 plants in one colony; also of interest were the many fine specimens of Clematis exposed by scrub clearance, many trailing from their support trees twenty feet or so, with thickness of stem nearly 2 inches. It was hoped to see the Large Tortoiseshell butterfly as it was reported to be at Broad Oak, but we were not fortunate.

SATURDAY, 25TH APRIL 1953, FLITWICK MOOR. *Leader:* Mr F. G. R. Soper. A party of twenty-one enjoyed a bright sunny afternoon at Flitwick Moor. A good number of spring migrants were seen and several nests found, including a Pheasant sitting on eggs. The high-light of the outing was a Hoopoe watched for some time by five members of the party; unfortunately, by the time the other members had been collected from other parts of the moor, the bird had disappeared in the direction of Greenfield.

THURSDAY, 7TH MAY 1953, FELMERSHAM GRAVEL PITTS. *Leader:* Lady Wells. About twenty-five members attended this meeting held on a fine summer evening. Several nests with eggs were found but nothing else of special interest except perhaps the Buckbean growing in a field on the other side of the road.

SATURDAY, 9TH MAY 1953, HARDWICK SPINNEY. *Leader:* Mr F. C. Gribble. This meeting was primarily intended to hear the birds' evensong. Twenty-five members attended. Little bird song was heard in spite of the good weather, although snatches of song from Nightingale, Chaffinch and Willow Warbler were heard. Nests of Nightingale, Great Tit, Chaffinch and Blackcap were among those found.

SUNDAY, 10TH MAY 1953, SHARPENHOE DOWNS. *Leader:* Dr J. G. Dony. This was primarily a botanical meeting, attended by fifteen members on a fine but fresh day. The morning was spent in a walk across Sharpenhoe Clappers to Smithcombes Hills where Pasque Flower was still to be found. There seemed little to be gained by further exploration here and a visit was made to Markham Hills in the afternoon. The party disbanded about 4 p.m.

SUNDAY, 17TH MAY 1953, MARSTON THRIFT. *Leader:* Mr A. W. Guppy. Heavy rain at lunch time no doubt kept some members away, but those who ventured (six members and two children) were rewarded by a fine and sunny afternoon although rather wet underfoot. The whole afternoon was spent in exploring this large tract of neglected woodland. Upwards of thirty species of flowering plants were found, including a great profusion of Yellow Archangel (*Galeobdolon luteum*). The Wood Spurge (*Euphorbia amygdaloides*) occurs plentifully in one locality and a patch of the white variety of Bugle (*Ajuga reptans*) was of interest. The Early Purple Orchid (*Orchis mascula*) was scarce, only about six specimens being found.

MONDAY, 25TH MAY 1953, WOOD WALTON FEN (HUNTS.). *Leader:* Mr K. E. West. About thirty-five members attended this meeting, the day being fine and very hot. These formed various groups with kindred interests; under self-appointed leaders and each found much of interest. All the plants expected in such a habitat were found in various stages of growth, the chief being *Viola stagnina*, a rare plant of fenland and turf bogs, and as is usual this was found by those not really looking for it. Many caterpillars of the Large Copper butterfly were seen feeding on Great Water Dock and many specimens of that rare butterfly the Chequered Skipper could be seen feeding on the flowers of Ground Ivy; this is of particular interest to us as it was first noticed in this county in 1798 at Clapham Park by that great naturalist Dr Abbott.

SUNDAY, 7TH JUNE 1953, BOW BRICKHILL HEATH. *Leader:* Mr W. Durant. Seventeen members met at Bow Brickhill for an afternoon excursion over the heath in rather dull but otherwise fine weather. A large number of typical heath plants were observed but none of special note. At one corner of the heath a marshy pond proved of interest to the entomologists present; it also added to the variety of plants seen.

SUNDAY, 14TH JUNE 1953, SWINESHEAD WOOD. *Leader:* Mrs E. L. Wade. Twenty-two members attended this meeting, the weather being rather dull. A long walk was taken through the wood, but nothing of unusual interest was found. The weather deteriorated later. The party was entertained to tea by Mrs Wade.

SATURDAY, 20TH JUNE 1953, OLD WARDEN PARK. *Leader:* Mr J. S. Dunn. This meeting mainly of botanical interest was attended by fourteen members on a fine and mild but dull afternoon. Nothing of special botanical interest was found. In one plantation the underside of a large gall, 3 ft 6 in. up on the trunk of an old oak, was seen to be polished and scored. As no cattle had had access to the area it was thought likely that it had been used by deer to remove velvet from their antlers. This could not be confirmed from hoof marks however because of the carpet of leaves.

SUNDAY, 5TH JULY 1953, SEWELL TO TOTTERNHOE KNOLL AND MEAD. *Leader:* Mr H. B. Sargent. Only seven members attended this meeting, the extreme heat probably prevented more from being present. Starting from Dunstable, the party walked along the railway embankment to the village of Sewell, afterwards exploring the lower slopes of Totternhoe Knoll and returning to Dunstable via part of the Green Lane. Nothing of great interest was discovered. Various Orchids on the slopes of the Knoll were identified.

SUNDAY, 26TH JULY 1953, DEVILS DYKE (NEWMARKET) AND LAKENHEATH. *Leaders:* Mr B. B. West and Mr F. C. Gribble. Twenty-eight members attended in private cars; the weather was sunny in the morning with heavy rain showers in the afternoon. On Devils Dyke a number of Red-Backed Shrike were seen and the chalk flora was at its best. The Purple Milk-vetch (*Astragalus danicus*) and the Spiked Speedwell (*Veronica spicata*) were two of the rarest plants seen. Unopened flowers of the Gentian (*Gentiana germanica*) were also observed. Freshly emerged Chalk Hill Blue (*Lysandra coridon*) butterflies were seen in large numbers, but no extreme variations were observed. Numerous larvae of the Small Blue (*Cupido minimus*) were found in the dead and dying heads of the Kidney-vetch (*Anthyllus vulneraria*). The remarkable colonisation by this plant of the length of the dyke cut down opposite to the aerodrome runway was particularly noted. Later in the afternoon at Lakenheath Wood Lark and Whinchats were seen and a nearly full-grown Stone Curlew was caught by hand and released after examination. The most interesting botanical find here was the Moonwort (*Botrychium lunaria*).

SATURDAY, 8TH AUGUST 1953, MOTH SUGARING IN HARDWICK SPINNEY, STAGSDEN. *Leader:* Mr B. B. West. A party of ten members attended this meeting, the weather being ideal (very warm and no wind), but in spite of this captures were not as numerous as would have been expected. The most frequent to sugar were: the Currant Moth or Magpie (*Abraxas grossulariata*), the Yellow-tail (*Euproctis chrysorrhoea*) and the Brown-tail (*E. phaeorrhoea*). Others fairly frequent were Scalloped Oak (*Crocallis elinguaris*), the Large Yellow Underwing (*Triphaena pronuba*) and the Lesser Yellow Underwing (*T. comes*). Single specimens of the Square Spot (*Ectropis consonaria*) and the Common Footman (*Eilema lurideola*) arrived. Perhaps the most interesting insect taken during the evening was the Copper Underwing (*Amphipyra pyramidea*) that arrived at the sugar within a few minutes of the tree being painted.

SUNDAY, 23RD AUGUST 1953, NORTHAMPTON SEWAGE FARM. *Leader:* Mr Henry A. S. Key. The weather was dull and squally when nineteen members arrived at the Sewage Farm. A fair selection of migrating waders were seen including Common and Green Sandpiper, Ringed Plover, Ruff, Greenshank, Redshank, etc.

SUNDAY, 6TH SEPTEMBER 1953, CHICKSANDS WOOD. *Leader:* Mr L. A. Speed. Twenty-three members met on this fine and sunny day; the interest was mainly botanical, the principal object being trees and shrubs of which a large number were noted. Much interest was shown in the Small-leaved Lime (*Tilia cordata*) for which the wood is famous. Other interesting trees included the Hornbeam, Aspen and both types of Hawthorn.

SUNDAY, 18TH SEPTEMBER 1953, WHIPSNADE TO DUNSTABLE. *Leader:* Mr H. Sargent. Eight members were present on this misty and damp day. Meeting at the gates of the Zoological Gardens during the morning and walking across Whipsnade Common to the Spinney, thence to the top of Dunstable Downs, the party explored for a time to observe bird movements. But only one or two small flocks of Goldfinches were seen. Returning to Whipsnade along the path at the bottom of the Downs to Dunstable via the golf course path, nothing of particular interest was noted.

SUNDAY, 15TH NOVEMBER 1953, WOBURN SANDS. *Leader:* Mr Henry A. S. Key. The weather was dull and eighteen members were present on this ornithological meeting. Woodcock and Nuthatches were seen on Aspley Heath, as well as Coal-Tits, many Long-tailed Tits and Goldcrests. Further flocks of Goldcrests were also seen in the coniferous plantations.

SUNDAY, 13TH DECEMBER 1953, BARTON TO SUNDON. *Leader:* Mr F. C. Gribble. This was a bad day for a walk across the chalk hills; this probably accounted for only seven members attending. With the poor visibility little was seen apart from the usual Yellow Hammers, a Chaffinch and a Kestrel. By Sharpshoe the party was lucky enough to flush a Woodcock from the scrub and all had a good view of him. A number of flowers were in bloom and quite a few insects were seen close to hedges.

Botanical Section

The Botanical Exhibition was held on Monday, 20th July 1953, in the Nature Room at 4 The Avenue, Bedford, and was attended by 14 members. There were five exhibitors.

Miss G. H. Day showed specimens of the Crested Cow-wheat (*Melampyrum cristatum*), the Great Dodder (*Cuscuta europaea*) and the Narrow-leaved Everlasting Pea (*Lathyrus sylvestris*).

Dr J. G. Dony brought the Sulphur Clover (*Trifolium ochroleucon*), the Hare's Ear (*Bupleurum rotundifolium*), the Broad Spurge (*Euphorbia platyphyllos*) and the Dyer's Greenweed (*Genista tinctoria*).

Mr W. Durant's collection included the Blue Flea-bane (*Erigeron acer*), the Lesser or Common Dodder (*Cuscuta epithimum*), the Sweet Agrimony (*Agrimonia odorata*) and the newly established *Solanum sarrachoides*.

Mr C. S. Payne showed the Maidenhair Tree (*Ginkgo biloba*) brought from a Northamptonshire garden.

The Botanical Hon. Secretary brought specimens of the Large-flowered Hemp Nettle (*Galeopsis speciosa*) from its best-known station on the edge of Flitwick Moor.

On this occasion the exhibition was restricted to a shorter period than in the previous year with advantage to the attendance. There is still room however for more members to bring specimens for discussion and identification.

A. W. GUPPY

The Fungus Foray

The foray was held on 27th September 1953 at Odell Great Wood, Odell, near Sharnbrook. Unfortunately the weather was very poor at first, and the dozen or so enthusiasts who attended had to struggle through dense fog. Later in the day however the sun managed to break through.

The foray was led jointly by Dr R. W. G. Dennis and Mr D. A. Reid and a good number of specimens were collected. Indeed the list of species tends to give an erroneous idea of the abundance of fungi, that were in fact rather scanty. This was presumably largely due to the type of young coppiced woodland and the dry cracked soil.

It is interesting to note that of the 109 species found, 37 are either new to the county or confirm very ancient records. This indicates how much more investigation is still required before the fungus flora of the county is even approaching a state when it is adequately known.

Perhaps the most exciting find was that of *Sistotrema ericitorum*. This has been collected only once before in this country. It was growing in some abundance in deep cracks in the soil under hazel; this may perhaps have been due to the added moisture available. It is possible that this fungus is really only a form of *S. confluens* Pers. ex Fr. but this is itself very rare and has only once been reported from Bedfordshire.

Cantharellus cinereus (Pers.) Fr.; *Clitocybe geotropa* (Bull.) Fr.; *Clitopilus prunulus* (Scop.) Fr., *Collybia fusipes* (Bull.) Berk.; *C. radicata* (Rehl.) Berk.; *Coprinus plicatilis* (Curt.) Fr.; *C. radiatus* (Bolt.) Fr.; **Cortinarius cinnamomeus* Fr. var. *croceus* Schaeff.; **C. nemorensis* Lange; **C. pumilus* Lange; *C. triumphans* Fr.; *Crepidotus mollis* (Schaeff.) Fr.; **Entoloma prunuloides* Fr.; **Galera spicula* (Lasch) Fr.; *G. tenera* (Schaeff.) Fr.; *Hebeloma crustuliniforme* (Bull.) Fr.; *Hypholoma fasciculare* (Huds.) Fr.; *H. hydrophilum* (Bull.) Fr.; *Inocybe geophylla* (Sow.) Fr.; *I. geophylla* (Sow.) Fr. var. *lilacina* Fr.; **I. pyriodora* (Pers.) Fr.; *Laccaria amethystina* (Vaill.) Cooke; *L. laccata* (Scop.) Cooke; **L. tortilis* (Bolt.) Cooke; *Lactarius blennius* Fr.; *L. glycyosmus* Fr.; *L. mitissimus* Fr.; *L. pyrogalus* (Bull.) Fr.; *L. seriftuus* (DC.) Fr.; *L. subdulcis* (Pers.) Fr.; *L. torminosus* Fr.; *L. vellereus* Fr.; *Leptonia euchroa* (Pers.) Fr.; *Marasmius confluens* (Pers.) Karst.; *M. dryophilus* (Bull.) Karst.; *M. epiphyllus* (Pers.) Fr.; **M. foetidus* (Sow.) Fr.; *M. ramealis* (Bull.) Fr.; **Mycena citromarginata* Gill.; *M. galericulata* (Scop.) Fr.; *M. galopus* (Pers.) Fr.; *M. polygramma* (Bull.) Fr.; *M. sanguinolenta* (A. & S.) Fr.; **M. speirea* Fr.; *Paxillus involutus* (Batsch) Fr.; *Pluteus cervinus* (Schaeff.) Fr.; **Psalliota vaporaria* (Vitt.) Moll et Schaeff.; **Psathyrella disseminata* (Pers.) Fr.; *Russula cyanoxantha* (Schaeff.) Fr.; *R. emetica* (Schaeff.) Fr.; *R. fallax* (Fr.) Cooke; *R. venosa* Vel.; **Tricholoma aggregatum* (Schaeff.) Secr.; **T. albo-brunneum* (Pers.) Fr.; (**T. atro-squamosum* (Chév.) Sacc.; *T. saponaceum* Fr.; **T. sejunctum* (Sow.) Fr.

Boletus scaber (Bull.) Krombh.

Daedalea quercina (L.) Fr.; **Fomes connatus* (Fr.) Gillet; *Merulius tremellosus* (Schrad.) Fr.; *Polyporus betulinus* (Bull.) Fr.; *P. lacteus* Fr.; *P. sulphureus* (Bull.) Fr.; *P. varius* Fr.; *Polystictus versicolor* (L.) Sacc.; *Poria versipora* (Pers.) Baxter; **Sistotrema ericitorum* Bourdot et Galzin; *Trametes confragosa* (Bolt.) Jörs.

**Hydnum repandum* (Linn.) Fr.

Clavaria cinerea (Bull.) Fr.; *C. corniculata* (Schaeff.) Fr.; **C. corniculata* f. *simplex* Donk; *C. cristata* (Holmsk.) Fr.; *C. fusiformis* (Sow.) Fr.; *C. inaequalis* (Müller) Qué. l.; **C. persimilis* Cotton.

Corticium confluens* Fr.; **Epithele typhae* (Pers.) Pat.; **Gloeocystidium lactescens* (Berk.) v. H. et L.; (Hymenochaete tabacina* (Sow.) Lév.; *Stereum hirsutum* (Willd.) Fr.; *S. rugosum* (Pers.) Fr.; *S. spadiceum* Fr.; (**Thelephora anthocephala* (Bull.) Fr.

Lycoperdon depressum Bon.; *L. pyriforme* (Schaeff.) Pers.

Auricularia mesenterica Fr.

Coleosporium euphrasiae Wint.; *Melampsorium betulinum* Kleb.; *Puccinia obtegens* Tul.; **Pucciniastrum circaeae* Speg.; **Triphragmium ulmariae* Wint.; **Uromyces valerianae* Fckl.

**Propolis versicolor* (Fr.) Fr.

**Anthracobia melaloma* (A. & S.) Boud.; *Calycella citrina* (Hedw. ex Fr.) Qué. l.; *Coryne sarcoides* (Jacq. ex Fr.) Tul.; **Helotium caudatum* (Karst.) Vel.; *H. fructigenum* (Bull. ex Fr.) Fuckel.

Nectria cinnabarina (Tode ex Fr.) Fr.

Diatrype stigma (Hoffm. ex Fr.) Fr.; **Hypoxylon fuscum* (Fr.) Fr.; *Ustilina vulgaris* Tul.; *Xylaria hypoxylon* (L. ex Fr.) Grev.

**Amblyosporium botrytis* Fres.; **Calcarisporium arbuscula* Preuss.; **Cylindrium griseum* Bon.

Ceratiomyxa fruticulosa Macbr.

*= Species new to the county.

(*)= Ancient records confirmed.

D. A. REID.

Ornithological Section

Cold weather with a slight covering of snow was the setting of the Section's first meeting at Turvey Park in January. However some twelve members enjoyed the walk although little notable bird life was seen. Later in the month the Secretary gave a lecture entitled 'Bird-watching in Scotland', outlining his experience in the region of the Cairngorm Mountains. The winter programme finished with a further walk which was held on the ridge of hills between Ampthill and Flitwick.

A meeting in April to watch waders and ducks at Northampton Sewage Farm was unfortunately marred by heavy rain. However five stalwarts turned out and were rewarded with excellent views of Garganey, Sheld-duck, several Shoveler, Ruffs, Dunlin and the usual Snipe. During May and June a record of nesting birds at Hardwick Spinney, Stagsden was maintained. An evening meeting was held to listen to bird song; following this several members stayed all night to listen to the dawn chorus.

At Totternhoe in July a walk along the chalk hills produced no Red-backed Shrikes though several Lesser Whitethroats were seen and heard. Information kindly given by Mr A. E. Vine of Cambridge Bird Club was especially helpful to the meeting at Lakenheath and Devil's Ditch, Newmarket, on 26th July; a number of Red-Backed Shrikes, Whinchats and Wood Lark were seen. Good views were obtained of Stone Curlew, a youngster being caught and ringed. Rain washed out the meeting at Northampton Sewage Farm in August and some twenty members had a fruitless journey.

During the last quarter of the year three field meetings were held at Whipsnade, Woburn Sands and Streatley. The first revealed two large parties of Goldfinches on the Downs and on both of the latter Woodcock were seen.

At the October meeting the committee of the section was re-elected and Mr H. A. S. Key gave an illustrated lecture on bird-life in Wales. This was followed in November by the Fifth Ornithological Conference which brought a most successful conclusion to the activities of the section for the year.

On the whole meetings were well attended in spite of inclement weather at times. It is to be hoped that in the coming year more members will take part in the visits to Hardwick Spinney, Stagsden, as these are of considerable help to the beginner in bird-watching.

F. C. GRIBBLE

Fifth Bedfordshire Ornithological Conference

SUNDAY, 22ND NOVEMBER 1953

Once again this gathering was held in the County Headquarters of the St John Ambulance Brigade, Cauldwell Street, Bedford, where a record attendance of nearly two hundred represented Societies in the usual six counties and even much further afield. In every respect this was the most successful Conference so far held.

Mr W. E. K. Piercy - County Representative of the British Trust for Ornithology that was jointly responsible for organising the meeting - took the Chair and, in welcoming the visitors, spoke on the aims and objects of that body. He was supported in his remarks by the Trust's Assistant Secretary, Mr J. F. Burton.

The Chairman then introduced the speaker for the morning session, Mr R. S. R. Fitter, a celebrated authority on birds and author of a number of books on natural history. His talk on 'Some Problems of Bird Identification' was admirably illustrated with crayon drawings by the co-author of their recently

published work on *British Birds and their Recognition*, Mr R. A. Richardson, the Norfolk bird artist. His impromptu sketches in response to problems of the audience were warmly applauded. Both lecturers were thanked for the way in which their co-operative effort had proved so instructional.

The ladies of the Social Committee were again responsible for the excellent catering arrangements which contributed in no small way to the success of the day. Those concerned were thanked from the Chair for their efficiency and generous support. A Trust stall operated by the Assistant Secretary and Mr F. C. Gribble realised record sales of literature.

Mr R. P. Bagnall-Oakeley opened the afternoon session with a showing of his own colour films taken chiefly by marshy pools on the Norfolk coast and depicting an interesting series of rare and more unusual migrants and vagrants feeding by the dunes and saltings. The standard of the films and the eloquence of delivery were both thoroughly appreciated as well as the lecturer's informative replies to the many questions from the body of the hall. An expression of thanks from the Chair was endorsed by the gathering. (It was learned with regret that after leaving for home Mr Bagnall-Oakeley had the misfortune to collide with a stray bullock en route. Although the car suffered considerable damage he himself escaped with only minor abrasions, but some of the irreplaceable films that the Conference had just seen were wholly or partly destroyed.)

There followed a period of general discussion during which the Hon. Organising Secretary appealed for closer co-operation between neighbouring Societies both at lectures and in the field. He said that participations in Trust-aided investigations would help to discourage a too parochial outlook. Many of the audience expressed similar views. Before closing the discussion Mr Burton appealed for an extra effort on the part of Trust members to encourage many others to join the Trust for the mutual advantages that would result.

On behalf of the Organisers Mr F. G. R. Soper thanked the visitors for their attendance and evident interest, while Mr M. Goodman of the Kettering and District Naturalists' Society and Field Club replied for the audience.

To complete the day's enjoyment Dr G. A. Metcalfe once again showed several Kodachrome films of northern birds. These, as always, evoked expressions of appreciation on all sides.

HENRY A. S. KEY, *Hon. Organising Sec.*

Annual General Meeting 1954

THE SEVENTH ANNUAL GENERAL MEETING was held in the Nature Room of the Bedford Training College, The Avenue, Bedford, on Thursday, 11th February 1954.

Fifty-three Members had assembled when the Chairman, Mr F. G. R. Soper, called on the Hon. General Secretary to read the minutes of the previous Annual General Meeting which were adopted. Mr Henry A. S. Key then read the Report of the Council for 1953 which was adopted and is printed on page 2 of this JOURNAL.

In presenting his Report and Statement of Accounts for the past twelve months the Hon. Treasurer, Mr W. H. Bonnett, was pleased to be able to report an increase in the Society's finances despite a necessary increase in expenditure. Both the Report and Statement were adopted unanimously. The Hon. Treasurer and the Hon. Auditor, Mr Eric Lucas, were thanked for their valued services.

Messrs F. C. Gribble and A. W. Guppy then submitted the Reports of the Ornithological and Botanical Sections. The former (page 10) indicated a satisfactory year of progress though once again there was room for increased outdoor activity. The latter (page 8) dealt solely with the Botanical Exhibition. Miss E. Proctor supplemented Mr Guppy's report by giving details of the important ecological work that the botanists had done during the year at Hardwick Spinney, Stagsden. Such surveys would be continued here and elsewhere. Both Reports were adopted and the Secretaries were thanked.

The election of Officers was the next business. The Chairman announced that the Council had re-nominated all the retiring Officers and on a show of hands these were elected. Mr Soper then referred to the appointment of a President and paid tribute to the former holder of that office, the late Duke of Bedford. He outlined discussions that had taken place in Council and which had resulted in the Hon. General Secretary being directed to offer the appointment to a certain worthy person, with provision in case of a first refusal. The meeting endorsed the action of the Council.

As twelve nominations for the ten vacant seats on the Council had been received, a ballot was held. This resulted in the following members being elected: Miss E. Proctor, Miss G. M. Tattam, Dr J. G. Dony and Messrs J. S. Dunn, W. Durant, F. C. Gribble, A. W. Guppy, S. W. Rodell, B. B. West and K. E. West. The scrutineers were Messrs W. H. Bonnett and L. A. Speed.

Dr H. F. Barnes outlined the progress of the next issue of the JOURNAL and appealed for an increase in variety of articles submitted. Miss E. Proctor presented an encouraging list of additions to the Library. The meeting recorded its appreciation for the services of the Hon. Editor and Hon. Librarian.

The business concluded, under 'Any other business', with a discussion of the forthcoming Summer Programme. It was agreed that one coach trip should be made during the season.

To conclude the evening Mr F. C. Gribble gave a short lecture, entitled 'Bird-watching in Scotland', that centred mainly round the activities of five Members of the Society in the Cairngorms during the summer of 1953. The lecture which was greatly appreciated was illustrated with a series of Kodachrome slides taken by Mr Henry A. S. Key who operated the lantern on this occasion.

The Position with regard to the Conservation of Nature in Bedfordshire

The publication of the County Development Plan (1952) made more widely known the areas in the county which naturalists consider to be of scientific importance. Some of these have been subject to most serious threats.

The most serious was the purchase in 1952 of the grazing rights on Cow Common, which it was intended to clear, drain and plough. Cow Common was reserved as permanent pasture in the Totternhoe Enclosure Award (1896). To have tested the case would have meant a costly High Court action. The South Bedfordshire Preservation Society lost a similar action in attempting to save the Green Lanes at Totternhoe. The Nature Conservancy was unwilling to make a precedent in using its powers of compulsory purchase. I did the best I could in persuading the new owner to leave about an acre unploughed. In 1953 all the interesting plant species had become extinct because of the drainage of the Common and this area is now ploughed.

Less serious was the application to build more houses in Oldhill Wood, Whipsnade. This had been scheduled with the more interesting and neighbouring Deadmansey Wood to give a large area of natural woodland. I gave evidence for the Nature Conservancy at an enquiry and I regret that the application was subsequently granted. There is, however, no reason to think that the wild life of Deadmansey Wood will suffer.

Parts of Marston Thrift were felled in 1953 but on instructions from the Forestry Commission the wood is being replanted and its wild life should not suffer. A proposal to plant the open parts of Rowney Warren with conifers is being watched and I trust that some of the more interesting parts of the Warren may be saved. Chicksands Great Wood will probably be felled in 1954, but as this is Crown Land the avenues of approach are limited.

In 1951 and 1952 some portions of the A6 road about eight miles north of Luton were sprayed as an experiment with hormone weed-killer. I was asked by the Nature Conservancy and the Bedfordshire County Council to report on the effect of this experiment on plant growth. The experiment was not continued in 1953.

The position regarding other areas is unchanged, but Knocking Hoe has been scheduled as a proposed National Reserve. It is too much to hope that increasing demands of agriculture, industry, town development and road transport will not affect other areas of interest. Threats should be reported promptly to the Society and full consideration will be given to appropriate action which may be taken.

The areas scheduled in the county are: Rammamere Heath and King's Wood, Heath and Reach; Baker's Wood and Rushmere Heath; Monday's Hill Pit (of geological interest); Totternhoe Castle; Sewell Marsh (Cow Common); Wavendon Heath Ponds; Marston Thrift; Stevington Marsh; Great Hayes Wood; Oldhill and Deadmansey Woods; Fancott Meadows; Galley Hill, Streatley; Barton Hills and Ravensburgh Castle; Westoning Moor; Cooper's Hill; Flitwick Moor; Kempston Hardwick Pit; Keysoe Park Wood; Deacon Hill; Knocking Hoe; Heppershall Hill Pit and Arlesey Brick Pit (of geological interest); Rowney Warren; and Eaton Socon Meadows.

On behalf of Nature Conservation Committee,

Convener: J. G. DONY

The Weather of 1953

By A. W. GUPPY

There is a general opinion that 1953 was rather cold and wet, but this is attributable to the unseasonable weather in early June, and to the fact that over 40 per cent of the year's rainfall occurred during the three summer months, June, July and August: in reality, the year as a whole was warmer and drier than its three predecessors.

The year's weather may be summarised as follows:—

1st–8th January	Rather cold, with snow showers.
9th Jan.–7th Feb.	Dry and comparatively mild; few night frosts.
8th–16th Feb.	Wintry, with considerable snowfall.
17th Feb.–25th Mar.	Very dry, unusually mild.
26th Mar.–6th Apr.	12 consecutive wet days with heavy showers.
18th–24th Apr.	A fine warm week.
2nd–12th May	Another fine period.
19th–26th May	Becoming much warmer, culminating in the second hottest day of the year.
27th May–3rd June	Abrupt change to unseasonably cold weather.
11th June–31st July	Generally wet period, with rain on 34 out of 51 days. Temperatures normal, or slightly below.
1st–14th Aug.	A fine hot fortnight: 12th August the hottest day of the year.
15th–29th Aug.	Rainy and showery; temperatures not exceeding 72°.

30th Aug.—14th Sept.	Another fine fortnight.
15th—22nd Sept.	A showery week.
23rd Sept.—11th Oct.	Almost completely dry; rather cool.
12th Oct.—14th Nov.	Cool with frequent rain.
15th Nov.—11th Dec.	Dry, with only slight rain on 3 days out of 27; generally dull and foggy.
12th—31st Dec.	Mostly dry and mild, with much fog during the second week.

TEMPERATURE

The hottest day was 12th August, with 90°F; 92° was recorded in Bedford and 90° at Cardington. This was succeeded by the warmest night, during which the temperature did not fall below 65°.

The coldest day was 7th January with 34°, and the lowest night minimum, 24°, was recorded on the nights of 7th and 14th February.

Air frost occurred on 39 nights (as compared with 67 last year), the latest being on the 25th April, the earliest on 2nd November. There were only two air frosts in November, and only one in December.

RAIN AND SNOW

The rainfall was everywhere much below average, and varied between 75 and 90 per cent of the 1952 totals. It is interesting to note that, whereas August was the wettest month of the year in north and west Bedfordshire, July was the wettest at stations in the middle of the county.

At all stations March and December were the driest months, with an average of about $\frac{1}{2}$ inch apiece.

The wettest day was 23rd August with 1.095 inches. During the year there were three periods of drought:—

20th February—10th March	19 days
12th—25th March	14 days
28th September—11th October	14 days

It will be seen that, had it not been for a very slight rainfall on 11th March, there would have been a period of 34 consecutive rainless days. It is noteworthy that this exceptionally prolonged drought should have been immediately followed by 12 consecutive wet days, the longest wet spell of the year.

Snow fell on 10 days, mostly during the second week of February, the heaviest falls occurring on 9th and 10th of that month (0.42 and 0.46 inch respectively) during the passage of unusually deep depressions in which the barometer fell as low as 28.25 inches.

THUNDERSTORMS

Thunder was heard on nine occasions. In only one case, that of the afternoon of 26th June, was there considerable rainfall. On that day 0.68 inch was recorded.

RAINFALL FOR 1953

	Ampthill	Aspley Guise	Bromham	Cardington	Carlton	Kempston	Silsoe
January ...	1.12	1.41	0.84	0.80	1.22	0.94	0.95
February ...	1.56	1.75	1.62	1.44	2.09	1.50	1.12
March ...	0.57	0.70	0.34	0.53	0.42	0.54	0.45
April ...	2.05	2.40	1.87	1.54	2.30	1.98	2.11
May ...	1.60	2.23	1.47	1.65	1.75	1.38	1.44
June ...	1.56	1.63	2.51	1.96	1.89	2.32	1.94
July ...	2.98	2.70	2.16	1.77	2.25	2.31	2.63
August ...	2.58	3.83	3.15	2.74	2.50	3.27	2.49
September ...	1.16	1.22	0.99	0.81	1.18	0.79	1.13
October ...	2.34	1.63	1.63	1.43	2.05	1.90	2.49
November ...	1.40	2.00	0.98	1.36	1.91	1.17	1.24
December ...	0.68	0.62	0.49	0.40	0.44	0.43	0.55
TOTALS ...	19.60	22.12	18.05	16.43	20.00	18.53	18.54

Ampthill (Mr Horne)
 Aspley Guise (Mr Young)
 Bromham (the writer)
 Cardington Aerodrome (per Mr Speed)

Carlton (Col. Battcock)
 Kempston (Mr Payne)
 Silsoe (N.I.A.E., Wrest Park, per Mr Dunn)

The Ecology of the Bedfordshire Mollusca (conti.)

BY BERNARD VERDCOURT

6. MISCELLANEOUS NON-WOODED LOCALITIES

When dealing with small animals, such as Mollusca, the terms used for large areas such as 'wood' and 'meadow' are rather meaningless. In a meadow, for example, there may be a multitude of micro-habitats each with its different microclimate and other characteristics - on grass blades, under moss and logs of wood, under stones, etc. Some species are to be found under logs in meadows, woods, dried-up marshes, and hedges and are only to be described as characteristic of damp, dark places irrespective of whether they happen to be in a meadow or in a forest.

The fauna to be found in non-wooded localities (off the chalk hills) which are also rather dry is mostly uninteresting. A few localities from various parts of the county are listed below.

East Hyde. Meadow on alluvial soil by R. Lea (5.9.1945).

<i>Goniodiscus rotundatus</i>	frequent on stumps
<i>Clausilia bidentata</i>	frequent on stumps
<i>Monacha cantiana</i>	frequent on plants
<i>Helix (Cepaea) hortensis</i>	frequent on plants

Roadsides and Meadows on the Greensand.

CLOPHILL. ROADSIDE (5.8.1946).

<i>Cochlodina laminata</i>	small juvenile on old stump (possibly introduced from the State Forest)
<i>Trichia hispida</i>	one under old rag
<i>T. striolata</i>	common under stumps and logs
<i>Monacha cantiana</i>	on plants, particularly <i>Armoracia lapathifolia</i>
<i>Helix aspersa</i>	on plants, particularly <i>Armoracia lapathifolia</i>
<i>Helix (Cepaea) hortensis</i>	on plants, particularly <i>Armoracia lapathifolia</i>
<i>H. (C.) nemoralis</i>	on plants, particularly <i>Armoracia lapathifolia</i>
<i>Euconulus fulvus</i>	under stones

A very similar fauna is found in the Ampthill district together with *Arion ater*, *Agriolimax reticulatus* and *Limax maximus*. *Helicella virgata* occurs near Maulden Church but the soil there is probably calcareous since the boulder clay is very near.

It is on the Greensand belt that the few true heaths in the county occur. The only snail I have found is *Vitrina pellucida* at Rushmere. Damp heathy places - such as Wavendon Heath already mentioned - have a more prolific fauna.

Roadsides and Meadows on the Gault.

The marshy meadow Hummocky Field at Totternhoe has already been dealt with. The drier localities are rather similar and the whole

area is characterised by *Arianta arbustorum* which occurs from Leighton Buzzard to Cockayne Hatley. When young it is often to be found under the bark of trees, e.g., at Fancott (10.2.1946) juveniles were found under elm bark with *Succinea putris*, *Clausilia bidentata* and *Gomiodiscus rotundatus*. The following list of species from a field at Wrestlingworth (20.7.1947) is fairly typical.

<i>Oxychilus helveticum</i>	common under moss
<i>Helix (Cepaea) hortensis</i> and <i>H. (C.) nemoralis</i>	common
<i>Monacha cantiana</i>	common in hedgerows, etc.
<i>Helicella virgata</i>	rare
<i>Arianta arbustorum</i>	common
<i>Cochlicopa lubrica</i>	common under moss

Roadsides and Meadows in the north.

A series of localities on Boulder Clay, Oxford Clay and Oolite have been examined. The area is characterised by *Helicella* species.

THURLEIGH. BOULDER CLAY.

<i>Helicella itala</i>	rare
<i>H. virgata</i>	very abundant
<i>H. caperata</i>	frequent

STEVINGTON. MEADOWS ON ALLUVIUM OVER OOLITE.

<i>Limax maximus</i>	under logs
<i>Oxychilus alliarium</i>	under logs
<i>O. helveticum</i>	under logs
<i>Helix (Cepaea) nemoralis</i>	rare
<i>Monacha cantiana</i>	roadsides, etc.
<i>Helicella itala</i> var. <i>minor</i>	common
<i>H. virgata</i>	abundant
<i>Clausilia bidentata</i>	abundant under logs
<i>Arion ater</i>	common
<i>Vallonia excentrica</i>	frequent under logs
<i>Pupilla muscorum</i>	common under logs
<i>Vertigo pygmaea</i>	common under logs
<i>Cochlicopa lubrica</i>	common under logs

PERTENHALL. GRASSY ROADSIDE. OXFORD CLAY AND GRAVEL (29.8.1945).

<i>Helicella heripensis</i>	rare
<i>H. itala</i>	rare
<i>Monacha cantiana</i>	common

OKLEY. ROUGH GROUND. BOULDER CLAY (17.8.1946).

<i>Helicella caperata</i>	frequent
<i>Monacha cantiana</i>	frequent

SOULDROP. TUNNEL BAULK AND CUTTING. ROUGH GROUND ON OOLITE.

<i>Limax maximus</i>	juvenile under log
<i>Oxychilus helveticum</i>	rare under mossy brick rubble
<i>Retinella pura</i>	rare under mossy brick rubble
<i>R. nitidula</i>	rare under mossy brick rubble
<i>Helix (Cepaea) hortensis</i>	rare under mossy brick rubble
<i>Helicella itala</i>	abundant on plants on baulk

<i>H. caperata</i>	frequent, abundant on plants on baulk
<i>H. virgata</i>	dead shells only
<i>Monacha cantiana</i>	common
<i>Clausilia bidentata</i>	rare under moss
<i>Vallonia excentrica</i>	dead shells on bare Oolite
<i>Ena obscura</i>	on embankment, dead shells possibly from previous copses
<i>Goniodiscus rotundatus</i>	under mossy brick rubble
<i>Garychium tridentatum</i>	rare, under mossy brick rubble

There are two faunas mixed here – one with species liking rather moist dark places to be found in alcoves along the cutting and the other with species which are at home on rough, porous, highly calcareous ground. *Helicella itala* is characteristic of this sort of habitat and occurs in abundance on soil of very similar texture on the Markham Hills.

GARDENS may be discussed under this heading. I have only examined gardens at Luton. The subject of slugs in gardens has been exhaustively treated by Dr H. F. Barnes in a series of papers. The most highly 'domesticated' mollusc is *Limax flavus* which frequently enters houses. The usual fauna of a small Luton garden is :—*Limax maximus*, *Agriolimax reticulatus*, *Milax sowerbyi*, *Arion hortensis*, *Oxychilus cellarium*, *Helix aspersa* and *Trichia striolata*. In addition, *O. alliarium* is often found. In gardens on the edge of the town 'outsiders' are more frequent, e.g. *Goniodiscus rotundatus*, *Trichia hispida* and *Monacha cantiana*, particularly where fragments of old hedges remain. I once found numerous *Helicella virgata* on a rubbish dump in Manton Drive which may have come from Warden Hills.

Bedfordshire Plant Galls

PRELIMINARY LIST

Part II. Hymenoptera

CYNIPIDAE (Gall Wasps)

BY RAY PALMER

Some of the Gall Wasps attached to the oak are of particular interest because of the strange alternation of generations which takes place. It is only by experimental breeding that these alternations have been worked out; previously the two generations of each insect were regarded as separate species and even placed in distinct genera.

In each case one generation consists of winged males and females which are sometimes wingless, while the next generation is of females only – usually winged. These mateless females produce fertile eggs by parthenogenesis, and the two generations produce totally different galls, usually on quite different parts of the tree. It is a curious fact that the galls produced by one generation may be very common and abundant, while the galls of the alternate generation are exceedingly scarce; though it must be admitted that the presumed scarcity may be due in many

cases to the small size and obscure nature of the galls. Several cases are noted where the alternate form of a common gall has not been found, and the search for such obscure galls provides interesting scope for any student of the subject.

There are still some half dozen species of oak gall wasps in which only the sexual generation is known, and a similar number where only the agamic generation is known. There is a probability that further research will link up some of these as alternating generations of each other.

Rubus fruticosus Bramble

Diastrophus rubi Bouché

'Bramble stem gall'. Very common in most localities where brambles grow.

Nepeta hederacea Tre. Ground Ivy

Liposthenes latreillei Kieffer (*Aulax glechomae* Hartig)

A globular swelling of pinkish tint with pale hairs, often found on this plant. Most noticeable on the chalk hills.

Centaurea scabiosa L. Greater Knapweed

Isocolus (Aulax) scabiosae Giraud

A large stem swelling with many cells. Pegsdon and Barton.

Rosa spp. Wild Rose

Rhodites spinosissimae Giraud

A small globular gall on the leaf or stem of the Burnet Rose (*Rosa spinosissima* L.) very prevalent where this rose is found.

Rhodites eglanteriae Hartig

'Smooth Pea Gall'. Common on wild roses throughout the county.

Rhodites nervosus Curtis (*rosarum* Giraud)

'Spiked Pea Gall'. Generally fairly common, but varies much in abundance in different seasons.

Rhodites rosae L.

'Bedeguar Gall' or 'Robin's Pincushion'. The commonest rose gall, and one of the most conspicuous and best known of all galls.

Potentilla reptans L. Creeping Cinquefoil

Xestophanes potentillae Retz.

A swollen stem gall. Found at Barton in 1930, and some insects hatched from the galls.

Quercus robur L. Common Oak

Andricus curvator Hartig s.g. (sexual generation)

'Curved Twig Gall'. Common and frequently very abundant on young trees, and on the smaller twigs springing from the trunk of older trees. The alternate generation is the minute and obscure 'Collared Bud Gall' (form *collaria* Hartig) which has not yet been found in the county.

Andricus inflator Hartig s.g.

'Swollen Twig Gall'. Very local, but often abundant where it occurs. Recorded from Streatley, Flitwick and Woburn district.

Andricus inflator Hartig, form *globuli* Hartig a.g. (agamic generation)

'Globular Bud Gall'. Found on Flitwick Moor; but it is an inconspicuous gall that needs searching for, and its distribution is presumably similar to that of its sexual generation above.

Andricus nudus Adler s.g.

'Bald Seed Gall'. Clusters of small pointed galls on male catkins. Flitwick, Woburn, Studham. Probably common.

Andricus fecundator Hartig a.g.

'Artichoke Gall'. Common on bushes and young trees in many places. Particularly abundant on Flitwick Moor. The alternate sexual generation (form *pilosus* Adler) causes a minute gall on the male catkins, which has not yet been found.

Andricus ostreus Giraud a.g.

'Oyster Leaf Gall'. A small gall on the underside of the leaf ribs. Flitwick, Woburn; probably common.

Andricus quadrilineatus Hartig a.g.

'Furrowed Catkin Gall'. Common on male catkins in many localities.

Andricus ramuli L. s.g.

'Woolly Oak Gall'. Rather local, but often abundant on certain trees, and very conspicuous. The alternate agamic generation (form *autumnalis* Hartig) causes the minute and obscure 'Autumn Bud Gall' which has not yet been found.

Biorrhiza pallida Olivier s.g.

'Oak Apple'. One of the best known galls and very common everywhere. The alternate agamic generation (form *aptera* Fab.) causes the 'Oak Root Gall' on subterranean roots. This gall must be equally common, but I have no record of its observation, and the opportunities for seeing it are rare.

Neuroterus albipes Schenck, form *laeviusculus* Schenck a.g.

'Smooth Spangle Gall'. Common, but never found in such great profusion as some of the other 'spangles'. The alternate sexual generation forms a minute gall on the midrib, which distorts the leaf.

Neuroterus quercus-baccarum L. s.g.

'Red Currant Gall'. Usually on catkins, but occasionally on leaves. Very common.

Neuroterus quercus-baccarum L., form *lenticularis* Olivier a.g.

'Common Spangle Gall'. The commonest leaf gall, to be found on almost every oak tree.

Neuroterus vesicator, Schlechtendal, form *fumipennis* Hartig a.g.

'Silk-Button Spangle Gall'. Common, and sometimes found in enormous numbers on certain trees. The alternate sexual generation causes the 'Leaf-blister Gall', of which I have no record, though it is probably common.

Cynips (Dryophanta) agama Hartig a.g.

'Yellow Pea Gall.' Quite a common gall on the undersides of leaves. Very prevalent on the scrub oaks of Flitwick Moor.

Cynips (Dryophanta) divisa Hartig, form *verrucosa* Schlechtendal s.g.

'Red Pea Gall'. A leaf gall, found on the underside of the mid-rib and its offshoots. Occurs on Flitwick Moor, but not commonly.

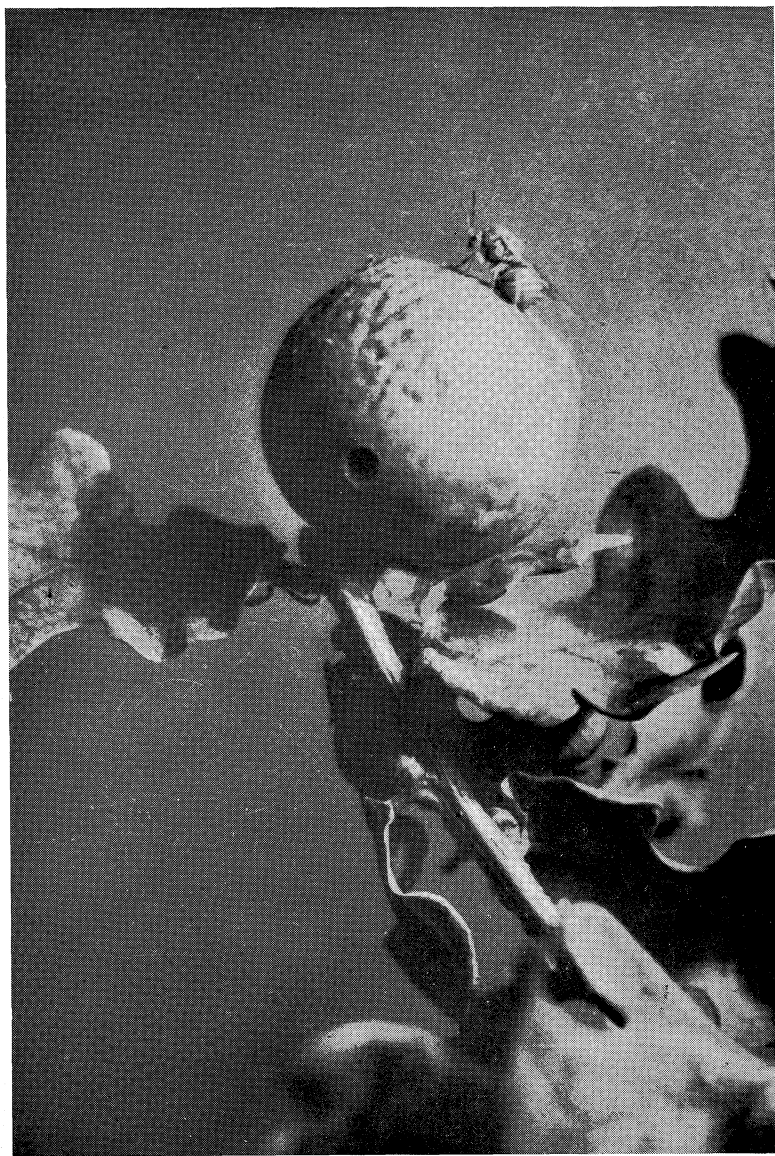
Dryophanta longiventris Hartig a.g.

'Striped Pea Gall'. A rather uncommon gall, of striking appearance. Found once or twice on Flitwick Moor.

Adleria kollari Hartig

'Oak Marble Gall (see Plate 1). The commonest oak gall, and together with the 'Oak Apple' probably the best known. Excessively abundant on many young trees.

PLATE 1



OAK MARBLE GALL AND THE GALL WASP, *Adleria kollari*
WHICH HAS RECENTLY EMERGED THEREFROM (see p. 20)
(*Photograph by Ray Palmer*)

TENTHREDINIDAE (Sawflies)

BY V. H. CHAMBERS

SUB-FAMILY BLENNOCAMPINAE

Rosa spp.

Native and garden roses

Blennocampa pusilla Klug

The larva of this sawfly feeds within the rolled leaf-margins: all the leaves on a bush may become twisted into rolls. A widely distributed species, especially abundant throughout the spring and summer of 1951.

SUB-FAMILY NEMATINAE

This sub-family includes the true gall-makers among the sawflies and are found upon various species of willow. In the genus *Pontania* the female makes a small slit in the blade of the leaf and inserts an egg. The adjacent leaf tissues grow in an abnormal fashion and surround the egg to form a swelling which is characteristic and diagnostic - when the host species of willow is known - for each species. The larva feeds upon the gall material, which is reduced to an empty shell by the time it is fully fed, leaves the gall and spins a brown cocoon in a crevice on the willow trunk or in the ground. In some species there are several generations in a year and reproduction may be entirely parthenogenetic, the males being very rare. In other species of *Pontania* the incision and insertion of the egg causes the margin of the leaf to fold over into a roll within the shelter of which the larva feeds at either end. Sawflies of the genus *Euura* lay an egg in the stems, leaf-petioles or unopened buds of some species of willow, the larva eats out the contents and leaves by a small hole.

Salix caprea L., *S. atrocinerea* Brot.

Goat willow, sallow

Pontania leucosticta Hartig

The rolled leaf margins of these willows are very abundant, being found throughout the summer in all parts of the county.

Pontania leucaspis Tischbein

This species is also a leaf-roller but I have not found the rolls. Adult sawflies have been taken at Wymington Scrubs, Souldrop; Flitwick Moor; King's Wood, Heath and Reach and Dedmansey Wood. It is obviously much less abundant than the previous species.

Pontania bridgmanii Cameron

Forms hairy bean-shaped galls occupying both sides of the leaf, usually near the midrib, and is abundant having been noted at Deadmansey Wood; King's Wood and Radwell Causeway.

Euura saliceti Fallén

The bud-galls formed by this species have been found on sallows at Deadmansey Wood, King's Wood and Flitwick Moor.

Salix viminalis L.

Common osier

Pontania piliserra Thoms.

Adults of this rare species have been bred; the larvae were once found in rolled leaf-margins at Heath and Reach, August 1946.

Salix purpurea L.

Purple osier

As this willow is of rare occurrence, being seldom planted in Bedfordshire, opportunities of finding the galls are few.

Pontania viminalis L.

Pea-shaped galls, from which adults were bred, which are found only on the underside of the leaves, have been taken at Radwell and Billington.

Pontania purpureae Cameron

I have not found the rolled leaf-margin galls of this sawfly, but a single female was taken at Radwell, on its host-plant, on 28th June 1947.

Salix fragilis L.

Crack willow

Pontania proxima Lep.

The red or red-and-green bean-shaped galls, occupying both sides of the leaf, are a familiar sight on almost every tree of this common willow.

Euura atra Jurine

I have not found the stem-galls of this sawfly but have often taken adults by sweeping grass below tall crack willows at Eaton Bray, Flitton and Flitwick Moors and Radwell.

Salix triandra L.

Bay willow

Pontania triandrae Bens.

Smooth, reddish bean-shaped galls, similar to those of *P. proxima* have been taken on the bay willow at Clophill and Radwell Causeway.

Salix alba L.

White willow

Red bean-galls are occasionally seen on this willow: they are due to *Pontania proxima*.

Bedfordshire Orthoptera

A preliminary account of the Cockroaches, Grasshoppers, Crickets and Earwigs of the County

BY RAY PALMER

Although from 1946 to 1950 my name appeared in this JOURNAL as Recorder for Orthoptera and Dermaptera, I have never produced any contribution on this group of insects, other than a short talk given at a meeting in Luton on 16th April 1947.

I was hoping to get the opportunity of making a more extensive study of the Bedfordshire Orthoptera, as I had done some years previously for the adjoining area of North Hertfordshire. (See *Journal of the Letchworth Naturalists' Society*, No. 4, 1944.) My removal to Cornwall, however, has prevented this, and I therefore thought it would be well to put on record such information as I possess, scanty though it may be.

It is convenient to include the Dermaptera, or Earwigs, though these are now treated as a separate Order.

The British list totals 49 species of Orthoptera and Dermaptera, including a number of foreigners which have become established here, or get frequently introduced with imported produce. I have records of 20 species for Bedfordshire. My thanks are due to R. B. Benson, B. R. Laurence and B. Verdcourt, some of whose records are included.

BLATTIDAE (Cockroaches)

Blatta orientalis L.

(Common Cockroach)

A common and undesirable inhabitant of bakeries, stores, and the kitchen premises of old houses. I have found it at Flitwick, and it is common enough in parts of Luton and Bedford, and doubtless elsewhere throughout the county.

PLATE 2

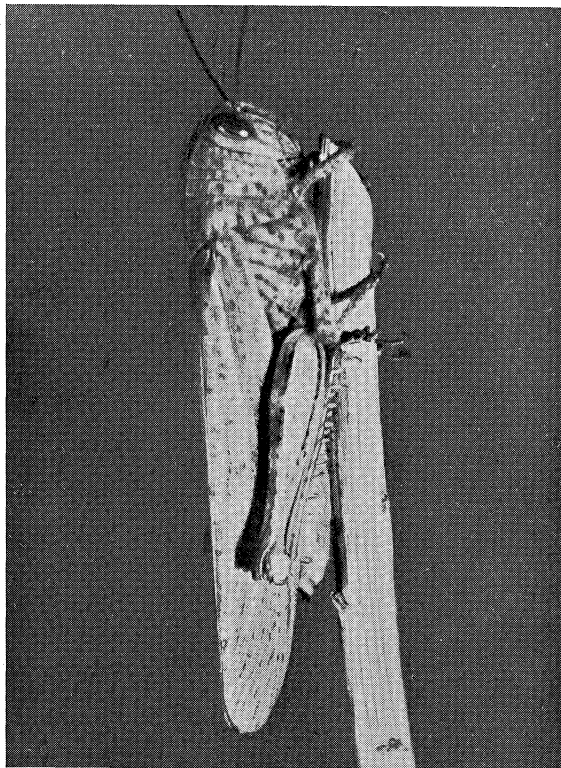


FIG. 1 MEDITERRANEAN LOCUST, *Anacridium aegyptum*
Caught at Arlesey, February 1952 (see p. 23)



Fig. 2 FEMALE WINGLESS BUSH-CRICKET
Leptophyes punctatissima,
at Flitwick (see p. 23)

(Photographs by Ray Palmer)

Periplaneta americana L.

(American or Cosmopolitan Cockroach)

This large brown cockroach, probably of South American origin, has been transported all over the world with shipping. It gets introduced freely into this country with imported produce, and is established at many docks and warehouses. It is of frequent occurrence at fruiterers' shops at Luton, Bedford and elsewhere.

Panchlora exoleta Klog.

(Green West Indian Cockroach)

For a cockroach this delicate green insect has quite an attractive appearance, and is usually noticed for this reason. It is generally found among bananas, and I have had a number of specimens brought to me from fruiterers' shops in the district.

TETRIGIDAE (Ground-Hoppers)

Tetrix subulata L.

Not uncommon in marshy areas. I have found it at Flitwick Moor, Bakers Wood, Heath and Reach, and the wet parts of Wavendon Heath. Verdcourt records it from Fancott, Brammingham and Leighton Buzzard.

Tetrix vittata Zett.

Found mainly on dry ground. Common at Aspley Guise, Woburn, King's Wood, Heath and Reach, Rushmere Heath, Sandy and Potton.

ACRIDIDAE (Short-horn Grasshoppers)

Stenobothrus lineatus Panz.

A scarce and local species. I have specimens from the Downs near Whipsnade and Verdcourt records it from 'chalk hills near Luton'.

Omocestes viridulus L.

The commonest small green grasshopper. Abundant on chalk downs, grassy hillsides and fields.

Omocestes ventralis Zett.

A dark brown insect, with green elytra in the female. I have not taken it in the county, but Verdcourt records it from 'near Luton'.

Myrmeleotettix maculatus Thunberg

A little mottled brown grasshopper with clubbed antennae. It is found mainly on sandy soil and other open dry areas. Benson records it from King's Wood, Heath and Reach, and I have found it at Woburn, Aspley Guise, Leighton Buzzard, Flitwick, Amphill, and in the Sandy and Potton area.

Chorthippus bicolor Charp.

A very variable species, though of a general brownish coloration. A most active insect, which flies readily when disturbed. By far the commonest grasshopper on agricultural land, and also abundant on heaths and downland.

Chorthippus parallelus Zett.

A green flightless insect with abbreviated wings. Very common on grassland.

Anacridium aegyptum L.

(Mediterranean Locust) (Plate 2, Fig. 1)

This large locust occasionally gets introduced with produce from south-east Europe and North Africa. I have a specimen that was found in a house at Church Lane, Arlesey, in February 1952, probably having arrived with imported fruit.

TETTIGONIIDAE (Bush Crickets)

Leptophyes punctatissima Bosc

(Wingless Bush Cricket) (Plate 2, Fig. 2)

A bright green insect found on various trees and shrubs, and most often on privet hedges. Cranfield, 1937 (J. M. Brown); common at King's Wood, Heath and Reach, July 1944 (R. B. Benson); King's Wood 1947, Washers Wood 1948 (B. Verdcourt). I have found it on privet hedges, both at Flitwick and Aspley Guise.

Meconema thalassina De Geer

(Tree Cricket)

A delicate pale green insect, with very long legs and antennae, found in large trees—particularly oaks—in the autumn. King's Wood, Heath and Reach; Leete Wood, Barton; Long Wood, Studham; Kidney Wood, Folly Wood, Caddington (B. Verdcourt).

I have found it several times at Flitwick and Aspley Guise.

Pholidoptera griseoptera De Geer

(Bush Cheep)

The commonest species of this family. This is the insect that may be heard chirping along almost any hedgerow in late summer and autumn, as it lives among dense thorns and brambles.

Metrioptera brachyptera L.

(Brown Bog Cricket)

A local species frequenting boggy heath land. I have not taken it in the county. Verdcourt records it from Aspley Heath, October 1944.

Conocephalus dorsalis Lat.

(Green Bog Cricket)

A delicate green insect found in swamps and bogs. I have found it fairly abundant on parts of Flitwick Moor, and Verdcourt records it from Dyers Hall swamp, Harlington.

GRYLLIDAE (True Crickets)

Gryllus domesticus L.

(House Cricket)

This is a not uncommon inmate of many old houses, stores and bakeries, where warmth and food are available. It also occasionally gets temporarily established in the open in rubbish dumps where there is warmth generated by decaying matter. Verdcourt records it from dumps at Luton and Fancott, and I have heard it in the open at Flitwick on summer nights in hot weather.

DERMAPTERA (Earwigs)

Labia minor L.

(Little Earwig)

I have taken this at Flitwick on several occasions, both on the wing and in the house, and Laurence has recorded it at Luton. It is probably common, though often overlooked, due to its small size and different habits. It flies freely in hot sunshine, and in habits and appearance much resembles a small Staphylinid beetle.

Forficula auricularia L.

(Common Earwig)

Abundant everywhere and only too familiar as a garden pest. The macro-labious form of the male is fairly common; this is a much larger and stronger insect, with greatly enlarged forceps.

The Fungus Flora of a Bedfordshire Sand Pit

By D. A. REID

It is perhaps understandable that mycologists, whose primary interests lie with the Agarics and Discomycetes, should concentrate their forays in well-wooded areas and to a lesser extent in grassland. In such localities, especially the former, toadstools are to be found in great abundance. Sandy localities however have rather a poor fungus flora, although coastal sand dunes yield some very interesting species. As a result, dry sandy heaths and disused sand pits tend to be neglected. It is therefore rather surprising to find such a comparatively rich and varied fungus flora in a disused sand pit on the outskirts of Leighton Buzzard. This pit, that has not been worked for about twenty years, is approximately 225 ft by 60 ft by 60 ft and somewhat Y-shaped. It is

filled with water to a depth of 30 ft. The sandy banks rise quite steeply to a narrow path and then to ground level. In one place, however, there is a small flat plateau, a few feet above the level of the path.

The pit is rather sheltered and has a considerable growth of willows (*Salix* spp.), consisting of *Salix viminalis* L., *S. atrocinerea* Brot., and *S. caprea* L., together with the hybrid *S. atrocinerea* x *S. viminalis* and a single large tree of *S. alba* L. In the wetter parts *S. viminalis* is dominant, whilst *S. atrocinerea* prefers the drier regions. Where the sand gives way to a true soil there is a tangled mixture of elder (*Sambucus*), hawthorn (*Crataegus*), rose (*Rosa*) and bramble (*Rubus*). The sandy banks bear a scanty growth of various grasses, while the dominant vegetation of the plateau consists of an extensive growth of *Polytrichum juniperinum* Willd., and *Cladonia sylvatica* Hoffm.

Weekly visits were made throughout the year (1951). A total of forty-one species of fungi were found. Of these two were new to the British list (Pearson & Dennis, 1948) — *Tricholoma cingulatum* (Fr.) Lange and *Flammula agardhii* (Lund) Fr., whilst a third species, *Cortinarius urbicus* Fr., had previously been recorded on only one occasion and that record was rejected by Pearson & Dennis pending confirmatory collections. The species found are listed below.

BASIDIOMYCETES

AGARICALES: AGARICACEAE

Lepiota amianthina (Scop.) Fr.; *Tricholoma cingulatum* (Fr.) Lange; *T. nudum* Fr.; *Clitocybe cerussata* Fr.; *C. vibecina* Fr.; *Mycena alcalina* Fr.; *M. avenacea* Fr.; *M. cinerella* Karst.; *M. epipterygia* (Scop.) Fr.; *M. filopes* (Bull.) Fr.; *M. flavo-alba* Fr.; *M. galopus* Fr.; *Omphalia fibula* (Bull.) Fr.; *Hygrophorus niveus* (Scop.) Fr.; *Lactarius torminosus* Fr.; *Russula fallax* (Fr.) Cooke; *Entoloma sericeum* (Bull.) Fr.; *Eccilia griseo-rubella* (Lasch) Fr.; *Pholiota praecox* (Pers.) Fr.; *Hebeloma crustuliniforme* (Bull.) Fr.; *H. mesophaeum* (Pers.) Fr.; *Flammula agardhii* (Lund) Fr.; *Tubaria furfuracea* (Pers.) Gillet; *Galera hypnorum* (Batsch) Fr.; *Crepidotus variabilis* (Pers.) Fr.; *Cortinarius hemitrichus* (Pers.) Fr.; *C. urbicus* Fr.; *Inocybe asterospora* Qué!.; *I. lacera* Fr.; *Paxillus involutus* (Batsch) Fr.; *Psilocybe bullacea* (Bull.) Fr.

AGARICALES: POLYPORACEAE

Trametes confragosa (Bolt.) Jörstad.; *Merulius corium* (Pers.) Fr.

AGARICALES: THELEPHORACEAE

Corticium sambuci (Pers.) Fr.

LYCOPERDALES

Lycoperdon depressum Bon.; *L. perlatum* Pers.

SCLERODERMATALES

Sphaerobolus stellatus (Tode) Pers.

TREMELLALES: AURICULARIACEAE

Auricularia auricula-judae Schröt.

ASCOMYCETES

PEZIZALES

Peziza rutilans Fr.; *Humaria humosa* (Fr.) Sacc.

FUNGI IMPERFECTI

MONILIALES

Cylindrocolla urticae (Pers. ex Fr.) Bon.

These fungi can be referred to one of two groups according to their ecological preferences, i.e., those species growing in the open amongst moss, short grass or bare sand and those species growing in shade on or under trees and shrubs. This latter group may be subdivided according to whether or not the species show a constant association with any particular tree or shrub.

The species growing in open situations occurred chiefly on the plateau. They were as follows:—

Lepiota amianthina, *Clitocybe vibecina*, *Mycena avenacea*, *M. cinerella*, *M. epipterygia*, *M. flavo-alba*, *Omphalia fibula*, *Hygrophorus niveus*, *Entoloma sericeum*, *Eccilia griseo-rubella*, *Galera hypnorum*, *Pholiota praecox*, *Inocybe asterospora*, *I. lacera*, *Psilocybe bullacea*, *Lycoperdon depressum*, *Peziza rutilans*, *Humaria humosa*.

The most interesting of these fungi are the two Discomycetes. *Peziza rutilans* produces small, orange, stipitate apothecia, 1–2 cm in diameter, which are paler and somewhat furfuraceous on the outer side. *Humaria humosa* is very similar, but whereas the former species has spores 22–25 by 12–14 μ with a distinct reticulate ornamentation, the spores of this species, although of similar size, are quite smooth. Both species appear late in the year and are to be found growing amongst *Polytrichum*. The tiny agarics *Psilocybe bullacea* and *Mycena cinerella* are also rather uncommon, although the latter is often overlooked on account of its size.

Of the fungi growing on or under trees and shrubs, the following showed no constant association with any one species:—

Tricholoma nudum, *Clitocybe cerussata*, *Mycena alcalina*, *M. filipes*, *M. galopus*, *Tubaria furfuracea*, *Crepidotus variabilis*, *Merulius corium*, *Corticium sambuci*, *Lycoperdon perlatum*, *Sphaerobolus stellatus*, *Cylindrocolla urticae*.

The last and ecologically the most interesting group consists of those fungi showing constant association with specific trees and shrubs. These are listed below:—

(a) Associated with Birch (*Betula*)

Cortinarius hemitrichus, *Lactarius torminosus*, *Paxillus involutus*.

It is surprising to find these typically birchwood species in such a locality where there is but one large birch and a young tree only 8 ft high. The above species were all associated with this young tree.

(b) Associated with Elder (*Sambucus*)

Auricularia auricula-judae.

(c) Associated with Willow (*Salix*)

Tricholoma cingulatum, *Russula fallax*, *Flammula agardhii*, *Cortinarius urbicus*, *Hebeloma crustuliniforme*, *H. mesophaeum*, *Trametes confragosa*.

Russula fallax showed certain peculiar features, e.g. it appeared late in the year and always in a tufted condition that is very unusual for this genus. *Auricularia auricula-judae* and *Trametes confragosa* are both saprophytes, growing on dead host tissue.

The remaining species are terrestrial agarics and the nature of the association is in this case less clear, although a mycorrhizal relationship may be suspected in some instances. As previously stated both *Tricholoma cingulatum* and *Flammula agardhii* are new to the British list, whilst *Cortinarius* was excluded on the grounds that the previous report of its occurrence on the Woolthorpe Club foray to Cabalva (October 1879) required confirmation. All three species were present in great abundance and have appeared regularly each year since their discovery. The *Tricholoma* and *Flammula* were both confined to the vicinity of small bushes of *S. atrocinerea*, whilst the *Cortinarius*, although found under this tree, also occurred abundantly under *S. viminalis*.

Tricholoma cingulatum belongs to the *Myomyces* section of the genus. It is rather a small species, the cap being only 4–6 cm. in diameter. The pileus which is pale grey has a distinctly felty appearance, due to the presence of more or less adpressed fibrils. The gills are whitish, but often turn a bright yellow in places when the fungus is old and beginning to decay. The slender whitish stem is beset with a narrow cottony ring toward the apex. The spores are $4\text{--}5 \times 2.5\mu$.

Flammula agardhii is recognised by its pale cinnamon colour that becomes darker with age and the strongly fibrillose surface of the cap. As the fungus expands it frequently becomes funnel-shaped, while the surface may break up into small irregular areolae. The fungus varies considerably in size and is often rather robust reaching 6 cm. in diameter. The stipe is concolorous with the cap, decidedly fibrillose and bears a distinct cortina. The gills which are at first pallid clay colour become darker brown and develop an olivaceous tinge. The gill edge is beset with large globose or oval cheilocystidia. The spores are $9\text{--}10 \times 4\text{--}5\mu$.

Cortinarius urbicus has a convex cap, 3–6 cm. in diameter, which is whitish clay colour, bearing toward the margin the remains of the silky-arachnoid veil. The stem is $4\text{--}5 \times 1$ cm., whitish and bears a ragged inferior ring and above this a zone of rusty fibrils. The gills are rusty with a purplish tinge and bear spores that are minutely punctate, $7.5\text{--}9 \times 4\text{--}5\mu$.

The apparent restriction of these fungi to a few, among many, bushes of the willow suggests that factors other than the presence of the tree itself are limiting their distribution. Differences in soil aeration and temperature may be involved, but speculation regarding their effect is futile in the absence of experimental data. Some clues may be afforded if comparable observations can be made in similar localities elsewhere.

Ecological Survey of Hardwick Spinney, 1953

Hardwick Spinney is a small woodland of about $1\frac{1}{2}$ acres in the extreme north of Stagsden parish, and appears on sheet 42/95 of the 1:25,000 O.S., reference 979509. It is situated on an exposed plateau at approximately 275 feet above sea-level and commands extensive views over the upper Ouse valley. Its appearance on the 1834 edition of the 1-inch O.S. shows it to be at least 120 years old, but the size of the trees and the evidence of the soil section, suggest that it cannot have been planted much earlier.

Through the kindness of one of our members, Mr D. W. Elliot of Burdelys Manor, Stagsden, on whose farm the spinney stands, we were able to carry out a fairly thorough ecological survey during the 1953 season with results that are here summarised.

For ornithological and entomological purposes the spinney is too small to be treated otherwise than as a unit, but for convenience of botanical survey it was divided into smaller sections. The spinney is roughly rectangular in plan, and is conveniently divided by a main path running parallel to the longer sides. Initially it was allotted to six groups surveying roughly equal areas, but one or two parties failed to materialise and consequently some plots were examined in much greater detail than others. However, no part of the spinney escaped frequent attention, and it is thought unlikely that there are any significant omissions due to this uneven treatment.

SOIL SECTION

A soil section was taken at the north-eastern end of the spinney. Boulder Clay was reached at a depth of 7 inches from the surface, and was overlain by about 6 inches of slightly acid humus. This was found to be less acid than in other woods tested, and tends to confirm the more recent formation of this particular woodland. The permeability of the soil to moisture was found to be intermediate between that of fine river sand and Oxford Clay, and was above average in its percolating quality.

BOTANY

Botanically, the spinney falls into Dr Dony's region E, the Southern Oxford Clay (see *Flora of Bedfordshire* page 72 and map, page 50) and can naturally be compared with a number of other woods. Within a radius of one mile there are four older and larger ones (Salem Thrift, White's Wood, How Wood and Pictshill Gorse) which, although awaiting more detailed study, are sufficiently well botanized to enable certain comparisons to be drawn, and to demonstrate that a number of species has yet to become established at Hardwick. (See below)

The trees number about 30 and are mostly Oak (*Quercus robur*) and Ash (*Fraxinus excelsior*). There are a few maples (*Acer campestre*) and Crab Apple (*Malus sylvestris*).

The shrubs are:

Cornus sanguinea (Cornel), *Corylus avellana* (Hazel), *Crataegus oxyacanthoides* (Midland Hawthorn), *Euonymus europæus* (Spindle Tree), *Ligustrum vulgare* (Privet), *Prunus spinosa* (Blackthorn), *Rosa canina* (Dog Rose) and *Viburnum lantana* (Wayfaring Tree).

Other plants are as follows:

Dominant: *Endymion non-scriptum* (Bluebell), *Mercurialis perennis* (Dog's Mercury).

Abundant: *Ajuga reptans* (Bugle), *Arum maculatum* (Spotted Arum), *Glechoma hederacea* (Ground Ivy), *Galium aparine* (Goosegrass), *Primula vulgaris* (Primrose).

Locally abundant: *Hedera helix* (Ivy).

Frequent: *Anemone nemorosa* (Wood Anemone), *Cerastium vulgatum* (Mouse-ear Chickweed), *Dactylis glomerata* (Cock's-foot Grass), *Geranium robertianum* (Herb Robert), *Geum urbanum* (Herb Bennet), *Orchis fuchsii* (Spotted Orchid), *Ranunculus auricomus* (Goldilocks), *Ranunculus ficaria* (Lesser Celandine), *Rumex sanguineus* (Wood Dock), *Sanicula europæa* (Sanicle), *Stachys sylvatica* (Hedge Woundwort), *Stellaria holostea* (Stitchwort), *Tamus communis* (Black Bryony), *Taraxacum officinale* (Dandelion), *Urtica dioica* (Stinging Nettle), *Viola reichenbachiana* (Pale Wood Violet).

Local: *Daphne laureola* (Spurge Laurel), *Viola odorata* (Sweet Violet).

Marginal: *Dipsacus sylvestris* (Teazle), *Rosa arvensis* (Field Rose), *Rubus sp.* (Bramble).

Occasional: *Alliaria petiolata* (Garlic Mustard), *Bellis perennis* (Daisy), *Bryonia dioica* (White Bryony), *Capsella bursa-pastoris* (Shepherd's Purse), *Cnicus lanceolatus* (Spear Thistle), *Convolvulus arvensis* (Bindweed), *Heracleum sphondylium* (Hogweed), *Lithospermum officinale* (Common Gromwell), *Lonicera periclymenum* (Honeysuckle), *Primula veris* (Cowslip), *Prunella vulgaris* (Self-heal), *Ranunculus bulbosus* (Bulbous Buttercup), *Solanum dulcamara* (Bittersweet), *Veronica chamaedrys* (Germander Speedwell), *Vicia sepium* (Bush Vetch).

Rare: *Orchis mascula* (1) (Early Purple Orchid).

The following is a list of species which are present in neighbouring woodlands, but which are apparently absent from Hardwick:—

Carex pendula (Pendulous Sedge), *Carex remota* (Distant Sedge), *Circæa lutetiana* (Enchanter's Nightshade), *Cirsium palustre* (Marsh Thistle), *Epilobium* spp. (Willow Herbs), *Fragaria vesca* (Wild Strawberry), *Galeobdolon luteum* (Yellow Dead-nettle), *Hypericum* spp. (St John's Worts), *Listera ovata* (Twayblade), *Lychnis flos-cuculi* (Ragged Robin), *Myosotis arvensis* (Forget-me-not), *Paris quadrifolia* (Herb Paris), *Platanthera chlorantha* (Greater Butterfly Orchid), *Potentilla sterilis* (Barren Strawberry), *Salix caprea* (Sallow).

A. W. GUPPY

BIRDS

During the early part of the year all the nest boxes in the spinney were cleaned and renovated for the breeding season and a number of new boxes erected. Seed was placed on the bird table and strings of fat put up for the finches and tits respectively. That these preparations were worth while became evident when nesting commenced. Apart from the birds which stayed to nest other species noted during the spring included Cuckoo, Redstart, Garden Warbler and Whitethroat, whilst on the afternoon of the inaugural meeting a considerable passage of Meadow Pipits took place over and around the spinney.

Nests of the following species were found in the spinney and it will be noted that many came to an untimely end through the activities of vermin.

Pheasant	A nest with eight eggs deserted after hen bird disturbed by a dog.
Wood Pigeon	Several nests in the ivy covered trees.
Little Owl	Nested in a rabbit burrow, the first record for several years.
Carriion Crow	Nest started but not completed.
Jackdaw.	At least four pairs present.
Great Tit	Six pairs bred, one deserted.
Blue Tit	One nest only. Fifteen young reared.
Marsh Tit	Probably bred as four young seen with parent birds.
Wren	One pair in a nest box reared at least seven young.
Song Thrush	In the one nest found five young successfully reared.
Blackbird	The earliest nesting bird. At least five pairs present and about fifteen nests found though many of these were robbed.
Nightingale	One pair reared five young.
Robin	Probably three pairs present although only one nest found and that deserted.
Blackcap	Two pairs nested but one robbed by vermin.
Willow Warbler	Only one nest found, probably successful.
Chiffchaff	A single pair present. Their first nest robbed but in the second attempt five young reared.
Hedge Sparrow	One nest found robbed by vermin.
Starling	At least one successful nest.
Chaffinch	Three nests found but all robbed and deserted.
Tree Sparrow	One pair nested in a box but young died when quite small.

Of these breeding records those of the tits are the more noteworthy. In previous years when little or no feeding has been done the usual numbers have been three pairs of Blue Tits and two of Great Tits. It seems possible that having been attracted by food to the spinney during the earlier months of the year the larger Great Tits ousted the smaller species. Certainly lack of nesting sites was not a contributory factor. The probable nesting of the Marsh Tit was the first evidence of breeding since 1946.

Several other species were present during the breeding season for which no proof of nesting was obtained. These included Turtle Dove, Tawny Owl, Green Woodpecker, Bullfinch, Yellowhammer and Longtailed Tit; most of these have nested here in the past.

During the autumn and winter months Mistle Thrush, Redwing and Fieldfare were regular visitors; also many Pigeons feeding on the good supply of ivy berries. The mild spell in December has certainly led to fewer birds being seen in the spinney owing to the abundance of food on the neighbouring farmland, where Lapwings and passing Gulls have been seen.

F. C. GRIBBLE AND A. J. DYMOND

MAMMALS AND AMPHIBIA

Although a little work was done on this group of animals during the year a number of species were recorded. Rabbits are well established residents and the Longtailed Field Mouse and Hedgehog were seen by several members. Adult Hares were found sheltering in the spinney during snowy periods in the winter months and a Leveret was

found taking cover under a wood pile during May. Grey Squirrels were very much in evidence and, though a number were shot, these were quickly replaced by newcomers from neighbouring woods. They were certainly responsible for robbing several birds' nests though in the case of the Blackcap's nest the culprit was more probably a Weasel. The only Amphibia noted during the year were one or two Toads.

F. C. GRIBBLE AND A. J. DYMOND

LEPIDOPTERA

The oaks in the spinney where they overhang the field on the east side form a perfect habitat for the Purple Hairstreak (*Thecla quercus*). This very beautiful insect has been seen on several occasions here.

In the wood the commonest species is the Speckled Wood (*Pararge aegeria*). It is possible at times to find the Meadow Brown (*Maniola jurtina*) in the central ride, although this is not wide.

The moths have only been partially worked. On the Moth Sugaring night (see p. 7) of 8th August 1953, the most interesting specimen taken was the Copper Underwing (*Amphipyra pyramidea*). Along the west side of the wood is a fine colony of Yellow and Brown Tails (*Euproctis chrysorrhoea* and *E. phaeorrhoea*), which are very frequent in their larval stage on the Blackthorn and Blackberry bushes.

The commonest of the Geometrid moths, and one of the loveliest, is the Scalloped Oak (*Crocallis elinguaris*): the larvae are often to be found on the oaks in the central ride.

Other species include:

Large Yellow Underwing (*Triphaena promuba*), Lesser Yellow Underwing (*Triphaena comes*), Square Spot (*Ectropis consonaria*), Common Footman (*Eilema lurideola*), Maggie (*Abraxas grossulariata*), Beautiful Carpet (*Mesoleuca aebicileata*) and Blood Vein (*Calothysanis amata*).

B. B. WEST

Reports of Recorders

FLOWERING PLANTS

The publication of the *Flora of Bedfordshire* meant that my own time spent in the field was brief. Most of the additions made during the year were incorporated in the *Flora*. The mild autumn produced a crop of aliens. I hope to include these in a longer report in a future issue of the JOURNAL.

J. G. DONY

FUNGI

Owing to the lack of autumn frosts, the past season proved to be an exceptionally good one for the collection of fungi and it extended until mid-December.

There were few records of rare species apart from those already mentioned in the account of the annual fungus foray (see p. 8). However the following are new records for the county or else confirm existing but very ancient ones:—

<i>Diatrype disciformis</i> (Hoffm. ex Fr.) Fr.	Woburn Sands
<i>Peniophora gigantea</i> (Fr.) Masee	Woburn Sands
<i>Stereum sanguinolentum</i> (A. & S.) Fr.	Woburn Sands, on pine logs
<i>Galera mniophila</i> (Lasch) Fr.	Heath and Reach
<i>Psilocybe spadicea</i> Fr.	Heath and Reach

D. A. REID

ODONATA

The year has passed without any addition to the county list. Many of our accepted species were observed in their usual habitats; some expanded, while others contracted, their range, but this is a normal yearly procedure and we have not suffered any loss. The filling-in and levelling-off of old gravel pits must destroy the breeding grounds of some species, but as these are all established in much more permanent quarters we have little to fear.

K. E. WEST

LEPIDOPTERA

On the chalk downs, especially at Pegsdon, the Chalk Hill Blue (*Lysandra coridon*) appeared in great numbers; it seems that this species is on the increase. The Adonis Blue (*L. bellargus*) still survives in the long valley behind Barton church; although the numbers seen in the middle nineteen-forties cannot be expected to be fully regained, it is to be hoped that there will be some addition to the small numbers of the last few years.

The season was remarkable for the continuation of open warm weather into the winter months. On 5th December Mr D. W. Elliot of Burdelys Manor, Stagsden, reported the Small White (*Pieris rapae*) still flying, trapped inside a window. On 26th December I saw a Small Tortoiseshell (*Aglais urticae*) sunning itself on a tree trunk at Woodcraft Wood, Stevington. There were numerous caterpillars of the Large White (*P. brassicae*) still to be found on cabbages during mid-December.

Dr D. M. Jeffreys and I have again reared the Purple Emperor (*Apatura iris*) in Bedford; the specimens came from Northamptonshire. I should be interested to know if any landowners in the north of the county with large oak woods on their property have any record of this insect. One might have expected to find it in Worleys Wood at Melchbourne were it not for the appalling treatment this locality has received; however other large woods, possibly Odell and Threshire, may harbour it. Summer searching for the full grown larvae might well settle this point.

During the coming season it is intended to obtain a Mercury Vapour lamp and by this and other means begin to evolve a picture of our contemporary moth population.

I still would be grateful for records and specimens and wish to thank those members of the Society and others who have already been good enough to bring me material for identification.

B. B. WEST

(Mr B. B. West has prepared a preliminary list of the moths occurring in the county. Unfortunately, owing to lack of space, it has not been found possible to print it in this issue of the JOURNAL - Editor.)

BIRDS

Due in no small measure to the increased activities of certain members, this report achieves new records both for the number of species (140) reported during the year and for the abundance of observations. These would have been further supplemented if the diary of one member had not been destroyed; others too were known to have omitted to record many of their observations. The results however are most encouraging and the keener interest in field-work now manifest is a good augury for the future.

I specially appeal to anyone observing outstanding occurrences (early date of arrival, late departures, rarities, unusual habits, etc.) to report them immediately. Arrangements can then be made for others to share and confirm the experience to mutual advantage. Observations on the more unusual species must give accurate details of habits and diagnostic characters observed in order to assist the recorder in assessing the value of the record. On behalf of the Society I thank all those whose co-operation is showing such excellent results.

As mentioned in previous reports certain areas continue to be noticeably neglected, due largely to lack of members in these districts. Among those that may be mentioned are the region north of Harrold; to the east of Sandy and

PLATE 3



FIG. 1 MANX SHEARWATER
Picked up on Warden Hills, Luton, 7th September 1953
(see p. 33)
(*Photograph by W. H. Cox, Luton*)



FIG. 2 MANX SHEARWATER
Picked up in a Goldington Road, Bedford, private garden
(see *Beds. Naturalist*, No. 5, p. 43)
(*Photograph by Henry A. S. Key*)

Biggleswade; and a section of country through Southill, Shefford and Silsoe to Toddington, together with wooded and heath areas beyond Woburn to Leighton Buzzard. Assistance will be given to anyone willing to give special attention to any of these areas and those interested should contact the ornithological secretary, Mr F. C. Gribble, immediately. Luton Hoo park and lake and the large flooded pit at Arlesey, both of which were formerly neglected but are now being carefully watched, are yielding valuable data. The same applies to Dunstable Sewage Farm. This locality is the most likely source of wader records now that the marshy fields at Bedford Sewage Farm are being drained. Many smaller rural sewage-disposal works would well repay visits and suggestions and help will be given to members willing to undertake such investigations. Permission to enter such properties must be obtained beforehand, preferably on official application by the Society.

The records for 1953 indicate an average season with regard to spring migration dates, distribution and numbers, but the weather of the autumn and early winter was so mild that there were several instances of late departures of summer migrants, notably Swallow and Whimbrel with a probable Nightjar. Several species also attempted to breed at this time (see p. 42).

Of the less usual occurrences the eruption of Crossbills was noteworthy and the conclusive evidence of the breeding of the Garganey was welcome. The regular annual appearance of a Bittern in the summer at Oakley is proving interesting and the frequency of Manx Shearwaters in recent years demands further investigation.

For the first time, in conformity with what is becoming general practice the order of the species in the report now follows the 'Whetmore' system of classification as set out in the new check list of the *Birds of Great Britain and Ireland*, prepared and published in 1952 by the British Ornithologists' Union. Unless specifically indicated, the status of all species reported was normal. In addition to those listed separately, the following were frequently reported: Mute Swan, Sparrow-Hawk, Kestrel, Partridge, Red-legged Partridge, Pheasant, Lapwing, Stock-Dove, Barn-Owl, Little Owl, Tawny Owl, Kingfisher, Green Woodpecker, Great Spotted Woodpecker, Skylark, Carrion-Crow, Rook, Jackdaw, Magpie, Jay, Great Titmouse, Blue Titmouse, Coal-Titmouse, Marsh-Titmouse, Long-tailed Titmouse, Tree-Creeper, Wren, Song-Thrush, Blackbird, Robin, Goldcrest, Hedge-Sparrow, Greenfinch, Linnet, Bullfinch, Chaffinch, Yellow Hammer, Reed-Bunting, House-Sparrow and Tree-Sparrow.

Abbreviations of observers' names: P.S.B. = P. S. Bates; B.S. = Bedford School Natural History Society; H.C. = Harry Cole; A.D. = Anthony Dymond; E.G.E. = E. G. Eeles; D.W.E. = D. W. Elliott; F.C.G. = F. C. Gribble; A.R.J. = A. R. Jenkins; C.S.P. = C. S. Payne; W.E.K.P. = W. E. K. Piercy; Rec. = Recorder; S.W.R. = S. W. Rodell; W.G.S. = W. G. Sharpe; F.G.R.S. = F. G. R. Soper; C.F.T. = C. F. Tebbutt; D. and R.W. = D. and R. White; M.D.W. = M. D. Wortley; and M.O. = more than four observers.

GREAT CRESTED GREBE (*Podiceps cristatus*)—Thirty-six adults counted at the time of the annual census from the following areas, in all of which breeding was recorded: Southill, Woburn lakes, Battlesden, Luton Hoo, Felmersham, Arlesey and Kempston Hardwick (W.E.K.P. and M.O.).

LITTLE GREBE (*Podiceps ruficollis*)—Reported in small numbers from most of the old gravel-pits and lakes during the breeding season. One nest with eggs also found at Bedford Sewage Farm. Small numbers seen on the main waterways during the winter months and autumn, the largest being twenty-three at Brogborough flooded clay-pit on 30th August (M.O.).

MANX SHEARWATER (*Procellaria puffinus*) (see Plate 3)—There was a 'wreck' of this species during the autumn and the following specimens were recovered: one picked up alive on the Warden Hills, 7th September, was fed by S. W. Rodell who sent it to the Recorder who released it at Walton-on-Naze, Essex, on the 13th; another was picked up dead in the same locality on the 9th; one was reported as swimming on a farmyard pond at Renhold on the 10th where it died on the 13th and the corpse was recovered on the 15th; another corpse was recovered on the filter beds at East Hyde early in October by a member of the staff (M.O.).

HERON (*Ardea cinerea*)—Forty-six nests recorded as follows: Bromham, 15; Southill lake, 18; Sandy Lodge, 10; Little Barford, 1; and Tempsford, 2 (W.E.K.P.). A number of birds reported shot in the Tempsford area and attempted destruction of the heronry at the hall, believed by someone with fishing interests. Most waterways and pools, including Luton Hoo Lake, visited during feeding (M.O.).

BITTERN (*Botaurus stellaris*)—Mr R. C. Fluck had the interesting experience while moving through reed-beds near Oakley staunch of coming face to face with a Bittern only about six feet away. Both the observer and the bird 'froze' for a few moments after which the bird took wing and flew across the river to the shelter of reed-beds on the Oakley House side. This was on 30th September. This Bittern was seen on subsequent days by other observers and on one occasion was seen to capture and eat an eel. This is the sixth year in succession that a bird of this species has been observed in this habitat during August or September. A Bittern (probably the same bird) was also seen during this period near Bromham Hall (Mr F. N. Moir). 1952 Record: Mr Benson of Bromham House, who first reported a Bittern at Oakley in 1948, informed the Recorder in the spring of 1953 that he had failed to report seeing one there at the usual season in 1952. (Another probable occurrence was reported from Bedford Sewage Farm in March (a Mr Collins via F.C.G.).)

MALLARD (*Anas platyrhynchos*)—Number at Bedford Sewage Farm below average for winter months, probably due to recent drainage of the water-meadows. Largest parties there did not exceed c. 80. Larger parties reported were: c. 100, Battlesden lake, 8th November; c. 300, Kempston Hardwick clay-pit pool, 24th December (M.O.).

TEAL (*Anas crecca*)—Smaller numbers than usual during the year at Bedford Sewage Farm, though parties of c. 150 were occasionally seen in the later months; c. 40, Luton Hoo lake, 17th January; parties of c. 50 fed regularly at night in cornfields near East Hyde during September and caused damage to nearby water-cress beds. No evidence of breeding in any area (M.O.).

GARGANEY (*Anas querquedula*)—Pair seen, Bedford Sewage Farm, from 11th April. Evidently bred as the adults were observed swimming with eight ducklings on 28th May (F.C.G. and B.S.). One, Luton Hoo lake, 28th July, and one, Dunstable Sewage Farm, 30th August (M.D.W. and H.C.).

GADWALL (*Anas strepera*)—One male, Battlesden lake, 8th November (E.G.E. and F.C.G.).

WIGEON (*Anas penelope*)—Small numbers reported during winter months from most usual haunts; largest party, c. 45, Bedford Sewage Farm, 15th December (M.O.).

SHOVELER (*Spatula clypeata*)—Single males as follows: Bedford Sewage Farm, 7th April; Felmersham gravel pits, 6th September; Battlesden lake, 8th-28th November; Bedford Sewage Farm, 31st December. Female: Bedford Sewage Farm, 25th March (E.G.E., F.C.G., B.S. and M.D.W.).

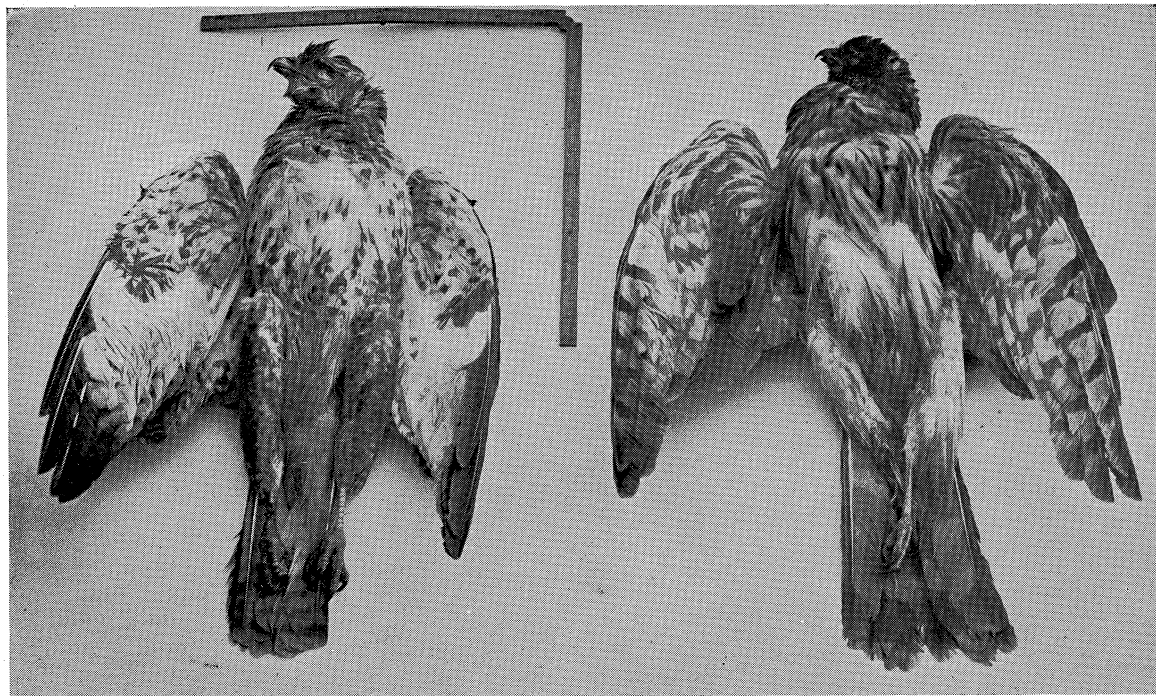
TUFTED DUCK (*Aythya fuligula*)—Two pairs, Felmersham pits and one pair, Luton Hoo lake, during breeding season but no evidence of breeding in either locality. At least one pair bred at Drakelow pond, Woburn. Parties of up to 10 birds seen in most usual haunts during winter (M.O.).

POCHARD (*Aythya ferina*)—Pairs seen at Luton Hoo lake and Drakelow pond, Woburn, in the summer. No proof of breeding at either station. Small numbers seen in most usual haunts in winter—largest party, c. 40, Battlesden lake, 8th November (M.O.).

GOLDENEYE (*Bucephala clangula*)—One male, Woburn lakes, during February (Duke of Bedford). One female, Luton Hoo lake, 14th February - 7th March; male on river Ivel near Blunham in mid-December (M.D.W. and A. Sharman of Great Barford).

GOOSANDER (*Mergus merganser*)—One female, seen at close range with binoculars, Arlesey clay-pit pool, 6th December (A.R.J.). (A bird of this species or a Red-breasted Merganser was reported seen by Sir Richard Wells at Felmersham pits, 17th January.)

PLATE 4



BUZZARD (*left*) AND HEN-HARRIER (*right*)
Trapped during December 1953 (*see p. 35*)
(*Photograph by Henry A. S. Key*)

SHELD-DUCK (*Tadorna tadorna*)—One, Pertenhall, in early December; two, Bedford Sewage Farm, 6th–11th December (Miss L. E. Modlen, B.S. and Mrs C. M. Lucas).

GEESE (*Anser* spp.)—Flight of grey geese reported over Bedford, 14th February; c. 50 flying eastwards over Stagsden, 8th March; and two flights in similar direction over Willington in mid-March (Mrs D. E. Metcalfe, D.W.E. and F. L. Godber).

PINK-FOOTED GOOSE (*Anser arvensis brachyrhynchus*)—Party of 38 at gravel pits near Barker's Lane entrance to Bedford Sewage Farm, 31st December (B.S.).

BARNACLE GOOSE (*Branta leucopsis*)—Two, Woburn lakes, in January—probably escapes (Duke of Bedford).

BUZZARD (*Buteo* sp.)—Two over Bedford, 14th May (A.D.).

BUZZARD (*Buteo buteo*) (see Plate 4)—One, Bull Wood, Luton Hoo, 22nd March (M.D.W.); one seen on several occasions on Woburn estate during the year (W.G.S.); one destroyed in vermin trap in wood on county boundary in December (D.W.E.).

HARRIER (*Circus* sp.)—A female Hen or Montagu's Harrier was seen flying low and being mobbed by rooks at Kensworth, 14th November (H.C.). The prominent white rump was noted which contrasted with the dark brown tail and upper parts; wide spread of wings which were beaten slowly. The late date indicates the probability of the bird being a Hen-Harrier.

HEN-HARRIER (*Circus cyaneus*) (see Plate 4)—Female, caught in vermin trap, baited on the ground, in the same wood and at the same time as Buzzard (see above) (D.W.E. and C.F.T.).

HOBBY (*Falco subbuteo*)—A watch was kept throughout the season in the old haunts but no bird was seen during the year.

[PEREGRINE-FALCON (*Falco peregrinus*)]—A falcon, from its size probably this species, seen flying over Stagsden, 3rd January (F.C.G.).

QUAIL (*Coturnix coturnix*)—A male heard calling in the evening at Stagsden, 11th August, had apparently been in the same locality for several weeks (Fred. Frossell and F.C.G.). There was no evidence of breeding when the corn was cut and the bird then disappeared. One flushed between Stagsden West End and Kempston in September by A. G. Oldfield.

WATER-RAIL (*Rallus aquaticus*)—One, Luton Hoo lake, 14th February (M.D.W.); one Bromham, first week October (F.G.R.S.).

CORN-CRAKE (*Crex crex*)—One flushed in observer's garden, Bromham Park, 12th October; excellent view obtained (F.G.R.S.).

MOORHEN (*Gallinula chloropus*)—Bird seen taking fish at Crawley Mill pool, 30th August; the prey, probably a Silver Bream and about six inches long, was dragged into a bed of persicaria where the bird repeatedly struck it and partially consumed it (E.G.E. and F.C.G.). More than 200 at Bedford Sewage Farm during winter months (M.O.).

COOT (*Fulica atra*)—Usual number during the breeding season in old haunts with normal increase in numbers during winter. Largest party, c. 60, Southill lake, 12th January (M.O.).

OYSTER-CATCHER (*Haematopus ostralegus*)—One flying over Bedford, 8th January (B.S.).

RINGED PLOVER (*Charadrius hiaticula*)—One, Bedford Sewage Farm, 10th May (F.C.G. and B.S.); one, Arlesey pool, 6th September (A.R.J.).

LITTLE RINGED PLOVER (*Charadrius dubius*)—One, Bedford Sewage Farm, 10th May (F.C.G. and B.S.). Yellow orbital ring noted as well as yellow-green legs and absence of wing bar; typical call heard.

GOLDEN PLOVER (*Charadrius apricarius*)—Many parties of up to c. 100–150 birds reported from many areas, especially in the eastern part of the county, during winter (M.O.). First arrival seen over Dunstable Sewage Farm, 26th August (H.C.).

COMMON SNIBE (*Capella gallinago*)—Generally distributed in small numbers in all marshy areas and by streams and pools in winter months. The two most frequented places were Bedford and Dunstable Sewage Farms and the largest parties recorded at these places were c. 200, 11th December, and c. 60, 24th October, respectively (M.O.).

JACK SNIBE (*Lymnocyptes minimus*)—Bedford Sewage Farm still the main haunt in winter; at least 13 there, 25th January, and 7, 12th December. One on marshy meadows between Tempsford and Blunham, 10th November; one, Dunstable Sewage Farm, 26th December (M.O.).

WOODCOCK (*Scolopax rusticola*)—A few flushed from most wooded areas in winter months. Three 'roding' near Maulden wood, 24th April. Several nests recorded from Greensand area (M.O.).

CURLEW (*Numenius arquata*)—Two, Bedford Sewage Farm, and one, Dunstable Sewage Farm, 3rd May; one, Bromham, 18th May; one, Bedford Sewage Farm, 24th May; two over Bromham, early in June and another on 14th; one, Dunstable Sewage Farm, 4th August; one, over Putnoe wood, 7th August; flight of 28 heading northwards over Whipsnade, 8th August; one, over Henlow, 1st September; one, over Stagsden, 26th September; two, Bromham, 27th September; and one, over Luton, on the same date (M.O.).

WHIMBREL (*Numenius phaeopus*)—One, over Bedford, 4th August; 9 calling in flight over Stewartby, 23rd August; c. 30, Bedford Sewage Farm, 11th December; party on water-meadows at Oakley, heard in fog, 15th December, and one seen there on 16th; all exceptionally late dates (M.O.).

GREEN SANDPIPER (*Tringa ochropus*)—Single birds seen intermittently from June to August at Dunstable and Bedford Sewage Farms; one, Fenlake gravel pits, Bedford, 27th June; one, Wick End, Stagsden, 7th August; one, over Henlow, 26th August; one, near Arlesey, 1st September; up to two, Luton Hoo lake, 28th July–16th August (M.O.). From past experience it is most probable that more observation at several other localities would have yielded further records. (This is endorsed by excellent observations made by A.R.J. at Ickleford – just outside the county in Hertfordshire – who writes 'observed in every month of the year except May. At least one or possibly two birds spent the 1952–53 winter at Ickleford. Last winter birds seen 9th April. Although a weekly watch is kept there is a blank period until 22nd June when the first passage of migrants arrived. From the second week of July numbers gradually increased with a maximum of 8 on 20th August. After this numbers decreased until there were only three on 3rd October, the present winter population.)

WOOD-SANDPIPER (*Tringa glareola*)—One, Oakley, 17th August (B.S.).

COMMON SANDPIPER (*Tringa hypoleucos*)—Spring migration: one, Dunstable Sewage Farm, 11th April; two, Arlesey pits, 25th April; one, gravel pit near Bedford Sewage Farm, 10th–17th May. Return migration: two, Dunstable Sewage Farm, 11th July, and up to four there 28th July to 23rd September; one, Bedford Sewage Farm, 18th July; up to two seen at intervals at Arlesey pool, 19th July to 27th September; four, East Hyde, 7th September (M.O.).

REDSHANK (*Tringa totanus*)—First arrivals (6) at Bedford Sewage Farm, 8th March, and 12 there by 15th; at least five pairs bred in this locality; two, Cowslip Marsh, Luton, 2nd–11th June (F.C.G., B.S. and M.G.W.).

GREENSHANK (*Tringa nebularia*)—One, Dunstable Sewage Farm, 4th August to 23rd September (M.G.W., H.C. and D. and R.W.).

LITTLE STINT (*Calidris minuta*)—One, Whipsnade Park, 3rd May; two, Dunstable Sewage Farm, 17th–19th September, seen at close range with binoculars, characters noted: small size as compared with other species of waders present, pure white breast, pale superciliary stripe, white area below eye, mottled brownish back with two dark converging bands edged with lighter colour giving chevron effect; chirruping call heard (H.C. and D. and R.W.).

DUNLIN (*Calidris alpina*)—Four, Bedford Sewage Farm, 14th–25th March, and two there on 31st; up to three, Dunstable Sewage Farm, 16th–30th August (M.O.).

CURLEW-SANDPIPER (*Calidris testacea*)—One, Dunstable Sewage Farm, 13th September. Characters noted with aid of binoculars: small size, dark decurved bill, buff breast, white rump; chirruping call heard in flight (M.O.).

RUFF (*Philomachus pugnax*)—Varying numbers seen at Dunstable Sewage Farm, 23rd August to 24th October; largest party, 13 on 26th August (M.O.).

STONE-CURLEW (*Burhinus oedicnemus*)—Birds heard throughout summer in the hilly areas of south Bedfordshire. Nest with eggs and subsequently two young found not far outside county boundary in Hertfordshire (A.R.J., F.C.G. and Mrs C. M. Lucas).

GULLS (*Larus* spp.)—Many reports of small parties of the larger gulls flying across the county during all but the summer months.

LESSER BLACK-BACKED GULL (*Larus fuscus*)—One, over Arlesey pool, 27th April, and another there on 2nd August. On 12th August a bird which was probably of the Scandinavian race was seen on the pool. The back and wings were as dark as the primaries and quite black (A.R.J.).

HERRING GULL (*Larus argentatus*)—Daily passage along the Ouse valley into the county near Eaton Socon seen in January and February and again in December. The birds came in each morning from the N.E., evidently flying to feeding grounds on nearby farmland, returning each evening in the opposite direction. *c.* 40, Willington gravel-pit and tip, 25th January. Several small flights seen in winter months and small parties scavenging at refuse-pits at this season, the largest recorded *c.* 150 with *c.* 60 Black-headed Gulls, Luton tip, 28th December (M.O.).

COMMON GULL (*Larus canus*)—Several reports of single birds or small numbers seen with parties of Black-headed Gulls during all except the summer months (M.O.). A.R.J. reports a decided passage in March and April, sometimes between 80–100 birds in a single flock, in the Arlesey area. First winter visitors seen there on 11th October.

BLACK-HEADED GULL (*Larus ridibundus*)—Flights of up to 100 birds seen feeding in farmland or flying along river valleys in winter months. Occasional non-breeding birds seen throughout the summer. There appears to be a regular daily passage of birds from London roosting areas each morning in winter months to south Bedfordshire, where the birds feed on farmland and tippings, returning each evening (M.O.).

KITTIWAKE (*Rissa tridactyla*)—An immature bird was seen at Arlesey pool, 25th–28th April, and studied at close range with binoculars. Full details supplied together with sketch made on the spot by the observer (A.R.J.).

COMMON TERN (*Sterna hirundo*)—One immature bird, Arlesey pool, 19th September (A.R.J.). 1952 Record: five, Arlesey pool, 30th April (A.R.J.).

TERN (*Sterna hirundo/macrura*)—Either Common or Arctic Tern flew over Bury End, Stagsden, 20th September (A.D.).

PUFFIN (*Fratercula arctica*)—One was found alive in the grounds of Moggerhanger Sanatorium early in February, evidently blown inland by recent gales. It was fed on sardines for several days by the patients, but subsequently died; information reached Recorder on 23rd February (D.W.E. and Rec.).

WOOD-PIGEON (*Columba palumbus*)—A pair which laid their first egg on 27th February at Bromham were feeding their fourth brood in the same nest on 14th September (F.G.R.S.).

TURTLE-DOVE (*Streptopelia turtur*)—First arrival, Topley's Hill, Biggleswade, 26th April. A flock of *c.* 100 seen in company with a similar number of Wood-Pigeons near Pegsdon, 25th July. Young still in nest, Bromham, 7th September. Last emigrant, Dunstable, 13th September (H.C., F.G.R.S. and F.C.G.).

CUCKOO (*Cuculus canorus*)—First heard, Whipsnade, 20th April, and Stagsden, 22nd April (P.S.B. and F.C.G.). (Unconfirmed reports in the *Amptihill News* gave Steppingley on 11th and Flitwick on 12th). Information from several sources seemed to indicate that this species was less frequent this season.

LONG-EARED OWL (*Asio otus*)—A particular watch was kept in the haunts but none was seen or heard during the year.

SHORT-EARED OWL (*Asio flammeus*)—One shot near Tempsford, 7th November (C.F.T.).

NIGHTJAR (*Caprimulgus europaeus*)—First arrivals consisted of an unusually large party of c. 12 birds; during an evening visit to a small area of plantation between Flitwick and Eversholt on 11th May, the birds were flying all around the observer (W.G.S.). One seen and heard, Bull Wood, Luton Hoo, 16th–22nd June – new locality; one heard, Clophill, 4th August (W.G.S., S.W.R. and F.C.G.).

(A 'hawk-like' brown bird with pointed wings was put up in Bowel's Wood, Bromham, by a spaniel on 6th and 8th December. On each occasion it flew low for a short distance and glided silently to cover (W. T. Pares). At 10 p.m. on the 9th a grating or 'reeling' call of five to ten seconds' duration was heard twice, with an interval of a few moments between the calls, in the same locality by T. H. Pares who is a competent ornithologist. From past experience he said it sounded like a shortened version of the typical nightjar song).

SWIFT (*Apus apus*)—First arrival, Bedford Sewage Farm, 26th April. Last emigrants (3) at Arlesey pool, 28th August (F.C.G. and A.R.J.).

HOPOE (*Upupa epops*)—Excellent views of one at Flitwick Moor by W. Champkin and F.C.G. on 25th April during a Field Meeting. It was seen on the next day for several moments by the Recorder and W.G.S. and on one or two subsequent occasions throughout the next fortnight in the Flitwick–Greenfields area by other observers.

LESSER SPOTTED WOODPECKER (*Dendrocopos minor*)—Single birds reported from Bedford, Bromham Park, and Luton; a pair at Luton Hoo, 28th March (new locality) (M.O.).

WOOD-LARK (*Lullula arborea*)—Main haunt not visited. Only one report received – two, Galley Hill, Luton, 19th May (M.D.W.).

SWALLOW (*Hirundo rustica*)—First arrival, seen Bromham, 28th March (Miss P. Soper). Last emigrant, Bedford, 19th November (B.S.). The last main pre-emigration concentration, c. 200 birds, was seen at Bedford Sewage Farm, 22nd August (F.C.G.).

HOUSE-MARTIN (*Delichon urbica*)—First arrivals (3) Arlesey, 14th April. Last emigrant over Bedford, 31st October (B.S. and A.D.).

SAND-MARTIN (*Riparia riparia*)—First arrivals (6) Bedford Sewage Farm and Bromham, 30th March; Tingrith, 2nd April. Last emigrants (4), Bedford Sewage Farm, 14th October (B.S. and W.G.S.).

HOODED CROW (*Corvus cornix*)—Up to two, Dunstable Sewage Farm, 11th January to 21st February; three, Cave's Lane allotments, Bedford, 7th February; one, Luton Hoo, 14th February (H.C., M.D.W. and W. Champkin).

NUTHATCH (*Sitta europaea*)—Reported throughout the year in small numbers from the following localities: Oakley, Bromham Park, Southill, Old Warden, Ampthill, Aspley Guise and Woburn (M.O.).

MISTLE-THRUSH (*Turdus viscivorus*)—Party of c. 50, mainly juveniles, Pegsdon, 4th July (F.C.G.). Several small flocks flying westwards over Luton, 20th August. From then until the end of the year more abundant than usual in south Bedfordshire (H.C.).

FIELDFARE (*Turdus pilaris*)—Last emigrants, c. 200, near Hexton, 18th April, and c. 70 there on 24th. First autumn arrivals, c. 20, Bedford Sewage Farm, 25th October, and a similar party at Whipsnade two days later (F.C.G., B.S. and P.S.B.).

REDWING (*Turdus musicus*)—Last emigrants, 'Small numbers roosted in my garden at Bromham all winter, but numbers increased to c. 200 by end of first week in April, prior to emigration' (F.G.R.S.). Last emigrant singing at Bromham, 16th March (Rec.). First autumn arrivals (small numbers), Dunstable Downs, 18th October, and Bedford, two days later (F.C.G.).

WHEATEAR (*Oenanthe oenanthe*)—Only one report of spring passage, c. 20 flying N.E. over Charlton, 1st April. Return migration: two, Bedford Sewage Farm, 8th August; one, Putnoe Lane, Bedford, 10th August; three, Houghton chalk pit, 6th September; and one, Luton, 12th September (M.O.).

WHINCHAT (*Saxicola rubetra*)—First immigrant, Luton, 1st May. Two pairs reared young at Bedford Sewage Farm. Single birds, Streatley, 11th July, and East Hyde, 12th August, may have bred locally. Return passage: two for a few days from 7th September at East Hyde; pair, Sewell, 16th September; two, Luton, 19th September; two, Dunstable Sewage Farm, 20th September to 13th October (M.O.).

REDSTART (*Phoenicurus phoenicurus*)—First immigrants (males): Luton Hoo, 9th April; Renhold, 11th April; (females), Duloe, Eaton Socon, 21st April; Stagsden, 26th April; Bromham, 28th April. Pair near Hexton, 24th April. Single pairs bred, Luton Hoo, Rowney Warren and other localities in the Greensand area. Pair near Pegsdon hills, 17th August. Party of young, Bromham, end of August. Last bird seen, Woburn Sands, 30th August (M.O.).

NIGHTINGALE (*Luscinia megarhynchos*)—First heard, Stagsden, 22nd April (F.C.G.).

GRASSHOPPER-WARBLER (*Locustella naevia*)—First seen and heard at Pennyfather's Hill plantations, Clophill, and near Hexton, 24th April. Heard Flitwick Moor, 26th April (E.G.E., F.C.G. and Rec.).

REED-WARBLER (*Acrocephalus scirpaceus*)—As usual overlooked on arrival and no reports received till the breeding season was well advanced. Last emigrant, Oakley, 3rd October (F.C.G.).

SEDGE-WARBLER (*Acrocephalus schoenoboenus*)—First seen and heard, Bedford, 22nd April (C.S.P.).

BLACKCAP (*Sylvia atricapilla*)—First heard, Luton Hoo and Whipsnade, 24th April (M.D.W.) and Kempston, 26th April (C.S.P.). There was an authenticated occurrence of a female at Oakley, 2nd-3rd February when the bird was carefully studied at close range by A. G. Oldfield in his garden as it moved through the undergrowth. The bird had probably wintered.

GARDEN WARBLER (*Sylvia borin*)—A species which continues to be overlooked on account of the similarity of its song with that of the Blackcap. Only report received, Luton Hoo, 9th May (M.D.W.).

WHITETHROAT (*Sylvia communis*)—First heard, Stagsden, 19th April (A.D.).

LESSER WHITETHROAT (*Sylvia curruca*)—Continues to be overlooked by most observers not being familiar with its song. Most reports of single birds seen were received from the chalk hills of south Bedfordshire (M.O.).

WILLOW-WARBLER (*Phylloscopus trochilus*)—First arrival, Flitwick, 27th March (W.G.S.). Last emigrant, Stagsden, 20th September (A.D.).

CHIFFCHAFF (*Phylloscopus collybita*)—First heard, Whipsnade, 25th March, and Bromham and Luton Hoo, 28th March (P.S.B., M.D.W. and B. S. Martin). Last emigrants, Luton Hoo and Chiltern Green, 27th September (H.C. and M.D.W.).

WOOD-WARBLER (*Phylloscopus sibilatrix*)—Two pairs first heard in old haunt - Flitwick/Eversholt area - 12th April. Young seen at one site in June. Nest with five young, Bull Wood, Luton Hoo (new locality), 25th June (W.G.S. and M.D.W.).

SPOTTED FLYCATCHER (*Muscicapa striata*)—First reported, Whipsnade, 11th May (P.S.B.).

PIED FLYCATCHER (*Muscicapa hypoleuca*)—One, Whipsnade, 22nd April, and again 30th May (P.S.B.). There was an interesting sequence of occurrences in Bedford: Sqn. Ldr. D. M. Ferrier saw a male in his garden in Lansdowne Road on 27th April and on the next day a female had joined it. The pair were

present in the garden for a week and then disappeared. Later in the summer a bird which was either a female or a juvenile was seen in an adjoining garden by Mr Brocklehurst who had an excellent view as it flew from tree to tree. This bird was only seen on one afternoon. The gardens in this area are all very large and contain many old trees; the birds may have bred in the district.

MEADOW-PIPIT (*Anthus pratensis*)—Small migratory movements were noticed as follows: easterly; through Bedford Sewage Farm, 22nd March, and over Stagsden, 29th March (c. 50 on each date, composed of ones and twos): westerly; along the Dunstable and Barton Downs escarpments, 13th August (A.D. and F.C.G.).

TREE-PIPIT (*Anthus trivialis*)—Recorded from the usual haunts and Luton Hoo (new locality). No arrival dates reported (M.O.).

PIED WAGTAIL (*Motacilla alba yarrelli*)—Usual numbers at all seasons of the year at Bedford Sewage Farm. Reported in small numbers from most other regular haunts (M.O.). Large roost in rushes at Oakley bridge, 2nd October (F.C.G.).

GREY WAGTAIL (*Motacilla cinerea*)—No record of breeding during the year. Adult, Oakley, 4th June. Five juveniles, Dunstable Sewage Farm, 13th August, and one juvenile, Harrold, 23rd August (F.C.G. and E.G.E.). Many reports of ones and twos seen during the winter months at such favourite haunts as Bedford and Dunstable Sewage Farms, East Hyde (there are sewage works near here) and occasionally elsewhere (M.O.).

YELLOW WAGTAIL (*Motacilla flava flavissima*)—First arrivals, Bedford Sewage Farm, 11th April, where not more than 20 were present at any time during the spring passage (this is much fewer than usual) (F.C.G.). A few pairs recorded from several breeding areas. None seen at Bedford Sewage Farm after 28th August (M.O.).

GREAT GREY SHRIKE (*Lanius excubitor*)—The bird recorded from the Luton area in December 1952 stayed until 1st February (H.C.). One, Whipsnade, 17th October (P.S.B.).

RED-BACKED SHRIKE (*Lanius collurio*)—Pair, Galley Hill, Luton, 21st May, and one female, Arlesey pits, 28th July (M.D.W. and A.R.J.). Fewer reports received than usual and strangely no reference to breeding.

STARLING (*Sturnus vulgaris*)—A bird was seen to rob an egg from a Blackbird's nest in Bedford, 26th March (Miss E. Lechler). The former roost at Elstow was unoccupied in the autumn but the old roost at Everton was again occupied since the latter part of October (F.C.G.). A roost of many thousands was seen at Stanbridge, 15th March (H.C.).

FINCHES (*Fringillidae*)—A large mixed party of Finches with Sparrows and Buntings was present in a large weed-covered field at Bedford Sewage Farm from 25th October. The flock of c. 500 consisted mainly of House and Tree-Sparrows, Bramblings and Linnets with smaller numbers of Greenfinches, Chaffinches, Yellow Hammers and Reed-Buntings (F.C.G.).

HAWFINCH (*Coccothraustes coccothraustes*)—Only report—an unusually large party of ten, Bedford Sewage Farm, 21st October (B.S.).

GOLDFINCH (*Carduelis carduelis*)—Party of c. 150 birds in rough herbage near Dunstable Downs, 18th October (F.C.G.).

TWITE (*Carduelis flavirostris*)—One, Whipsnade, 2nd September (M. F. M. Meiklejohn). The observer's attention was drawn to the bird by its unfamiliar call as it flew along the hillside. In flight it showed forked tail, small white patches on the wings and yellow-buff underparts. When it alighted on rails close at hand the yellow bill was clearly seen.

REDPOLL (*Carduelis flammea*)—A small party, c. 12, Bull Wood, Luton Hoo, 18th–25th October (M.D.W.).

CROSSBILL (*Loxia curvirostra*)—The reported 'invasion' was first noticed at Whipsnade, 14th July, when five birds were seen. By the next day a 'large flock' was reported there. The birds stayed in the area till 23rd September when only three were present (P.S.B.). Two, Clapham, 23rd July (A. H. Gayton). Others were heard near Woburn in August–September and at Flitwick plantation, 10th September (W.G.S. and M.D.W.).

BRAMBLING (*Fringilla montifringilla*)—Many parties of up to 50 birds recorded from all parts of the county, the largest being c. 150, Bedford Sewage Farm, 30th December. Last emigrants, c. 20, Luton, 2nd April. First autumn arrivals, 10th October, Henlow Camp (M.O.).

CORN-BUNTING (*Emberiza calandra*)—Distribution normal at all seasons. An additional habitat recorded by M. F. M. Meiklejohn: 'an area on the Hertfordshire/Bedfordshire border between Harpenden and Luton seems to have been colonised since hedges were cut down. Since early in 1953 four or five males have been heard singing at most seasons, the greatest number in any one day was 10, 13th February. All observations were on the Bedfordshire side of the border.'

CIRL-BUNTING (*Emberiza cirius*)—None recorded though particular attention was given to a survey of the chalk hill areas.

HENRY A. S. KEY

Notes and Observations

THE ROOKERY, ST PETER'S GREEN, BEDFORD (see Frontispiece)

In 1949 rooks began a new nesting colony in the Bedford Borough at St Peter's Green and the adjoining De Parys Avenue with a group of three nests. Yearly since the colony has increased despite official action to displace and discourage the birds. In the spring of 1953 after such an onslaught by the Borough Fire Brigade several pairs moved to the elms above the Bunyan statue. The colony continued to flourish and is now one of several well established groups within the built-up areas of the town.

HENRY A. S. KEY

PLAYFUL HERRING GULL

Whilst watching gulls near Luton on 1st February 1953 one was noticed to dive down and catch some object in its beak before it reached the ground. The object was judged to be roughly the size and shape of a golf ball.

The gull, an immature Herring Gull, then rose up again to a height of approximately 150 feet and repeated the performance. This was continued several times, the gull catching the object about 20 feet from the ground. On one occasion the object reached the ground, when it was pounced upon by a Rook and an adult and an immature Common Gull which were feeding on the ground nearby.

However the Herring Gull came down and quickly retrieved the object. Then it proceeded as before, dropping the object whilst in level flight and then diving to catch it in its beak; this continued until the gull was lost to sight.

No calls were heard during the performance.

Herring Gulls are well known to have the habit of dropping mollusca from a height in order to break them; a directly useful action compared with the apparently playful one described above.

H. COLE

MOORHEN TAKING FISH

While on our way to Woburn on 30th August 1953 we stopped to look over the small pool at Crawley Mill Farm near Ridgmont. Although only a few Moorhen and Coot were present we were attracted by the behaviour of one of the Moorhens. It was seen to be struggling with a fish that it had grasped by the tail and finally the bird succeeded in pulling it on to a thick bed of *Persicaria*.

There the Moorhen pecked the fish until it was dead or stunned and then started to eat parts of it. As *The Handbook of British Birds* states that fish form about 1 per cent of the diet of Moorhens this observation is noteworthy because of the size of the fish taken. It was either a Silver or Bronze Bream, about six inches in length and weighing about a quarter of a pound. The bird was still feeding when we left after watching for about five minutes.

E. G. EELES AND F. C. GRIBBLE

SOME OBSERVATIONS ON THE 'FALSE SPRING' OF 1953

The weather of the latter months of the year was significant for its mildness and scarcity of rainfall; it constituted almost, if not quite, a record throughout the country. Temperatures were well above the average for the season. This spell of unusual weather, which continued beyond the middle of December and was abruptly ended by a sharp snap a few days before the close of the year, had a remarkable effect on both plant and animal life.

Observations by Members of the Society have been confirmed and increased as the result of a letter I wrote to the *Bedfordshire Times*. The following is the picture obtained.

More than the average number of bats were seen flying until late in the year. Hedgehogs were much in evidence and many were found dead on the main roads. Badger earths showed signs of continued outdoor activity judging by the numerous pad-marks.

The song of many species of birds was far more that of the breeding season than that of the winter months and was evidently territorial with some. Sparrows, starlings, robins, blackbirds and rooks were seen to carry nesting material. Rooks in a rookery at the High School in Bromham Road were witnessed by myself to be paired and indulging in nest construction; one bird actually modelling the cup of the nest with freshly broken twigs supplied by the partner. Cases of supposed breeding of blackbirds could not however be substantiated though there was one valid record of a nestling starling found dead on a garden path at Wootton End, Kempston, on 20th December (Mrs J. C. Baty). The strangest observation was that supplied by Mr T. H. Pares made at Bowel's Wood on 9th December (see p. 38). It was in all probability a belated nightjar which should by this late date have been in Africa. Other unusually late migrants included an abnormally large party of whimbrel seen on 11th December at Bedford Sewage Farm by Mrs C. M. Lucas and Miss I. Brandon.

Many species of moths and butterflies as well as flies were reported during December. Wasps continued to be active, one being caught while buzzing around on 3rd January 1954 by Mr F. C. Horsford of West Grove, Bedford.

There is only space to enumerate one of the several lists of flowers, both garden and wild, seen in bloom. Mrs McKay Brown of the Reay Cottage, Sharnbrook, saw in one locality on the verge of the widened Bletsoe-Riseley junction with the main Bedford-Rushden arterial road in some profusion Dandelion, Mayweed, Yarrow, Ivy-leaved Speedwell, Shepherd's Purse, Groundsel, Smooth Hawk's-beard, Sow Thistle, Bristly Ox-tongue, Chickweed, Common Mallow, Hogweed, Buttercup, Petty Spurge, Mugwort, Red and White Dead-nettles, Scarlet Poppy and Nipplewort. In addition within a quarter of a mile of Sharnbrook Church there were Traveller's Joy, Daisy, Bugle, Herb Robert, Ivy, White Campion, Dove's-foot Cranesbill, Dog's Mercury, White Bedstraw, Black Knapweed, Burdock, Ragwort, Figwort, Goat's Beard, White Goosefoot, Charlock, Hop Trefoil and Pussy Willow (Sallow). From other correspondents addition could be made to the above lists. Primroses were reported from several woods in the north of the country.

Mrs McKay Brown also sent a list of thirty plants in flower in her garden on 1st December.

Other excellent accounts of both garden and wild flowers in bloom were sent to me by Mr Robert Daws of Houghton Park, Ampthill, Mrs C. M. Holmes of Riseley and others.

HENRY A. S. KEY

**ABSTRACTS OF LITERATURE ON
BEDFORDSHIRE NATURAL HISTORY FOR 1953**

THE FIELD. 1953.

'Antipathy of Rabbits to Hares'. His Grace the Duke of Bedford quotes two instances of rabbits chasing hares at Woburn, Vol. 201, p. 682.

ADDITIONS TO THE LIBRARY

BOOKS

John G. Dony's *Flora of Bedfordshire* (2 copies).

PERIODICALS

Bedfordshire Naturalist, No. 1-7 (1946-52) (bound copy); *Country-Side*, summer number 1953; *Natural History* (J. of the American Museum of Natural History), monthly, Vol. 62 (1953).

OUR CONTEMPORARIES

British Empire Naturalists' Association, *Bull.*, summer 1953.

Folkestone Nat. Hist. Soc., *Trans.*, 1949-50; *Rep.*, 1951-52, 1952-53; *Progr.*, winter session 1953-54.

Letchworth Nat. Hist. Soc., *J.*, 1951-52.

Northumberland, Durham and Newcastle-on-Tyne Nat. Hist. Soc., *Trans.*, Vol. 10, nos. 2, 3, 4, 5, 5a.

ORNITHOLOGICAL REPORTS

Cambridge Bird Club, *Rep.* for 1944, 1945, 1947, 1948, 1950, 1951 and 1952.
Farne Islands, *Ornith. Rep.* for 1952.

Northumberland and Durham, *Ornith. Rep.* for 1952.

PAMPHLETS

Report of the Nature Conservancy for period up to 30th September 1952; ditto for the year ending 30th September 1953; A Booklet of the Wild Flowers and Ferns of the District around Folkestone, by J. M. Walton, with an appended catalogue of Mosses by E. C. Green.

REPRINTS

'The Nature Conservancy' (*Nature*, 171, 1953, 590); 'The Nature Conservancy in Scotland' (*Scottish Geographical Magazine*, 68, 1952, 80-2); 'The Work of the Nature Conservancy' (*Trans. R. Inst. Chartered Surveyors*, Session 1952-1953, 85, part 2); 'Survey of Poole Harbour', by F. H. Greene and J. D. Ovington (Dock and Harbour Authority, September 1952); 'Notes on Erosion along the Coast of Suffolk', by J. A. Steers (*Geological Magazine*, 88, 1951 435-439); 'The Afforestation of Tentsmuir Sands', by J. D. Ovington (*J. Ecology*, 39, 1951, 364-375); 'A Contribution to the Flora of West Sutherland', by Mary McC. Webster and P. Marler (*Watsonia*, 2 (3), 163-179); 'Britain's First Nature Reserve' (*Sphere*, 22nd December 1951, 495-498); 'Variations of the Song of the Chaffinch, *Fringilla coeleps*', by P. Marler (*Ibis*, 94, 1952, 452-458); 'Studies in Statistical Ecology - Spatial Pattern', by J. G. Skellam (*Biometrika*, 39, 1952, 346-362); '*Diapensia lapponica* in Scotland', by J. Grant Roger (*Trans. and Proc. Bot. Soc. Edinburgh*, 36, 34-36); 'Recent Changes in the Marshland Coast of North Norfolk', by J. A. Steers (*Trans. Norfolk and Norwich Nat. Soc.*, 17, 1951, 206-213).

E. PROCTOR

BOOK REVIEWS

Flora of Bedfordshire. By John G. Dony. [Pp. 532 with 25 plates, 1 map and 22 figures.] (Luton: The Corporation of Luton Museum and Art Gallery. 1953. Price 42s. net.)

After a foreword by Sir Edward Salisbury and a short preface by the author, there is an historical account of Bedfordshire botany. Then the basis of the flora is explained: this includes discussions on the administrative and Watsonian county, altitude, climatic factors, geological factors and soils, the last by T. Laffin.

There follows what is probably the most interesting and important part of the book – a study of the flora. This is divided into natural regions, the composition of the flora, plant distribution and the botanical districts. Throughout the account of the nine natural regions there are interspersed nearly 100 habitat studies made by the author in which he describes the conditions of numerous habitats and the plant species living therein.

At p. 143 the plan of the flora proper is unfolded; to this is appended a bibliography of published material relating to the Bedfordshire flora.

The flora then starts on p. 153 with the Stoneworts, named by G. O. Allen, followed by sections on the Liverworts by P. Taylor, and the Mosses by T. Laffin. Next come the Ferns, after which the Conifers and Flowering Plants are considered. The casuals, garden escapes and other plants of a less permanent nature are dealt with separately. Finally the Fungi are treated by D. A. Reid. So p. 494 is reached.

The book is completed by an index of botanists, geographical index, index of plant names and a list of subscribers.

The photographs chosen for the Plates reflect the ecological nature of this flora as well as the beauty of the county; while figs. 11 to 22 map the distribution of various interesting plants.

Dr Dony is to be congratulated on this volume which, while listing authoritatively and very completely the numerous plants found in the county, emphasises the ecological conditions underlying plant communities. This up-to-date treatment of the subject should do much to develop a true appreciation of plants. Dony's *Flora of Bedfordshire* will take its place as a landmark among books on county flora. It should be studied by all interested in natural history whether residents of Bedfordshire or elsewhere.

THE EDITOR

The Behaviour and Social Life of Honeybees. By C. R. Ribbands, P.S.O., Bee Department, Rothamsted Experimental Station. [Pp. 352, with 9 Plates and 66 figs.] (London: Bee Research Association, Ltd., 1953. Price 21s.)

'This book is an attempt to provide a comprehensive review of knowledge of the behaviour and social life of honeybees to meet the needs of research workers and students as well as practical beekeepers and readers of natural history.'

There is gathered together here in one volume a non-technical account of research on bees. The book, after a short introduction, is in four parts – The Roots of Behaviour, Individual Behaviour in the Field, Communication between Honeybees, and Life within the Community. Each part is divided into numerous short chapters, 38 in all, each of which is headed by an apt quotation.

This is not a book to teach beginners how to keep bees but it is a book from which both the experienced and inexperienced beekeeper will learn more about the craft and the wonder of the bee.

The experiments described are made clear by simple well-drawn diagrams. The smoothness of the narrative is interrupted by the frequent repetition of the phrase 'N . . . found that . . .'. This may be inevitable in a book that reviews so many experiments. The Plates are delightful photographic reproductions. Finally there is an extensive list of references and a good index.

This is a book that should be available in every Beekeepers' Association library and may well have a much wider circulation among all who are interested in nature.

O. N. GARRARD

IN MEMORIAM

HIS GRACE THE DUKE OF BEDFORD; joined the Society 6th December 1946, President 1949-53; died on 9th October 1953.

Mr F. G. R. Soper writes: The tragic death of the Duke of Bedford in a shooting accident on 9th October last robbed this Society not only of its President, but of a very real friend who on many occasions had shown his interest in our aims and objects. His interest in birds and animals was fostered from an early age by his father, the eleventh Duke, a great zoologist who not only had gathered at Woburn Park a remarkable collection of rare birds and animals but, as the President of the Zoological Society of London for 37 years, had played no small part in the creation of Whipsnade Zoological Park. Since he inherited the Woburn Estate, the late Duke, in spite of war time difficulties, had spared no effort to preserve the more valuable parts of his father's collection, notably the herd of Pere Davids deer, now extinct in their native China, and the European bison, of which only a few now remain in Northern Europe. He was an authority on parrots, of which he had a superb collection that he brought from his former Sussex home to Woburn. He also had a very wide knowledge of waterfowl, spiders and fish. A keen and accurate observer, he frequently wrote to such journals as the *Field*, correcting in the gentlest manner an error of fact made by another correspondent or giving his own experience of incidents mentioned by others.

He took no active part in the formation of our Society, but he accepted an invitation to one of our early lectures at Luton. At our Second Annual General Meeting he accepted the Presidency of our Society, a position he still held at his death. He was never content to be a mere figurehead. He attended a number of our meetings where his contributions to our discussions were valuable, whilst his lecture on the Woburn deer will not readily be forgotten. He contributed an article to our JOURNAL and on several occasions we were his guests at Woburn where he himself led the party through the most secluded parts of that beautiful estate, all the time explaining and pointing out any features he thought would interest his fellow nature-lovers.

To a naturalist, whatever his station in life, the late Duke was a delightful companion. He spared no trouble to render a service to a friend, and he was always ready to place his wide knowledge of natural history at anyone's disposal. This Society has indeed lost a great friend.

BRIGADIER C. C. FOSS, V.C., C.B., D.S.O., D.L.; joined the Society 3rd May 1947, served on the Council 1948-50; died on 9th April, 1953.

Mr F. G. R. Soper writes: The stocky thick set figure of Brigadier Foss was familiar to many people in and around Bedford, but to most of them he was simply a tough fighting man, whose supreme valour had earned for him the most coveted of decorations, and, as one of her Majesty's Deputy Lieutenants for Bedfordshire and a County Magistrate, he was regarded with respect and even awe. A somewhat brusque manner was at times disconcerting, but, when one got to know him, he was a most engaging companion and one realised that his rugged frame contained a heart of gold. For years he had given much time to the Boy Scout movement and only those who had seen him surrounded by his boys, all of whom idolized him, realised the happiness that work gave him. No soldier down on his luck ever appealed to him in vain, but it is as a member of this Society that tribute is now paid. For three years he was a member of the Council where he contributed much of real value. A first class field botanist, he did a good deal of work in Gloucestershire before coming to Bedford, since which time he had worked indefatigably in collaboration with Dr Dony and other local botanists. A careful and accurate observer, he was a welcome member of any field meeting and more than one member of the Society will retain the memory of his familiar figure, sitting on a grassy bank in the sunshine patiently examining and explaining the contents of his vasculum to a group of young naturalists. His sudden death robbed us of a sound botanist and a valued friend.

J. ARNOLD WHITCHURCH; joined the Society in the spring of 1947; died on 24th February 1953.

GEOFFREY YOUNG; joined the Society on 13th April 1948; died on 27th September 1953.

LIST OF MEMBERS

The *List of Members* (No. 6, pp. 37-41) plus the *New Members and Corrigenda and Changes of Address* (No. 7, pp. 35-6) can be brought up-to-date by the following:

NEW MEMBERS

- 1954 Classey, H. J., 12 Allen Close, Queens Park, Bedford.
 1954 Classey, Mrs M., 12 Allen Close, Queens Park, Bedford.
 1954 Cooper, Miss A. L., Priory Hospital, Dunstable, Beds.
 1954 Daw, R., Houghton Park, Ampthill, Beds.
 1953 Duncan, Miss R. E. A., 5 Felstead Close, Luton, Beds.
 j1954 Dymond, Miss J. M., 27 Wendover Drive, Bedford.
 1953 Farmer, Miss P. A., The Bungalow, Moor-End, Bromham, Bedford.
 1954 Harris, L. C., 33 Silverdale Street, Kempston, Bedford.
 1954 Haylock, Mrs E. M., 56 Bedford Road, Kempston, Bedford.
 1954 Haylock, W., 56 Bedford Road, Kempston, Bedford.
 1954 Jackson, Miss E. M., 18 St George's Road, Bedford.
 1954 Jackson, Miss M. E., 18 St George's Road, Bedford.
 1953 Jeffreys, Mrs C. N., 116 Hurst Grove, Bedford.
 1953 Jenkins, A. R., Selborne, Woolgrove Road, Hitchin, Herts.
 1954 Jones, S., 9 Hurst Way, Luton, Beds.
 1953 Pearce, R. L., 14 Aspley Hill, Woburn Sands, Bletchley, Bucks.
 1953 Rowland, H. R., 1a Calnwood Road, Luton, Beds.
 1954 Sharman, Mrs V. M., 41 Foster Street, Bedford.
 1953 Smith, M. W. P., 166 Bromham Road, Bedford.
 a1953 Stansfield, Mrs L. A., The Pines, 20 High Street, Flitwick, Beds.
 1954 Voyce, Mrs G. M., 28 Cutcliffe Place, Bedford.
 1954 Voyce, J. J., 28 Cutcliffe Place, Bedford.
 1954 Wall, E. S., 18 Avondale Road, Luton, Beds.
 1954 Wallis, Miss J., 4 Merton Road, Bedford.
 a1954 Walters, J., 65 Ditmas Avenue, Kempston, Bedford.
 a1954 Walters, Mrs M. E., 65 Ditmas Avenue, Kempston, Bedford.
 1953 Whitmore, Mrs C. N., The Spinney, Day's Lane, Biddenham, Beds.
 1953 Whitmore, Dr H., The Spinney, Day's Lane, Biddenham, Beds.
 1954 Wilson, W., 226 Ampthill Road, Bedford.

CHANGES OF ADDRESS

- Cooke, R. H. F., 11 High Street, Bedford.
 Dunn, Mrs A. A., Mulberry Cottage, Ickwell Bury, nr Biggleswade.
 Dunn, J. S., Mulberry Cottage, Ickwell Bury, nr Biggleswade.
 Guppy, A. W., White Larch, Grange Lane, Bromham, Bedford.
 Kuhlicke, F. W., Trinity Close, The Crescent, Bedford.
 Laurence, B. R., 4 Princes Garth, London Road, Forest Hill, London, S.E.23.
 Lee, Mrs E. (née Miss E. Dunning), Cox Green, Kings Walden, Herts.
 Lines, G. R., 4 Rye Hill, Cromwell Hill, Luton, Beds.
 Reid, D. A., The Herbarium, Royal Botanic Gardens, Kew, Surrey.

DELETIONS

- Adams, G. W.; Ashworth, J.; Baker, J. J.; Barnett, Miss V.; Bedford, His Grace the Duke of; Blade, Miss V. I.; Blundell, E. T.; Blundell, Miss M. E.; Bonnett, G.; Boutwood, A.; Boutwood, J. M.; Chandler, H. G.; Church, J. H.; Church, J. W.; Costin, Miss E. S.; Davies, H. J.; Dixon, Mrs J.; Dunstable Pioneer Boys' Club; Elwell, Miss G.; English, R. J.; Everett, F. S.; Fedigan, L.; Fincher, F.; Fluck, R. G.; Foss, C. C.; Free, J. B.; Garrett, J.; Gover, H. W.; Greenfield, Mrs I. A.; Groom, Mrs N.; Hamilton, D. C.; Hummerston, Mrs M. A.; Hutchings, W. J.; Johnstone, A. S.; Lardge, Miss K. I.; Lewis, Mrs V.; Linsell, Miss N.; Lucas, R. L.; Matthewman, J. G.; Minhall, Miss P.; Palfrey, S. P.; Palmer, D. S.; Price, Miss A. E.; Randall, G. D. W.; Rogers, G. A.; Rooms, H. W.; Rowley, Miss F. M.; Scrimgeour, Miss J.; Sewell, Mrs. J.; Sharp, C. F.; Sharpe, Mrs L.; Sinfield, R. C.; Snow, D. W.; Storch, Miss H.; Symes, A.; Symes, P.; Taylor, P.; Vigar, Miss C. J.; West, R. A.; Whitchurch, J. A.; White, F.; Whitehouse, T. H.; Whitworth, Miss D.; Why, Miss E. D.; Young, G.

THE DISTRIBUTION OF BRITISH PLANTS

The Botanical Society of the British Isles is beginning this year a scheme which will result in the mapping of the distribution of British plants. The basis of the maps will be the 10-kilometre grid, now familiar to most naturalists. It is work in which other than expert botanists can play a useful part since records are needed for common and easily identified plants especially from parts of the county not often visited by botanists. The work can be done easily, as lists of plants needing to be recorded will be provided and it will be necessary only to tick the names on these lists. It may well appeal to naturalists spending holidays in usually unfrequented parts of the British Isles. I shall be glad to provide anyone interested with further information.

J. G. DONY

NATURAL HISTORY STUDY

The University of London awards a Certificate of Proficiency in Natural History. The certificate was formerly restricted to teachers, but other persons interested in the study of living things in their natural habitats may now be admitted. The work involves a directed course of private reading at home, attendance at a practical course of four weeks' duration in the Spring and Summer, an approved plan of field-work suited to the student's locality to be written up in the form of an essay, and examinations.

Students wishing to begin their directed course of reading may apply at any time before 30 November for registration with a view to attending the next practical course, which it is hoped to hold at the Flatford Mill Field Centre of the Council for the Promotion of Field Studies (East Bergholt, near Colchester) during one week in the Spring and three weeks in the Summer of 1955.

The regulations and application form may be obtained from the Secretary, Natural History Certificate Course, Department of Extra-Mural Studies, University of London, Senate House, London, W.C.1.

MORE ABOUT HONEYBEES

The *New Naturalist* continues to enlarge its library and *The World of the Honeybee*, the latest volume in the Main Series, has been written and illustrated by one of our visiting lecturers. Those of us who listened to Dr Colin G. Butler at Luton in October 1948 and had a fleeting glance at some of his close-up photographs will be especially interested in and fascinated by this account of the honeybees and the many beautiful examples of close-up photography, as well as by the colour photograph of the honeybee's nest out in the open among nettles.

THE EDITOR

CONDITIONS OF MEMBERSHIP

The Council of the Society shall approve each application for membership, but subject to this condition, membership shall be granted on payment of the annual subscription, viz:—

- 10s. 0d. Ordinary members and affiliated institutions (full membership).
- 7s. 6d. Full time students (full membership).
- 5s. 0d. Associate members (do not receive the Society's Journal).
- 2s. 6d. Junior members (under sixteen years of age, do not receive the Society's Journal).

Application forms for membership can be obtained from the *Hon. Membership Secretary*, 27 Rothsay Road, Bedford.

LIFE MEMBERSHIP

Any Member may compound for life by a single payment of £10.

SUBSCRIPTIONS

Members are reminded that their subscriptions are due on the 1st January in each year. These should be sent to

The Honorary Treasurer,

W. H. BONNETT,

Bedford Road, Stagsden, Bedford.

NOTICE TO CONTRIBUTORS

The Editorial Committee welcomes suitable contributions on the natural history of the county for publication in THE BEDFORDSHIRE NATURALIST. Short paragraphs from members about their own observations of general interest are specially desired. All material should, if possible, be typewritten in double spacing on one side of the paper only, or written very legibly. Illustrations should not be prepared before consultation with the Editor.

Contributions to be considered for publication in the next issue should be sent to *The Honorary Editor* by 1st March 1955.

SETS OF THE JOURNAL

Complete sets of the JOURNAL (Nos. 1-7) are now obtainable, price one pound eight shillings, from the Hon. Editor. Single copies remain at five shillings each.

THE NATURE CONSERVANCY

The new address of the Nature Conservancy is:—

19 Belgrave Square, London, S.W.1

(Phone: BELgravia 3241)