

The Bedfordshire Naturalist

**JOURNAL OF THE
BEDFORDSHIRE
NATURAL HISTORY
SOCIETY
FOR THE YEAR
1974**

No. 29 ONE POUND

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SOCIETY**

THE BEDFORDSHIRE NATURALIST

THE JOURNAL OF THE

THE BEDFORDSHIRE NATURAL HISTORY SOCIETY

Edited by R. V. A. Wagstaff

No. 29 1974

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BEDFORDSHIRE NATURAL HISTORY SOCIETY 1975

Chairman:

P. SMITH

Hon. Secretary:

MRS E.B. RANDS, 51 Wychwood Avenue, Luton.

Hon. Treasurer:

J. M. DYMOND, 91 Putnoe Lane Bedford.

Hon. Programme Secretary:

R.J. WOOLNOUGH, 122 High Street North, Dunstable.

Hon. Librarian:

R.B. STEPHENSON, 17 Pentland Rise, Putnoe, Bedford.

Hon. Editor:

R.V.A. WAGSTAFF 29 Grasmere Avenue, Luton.

Committee:

D. Anderson
D. Green

W.J. Champkin
B.D. Harding
Miss R. Smart

M. Chandler
H.A.S. Key
Miss H. Webb

W. Drayton
B.S. Nau

RECORDERS:

BOTANY:

Fungi: Dr. D.A. Reid, The Herbarium, Royal Botanical Gardens, Kew.

Flowering Plants and Vascular Cryptogams:

Dr. J.G. Dony, 5 Stanton Road, Luton.

Bryophytes: A.R. Outen 26 Lyall Close Flitwick.

Lichens: Mrs F. Davies, 4 Chaul End Road, Caddington.

METEOROLOGY: A.W. Guppy, 22 Poplar Avenue, Bedford.

ZOOLOGY:

Mollusca, Leeches and Flatworms:

Mrs E.B. Rands, 51 Wychwood Avenue, Luton.

Spiders: T.J. Thomas, 142 Selbourne Road, Luton.

Bees Wasps and other Hymenoptera:

Dr. V.H. Chambers, 50 Shefford Road, Meppershall, Shefford.

Butterflies and Moths:

W.J. Champkin, 59 Rosamond Road, Bedford.

Dragonflies:

Dr. N. Dawson, The Old House, Ickwell Green, Nr. Biggleswade.

Bugs (Hemiptera-Heteroptera)

Dr. B.S. Nau, 15 Park Hill, Toddington.

Grasshoppers and Crickets:

D.G. Rands, 51 Wychwood Avenue, Luton.

Amphibians and Reptiles:

C. Banks, 72 Spencer Road, Luton.

Birds: B.D. Harding, 26 Woodlands Avenue, Houghton Regis, Dunstable.

Mammals: D. Anderson, 51 Springfield Crescent, Harpenden, Herts.

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDING 31st DECEMBER 1974

INCOME

<u>SUBSCRIPTIONS</u>	£	
Current year 1974	324	
New Members 1974	65	
Arrears 1973	<u>17</u>	406
 <u>OTHER INCOME</u>		
Donations & Collections	10	
Sale of Journals & Brochures	7	
Surplus on Christmas Social	38	
Surplus on 4 Coach trips	46	
Profit on Coffee Mornings	22	
Sundries	<u>5</u>	128
 <u>INTEREST</u>		
Interest on Deposit Account	102	
Interest on City of Peterborough Bonds	<u>139</u>	241
 <u>TOTAL INCOME</u>		 <u>£775</u>

EXPENDITURE

<u>ADMINISTRATION</u>		
Stationery	81	
Postage	66	
Insurance	8	
Auditor's fee	<u>17</u>	172
 <u>MEETING</u>		
Hire of Halls	75	
Lecturers' Fees & Expenses	7	
Printing of programmes	<u>31</u>	113
 <u>SOCIETY PUBLICATIONS</u>		
Printing Journal	225	
Printing Newsletters	<u>3</u>	228
 <u>MISCELLANEOUS</u>		
Subscriptions to other Societies	14	
Recorders' expenses	5	
Floater to Publicity Committee	<u>30</u>	49
 <u>TOTAL EXPENDITURE</u>		 <u>£562</u>
Excess of income over expenditure		<u>£213</u>

I have examined the above receipts and payments accounts which are in agreement with the books and vouchers of the Society

P. SMITH
Honorary Auditor
Leighton Buzzard.

DRAFT BALANCE SHEET AS AT 31st DECEMBER 1974

FIXED ASSETS

Books & Journals	35	
O.S. Maps	10	
Bird Song Records	8	
Display Boards	15	
Microscope	15	
Tools	3	
Screen	2	88

CURRENT ASSETS

Bank Account	56	
Deposit Account	687	
Cash in Hand	15	
City of Peterborough Bonds	2000	
Debtors	16	2774
		<u>£2862</u>

CURRENT LIABILITIES

Creditors	23
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NET ASSETS

£2839

REPRESENTED BY CAPITAL ACCOUNTS

Balance brought forward	853
Capital introduced	
Theed Pearse Legacy	1773
Excess of income over Expenditure	213
	<u>£2839</u>

I have examined the above balance sheet which is in agreement with the books and vouchers of the Society.

P. SMITH

Honorary Auditor
Leighton Buzzard.

REPORT OF THE COUNCIL

With seven full-Council meetings during the year a considerable amount has been accomplished. Even so a great deal of the ground work has been delegated to sub-committees covering the following areas:- Editorial, Finance, Programme, Publicity, Scientific, and Student, with a special committee appointed to plan all aspects of the Theed Pearse Memorial Lecture and the standing 'Book Committee' continuing to operate. A particularly keen effort has been made by the Publicity Committee in promoting the work of the Society in many ways. It must be partly due to its efforts that the number of new members recruited during the year totalled 92 bringing the current level of membership to 412.

The very full programme of both outdoor and indoor meetings has been extremely well supported and the Council trusts this is an indication that it has met with the general approval of the membership. The various coach trips have been a great success. It must be added that Mrs. Rands has personally put in a great deal of time and effort to arrange these for which it is felt all those members who have enjoyed the trips will want to thank her. The experimental meetings in Biggleswade and Ampthill, the first in these areas for many years, were so successful that further such meetings are a must. The efforts of Mr. Dymond and his colleagues on the sub-committee were much appreciated in the planning and organisation of the Theed Pearse Memorial Lecture given by Mr. Peter Conder, the Director of the R.S.P.B. The new Council will decide whether the lecture will be perpetuated.

Our Recorder of Birds, Mr. P.F. Bonham, unfortunately left the County in August and although his departure was a significant loss to the Society the position has been most ably filled by Mr. B.D. Harding. As a result of the resignation of Mr. P.W. Moles there is a vacancy for a Recorder of Fishes. Two additional Recorders have been appointed during the year - Miss F. Woollen (now Mrs. Davies) for lichens and Mr. D.G. Rands for grasshoppers and crickets.

The student group has continued to develop. At a recent meeting a committee of nine students was elected which will, in conjunction with adult representatives, arrange its own activities. We now have a fairly stable nucleus of enthusiastic juniors and confidence is high that this will continue to expand at a steady controlled rate, provided that sufficient support is forthcoming from adult members.

You may already be aware that, to enjoy taxation privileges, the Society has now been registered as a charity with the Charities Commission. Also during the year we have become affiliated to the Council for Nature, from which we receive and circulate to all members a news-sheet attached to our own newsletters. In November two delegates from the Council represented the Society at a one-day national conference of natural history societies run by the Council for Nature.

In announcing that Mr. H.A.S. Key has decided not to seek re-election as Chairman we would like to record our appreciation of the most faithful service he has given the Society in this sometimes difficult and demanding position for the last two years. He has, however, been re-elected to serve on the Committee. Our Programme Secretary, Mr. D.G. Rands, has also decided not to stand for re-election this year and, although he will undoubtedly continue to support the Society in many ways, his untiring efforts in arranging the programmes and paying such close attention to every detail of organisation will be difficult to follow. Due to increasing commitments at work I shall not be standing for re-election as Secretary.

Finally, the Council wishes to thank everyone connected with the Society for continued support during the year, and hopes that its efforts have met with the full approval of the membership.

D. GREEN, Hon. Secretary

PROCEEDINGS.

INDOOR MEETINGS

312th ORDINARY MEETING, 7th January, Luton. "The Natural History of Lake Neusiedl in Austria" by Mrs. E. Allsopp. Chairman: Mr. P. Bonham.

313th ORDINARY MEETING, 17th January, Bedford. "Trees in Winter and Summer" by Mr. A.W.Guppy. Chairman: Mr. H.A.S.Key.

314th ORDINARY MEETING, 23rd January, Dunstable. "The Deer of Ashridge" by Mr. W.Buckingham. Chairman: Mr. B. Barton.

315th ORDINARY MEETING, 31st January, Luton. "Members Evening". General discussion on natural history and the role of the Society. Chairman: Mr. D.G.Rands.

316th ORDINARY MEETING, 7th February, Bedford. "Recreation and Wildlife at Grafham Water" by Mr. M.Schofield. Chairman: Mr. R.B.Stephenson.

317th ORDINARY MEETING, 13th February, Dunstable. "A Naturalist's Holiday in Spain" by Dr. B.S. Nau. Chairman: Mr. C.Banks.

318th ORDINARY MEETING, 21st February, Luton. "Why I Find Spiders Fascinating" by Mr. T.J. Thomas. Chairman: Mr. D. Green.

319th ORDINARY MEETING, 28th February, Bedford. "Members Evening". Chairman: Mr. A.W.Guppy.

320th ORDINARY MEETING, 6th March, Dunstable. "Bats" by Mr. R. Stebbings of the Nature Conservancy. Chairman: Mr. D. Anderson.

321st ORDINARY MEETING, 11th March, Luton. "The Work of the Forestry Commission" by Mr. J.Gould, a Head Forester. Chairman: Mr. D. Green.

ANNUAL GENERAL MEETING, 21st March, Bedford.

322nd ORDINARY MEETING, 25th October, Bedford. "An Introduction to Fungi" by Mr. A. Ford. Chairman: Miss H.Webb.

323rd ORDINARY MEETING, 31st October, Luton. "Fossil Collecting for Amateurs" by Dr. A.J.Rundle. Chairman: Mrs. E.B. Rands.

324th ORDINARY MEETING, 8th November, Bedford. "Members Evening". Chairman: Mr. R.B.Stephenson.

325th ORDINARY MEETING, 13th November, Dunstable. "The Role of the Field Worker for the Register of Ornithological Sites" by Mr. R.Fuller of the B.T.O. Chairman: Mr. A.J. Livett.

326th ORDINARY MEETING, 18th November, Bedford. "Muntjac" by Dr. Oliver Dansie. Chairman: Mr. D. Anderson.

327th ORDINARY MEETING, 27th November, Biggleswade. Special programme on the natural history of Bedfordshire. Speakers: Mr. H.A.S.Key and Mr. D. Anderson. Chairman: Mr. P.Smith.

328th ORDINARY MEETING, 2nd December, Luton. "How to Start Looking at Moths" by Mr. V. Arnold. Chairman: Mr. T.J. Thomas.

GRAND CHRISTMAS SOCIAL EVENING, 6th December, Holy Trinity Hall, Bedford. M.C: Mr. H.A.S Key.

329th ORDINARY MEETING, 18th December, Dunstable. "Members Evening".
Chairman: Mr. W. Drayton.

FIELD MEETINGS

28th January, R.S.P.B. OUSE WASHES RESERVE. Leader: Mr. P.F. Bonham.
10th February, GRAFHAM WATER. Leaders: Messrs M. Schofield and P.F. Bonham.
21st April, BARTON HILLS. Leader: Mr. A. Ford.
27th April, WYBOSTON GRAVEL PITS. Leader: Mr. P.F. Bonham.
28th April, MAULDEN WOOD. Leader: Dr. B.S. Nau.
5th May, WALTON-ON-THE-NAZE, joint meeting with Northampton Natural History Society. Leader: Mr. T. Pain.
12th May, KINGS WOOD, HOUGHTON CONQUEST. Leader: Mr. A.W. Guppy.
18th May, HARDWICK SPINNEY. Leader: Mr. W. Champkin.
2nd June, SALCEY FOREST. Joint meeting with Northampton Natural History Society.
8th-9th June, MAULDEN WOOD. All-night meeting. Leaders: Mr. C. Banks and others.
16th June, CHICKSANDS WOOD. Leader: Mr. H.A.S. Key.
27th June, THURLEIGH WIND TUNNEL. Leader: Dr. J.G. Dony.
6th July, BARTON HILLS. Leader: Mr. D.G. Rands.
10th July, TOTTERNHOE KNOLLS. Leader: Mr. A. Ford.
14th July, SUNDON QUARRY. Leader: Mrs E.B. Rands. Joint meeting with Northampton Natural History Society.
24th July, BROMHAM HALL. Leaders: Messrs W. Champkin and R. Woolnough.
4th August, ODELL GREAT WOOD. Leader: Mr. A.W. Guppy.
15th August, RIVER IVEL. Evening walk from Biggleswade. Leader: Dr. Nancy Dawson.
24th August, POTTON WOOD. Leader: Dr. J.G. Dony.
1st September, WALBERSWICK AREA OF SUFFOLK. Coach trip.
14th September, BARTON SPRINGS. Leader: Dr. B.S. Nau.
21st September, ODELL GRAVEL PIT AND RIVER OUSE. Leaders: Mr. and Mrs D.G. Rands.
6th October, MAULDEN WOOD. Fungus foray. Leader: Dr. D.A. Reid.
26th October, MONEYPOT HILL. Leader: Mr. A. Ford.
3rd November, WILSHAMSTEAD WOOD. Leader: Mr. J. Gould, Head Forester.
8th December, ROWNEY WARREN. Leader: Mr. A.W. Guppy.

STUDENT ACTIVITIES

The student section of the Society continued to flourish during 1974. A major contribution was made by students to the exhibitions organised by the Society throughout the year. Much of the display material was loaned by them and the posters submitted by them for the poster competition have formed a very colourful part of many of these exhibitions.

The seal expedition to Norfolk organised during 1973, which proved so popular, was repeated on 24 November 1974 and was just as successful. Two boats were hired and everybody was able to go out into Blakeney harbour and see the seals and large numbers of seabirds.

Two other highlights of the year were week-end trips to the New Forest and the bird observatory at Dungeness, the latter being organised by Messrs. Drayton and Harding.

Credit for the success of the student section must go equally to the students themselves, whose enthusiasm is boundless, and to all those senior members of the Society who have given so freely of their time and energies.

Calendar of Events (students) for 1974

6 January	Work party in Maulden Wood
8 January	Luton. 'Ornithology' by Mr. A. Livett.
16 January	Bedford. The basic needs of a Naturalist.
5 February	Luton. 'Zoo Animals' by Mr. A. Outen.
13 February	Bedford. 'Wildfowl of the World' by Mr. R. Wagstaff.
5 March	Luton. 'Fossil Birds' by Mr. G. Osborn.
13 March	Bedford. Birds on slides by Mr. W. Champkin.
9 April	Luton. 'Wild Orchids' by Mr. A. Ford.
17 April	Bedford. 'Birds and butterflies of Malaya' by Mr. D. Manning.
19 May	Field meeting at Woodwalton Fen.
21 June	Week-end field meeting at Dungeness Bird Observatory.
29 June	Field meeting - Sharnbrook to Odell Great Wood.
3 July	Field meeting at Totternhoe Knolls.
27 July	Field meeting at Amptill Park.
13 September	Week-end field meeting in New Forest.
22 September	Field meeting at Great Barford.
28 September	Fungus Foray in Maulden Wood.
1 October	Luton. 'Fungi' by Mr. A. Ford.
12 October	Field meeting - an adventure walk.
16 October	Bedford. 'Orchids' by Mr. A. Ford.
6 November	Luton. Preview talk about Norfolk.
10 November	Field meeting in Maulden Wood.
20 November	Bedford. Colour slides by Mr. W. Champkin.
24 November	Coach trip to Norfolk.
5 December	Luton. 'Spots, scents and trills' by Mr. J. Knowles.
19 December	Bedford. Invitation meeting by Mrs. Sharman.

THE FUNGUS FORAY

The fungus foray, held at Maulden Wood on October 6th, with Dr. D. A. Reid as leader, was exceptionally well supported. Over 70 people attended, including a few visitors from the British Mycological Society.

Insofar as fungus forays are concerned, Maulden Wood seems to have a 'jinx' upon it, for looking back to the account of the previous foray, held there in 1963, the weather then was as bad or even worse, than on the present occasion. However the morning, although dull and dreary was at least dry, and the majority

of species were collected before lunch. In the afternoon the weather deteriorated and rain began.

Wandering through the wood, which consists of mixed deciduous trees and plantations of exotic conifers, fungi did not seem particularly abundant, despite the exceptionally good season. Yet surprisingly in a very short time the list of species soon exceeded the total of the 1963 meeting and by the end of the day had topped the score of any previous foray held in the county.

Reference to the list shows unusually large numbers of species of the following genera: Agaricus(4), Clitocybe (8), Collybia (7), Coprinus (7), Cortinarius(7), Hebeloma (4), Hygrophorus (7), Inocybe (9), Lactarius (9), Mycena (15), Psathyrella (5), and Russula (8) It also shows that a number of species collected are new to the county. Notes on these follow.

Agaricus macrosporus is a large white species, very like the familiar Horse Mushroom (A. arvensis), but is distinguished by its large spores measuring 8.0-12.0 (- 14.0) x 5.5-6.5 (-7.0)u. Another species, which although not new to the county, caused some interest, was A. vaporarius. This was represented by a single, very large, dark brown scaly fruitbody. Like A. langei and A. sylvaticus, it belongs to the group of species with reddening flesh.

Little can be said of the two species of Conocybe which are new to Bedfordshire, since their recognition depends on microcharacters. It is likewise difficult to provide useful comments on the species of Cortinarius since they too are difficult to recognize in the field. C. bicolor is a medium sized species with dark brown hygrophanous cap, which dries remarkably pale. It has a tall whitish stem with a distinct lilac apex and a pointed base. C. bivelus also belongs to the group of species with an hygrophanous cap, but it is a robust fungus. It has an ochraceous cap which becomes minutely scaly toward the margin due to rupture of the surface, a stout bulbous base to the stipe, and a smell of camphor. C. causticus is recognised by its pale ochraceous, slightly sticky cap, and pointed whitish stipe. The surface of the cap has a distinctly bitter taste to the tongue. It is usually placed in the section Myxacium.

C. nemorensis, which belongs in the section Phlegmacium, also caused excitement on account of the beautiful lilac colour, especially of the gills and stipe. The young cap is also lilac but this fades from the centre outward and older specimens are pale cafe au lait with the lilac tint restricted to the margin. This attractive species, like the following, has been found on previous occasions in the county. C. psammocephalus is a small fungus with a pointed umbo. The cap, which is warm ochre-brown, is densely covered with minute erect scales.

Another striking fungus was Hebeloma radicosum, with its large, glutinous, creamy-brown cap and a robust, strongly rooting stipe. It has a smell of bitter almonds.

Of the several species of Hygrophorus, attention may be drawn to H. quietus, which is a fairly large yellow species readily recognised by its oily smell resembling that of Lactarius quietus when bruised. This uncommon fungus has been found in the county on previous occasions.

Species of Inocybe do not usually figure very prominently in foray lists and recognition depends largely on micro-characters. However, I. hirtella, which has a yellowish-brown cap, is distinguished by its smell of bitter almonds, but it may be necessary to keep it in a closed tin for some time before this becomes evident. I. squamata also has a yellowish-brown cap, but this is ornamented with dark brown scales. I. maculata var. fastigiella differs from the typical form of the species in lacking the characteristic silky white patches of veil over the conical brown pileus.

The occurrence of Lactarius britannicus caused the writer some embarrassment for the fruitbodies of this uncommon but widespread species were small and of a particularly brilliant orange colour. As a result, despite having described the species, he failed to recognize it in the field and took it to be L. mitissimus, from which it may be easily separated by the white milk which dries to yellow on a handkerchief.

The smaller Lepiota spp. are not well represented in Bedfordshire. The discovery of L. castanea was therefore of interest. It has brown scales on a yellowish background and is perhaps most liable to confusion with L. fulvella which also occurs in the county. The latter has a cap which is densely radially fibrillose and these fibrils do not pull apart into distinct scales.

Melanoleuca cognata differs from the common M. melaleuca in having salmon coloured gills and in being larger. Nolanea farinolens has a dark coloured cap and smells of meal; it differs from N. sericea in spore characters.

Pluteus is another genus poorly represented in the county. P. lutescens is an attractive little fungus with a brownish wrinkled cap with yellow tints showing through. The stipe is also bright yellow as are the young gills before becoming pinkish as the spores mature.

Finally, of the agarics new to the county mention must be made of Russula farinipes, a species associated with beech. It has rather small, but very firm fruitbodies, with an ivory coloured cap.

Few of the Aphyllophorales were noteworthy with the exception of Polyporus picipes which is recognized by its dark chestnut-coloured cap which has a waxy lustre when dry, its lateral stipe with a black base, and small pores. An unexpected rarity, however, was Thelephora palmata with its small densely fastigate tufts of brown, evil-smelling flattened branches, up to 4 inches high. Reference should perhaps also be made to the large quantity of Clavulina cinerea heavily parasitized by Helminosphaeria clavariarum (in this case represented by the conidial state Spadicoides clavariarum).

The finding of Sebacina epigaea, a greyish hyaline resupinate jelly fungus on soil was also noteworthy. As was the collection of Mutinus caninus, which has apparently not been found in the county since 1904.

In all a total of 191 species were collected of which 18 are new to the county and a further 4 confirm ancient records.

These figures compare with a total of 80 species collected in 1963, of which 14 were new county records and one a confirmation of an existing record.

Agaricus langei (F.H. Møller) F.H. Møller; *A. macrosporus (F.H. Møller & J.Schaeff.) Pilat; A. silvaticus Schaeff. ex Secr.; A. vaporarius (Vitt.) Moser apud Gams; Agrocybe erebia (Fr.) Kuhn. apud Sing.; Amanita muscaria (L. ex Fr.) Hooker; A. phalloides (Vaill. ex Fr.) Secr.; Armillaria mellea (Vahl ex Fr.) Kummer; Bolbitius vitellinus (Pers. ex Fr.) Fr.; Boletus badius Fr.; B. subtomentosus L. ex Fr.; Clitocybe cerussata (Fr.) Gillet; C. bicolor (Pers.) J. Lange; C. flaccida (Sow. ex Fr.) Kummer; C. fragrans (Sow. ex Fr.) Kummer; C. geotropa (Bull. ex St. Amans) Quéf.; C. infundibuliformis (Schaeff. ex Weinm.) Quéf.; C. nebularis (Batsch ex Fr.) Kummer; C. vibecina (Fr.) Quéf.; Collybia butyracea (Bull. ex Fr.) Kummer; C. dryophila (Bull. ex Fr.) Kummer; C. fusipes (Full. ex Fr.) Quéf.; C. maculata (Alb. & Schw. ex Fr.) Kummer; C. peronata (Bolt. ex Fr.) Kummer; C. rancida (Fr.) Quéf.; † C. tuberosa (Bull. ex Fr.) Kummer; Conocybe arrhenii (Fr.) Kits van Wav. [= C. togularis sensu Check List/]; *C. brunneola (Kuhn.) Kuhn. & Romagn.; * C. mesospora Kuhn. - microsporous form; C. rickeniana Sing. ex F.D. Orton; Coprinus atramentarius (Bull. ex Fr.) Fr.; C. comatus

(Mull. ex Fr.) S.F. Gray; C. disseminatus (Pers. ex Fr.) S.F. Gray; C. lagopus (Fr.) Fr.; C. micaceus (Bull. ex Fr.) Fr.; C. picaceus (Bull. ex Fr.) S.F. Gray; C. plicatilis (Curt. ex Fr.) Fr.; *Cortinarius bicolor Cooke; *C. bivelus (Fr. ex Fr.) Fr. sensu Kuhn. & Romagn.; *C. causticus Fr.; C. hemitrichus (Pers. ex Fr.) Fr.; †C. hinnuleus Fr.; C. nemorensis (Fr.) J. Lange; C. psammocephalus (Bull. ex Merat) Fr.; Crepidotus herbarum (Feck) Sacc.; Deconica crobulus (Fr.) Romagn.; Entoloma porphyrophaeum (Fr.) Karst.; Comphidius rutilus (Schaeff. ex Fr.) Lundell; Gymnophilus junonius (Fr.) P.D.Orton; G. penetrans (Fr. ex Fr.) Murr.; Hebeloma crustuliniforme (Bull. ex St. Amans) QuéL.; H. radicosum (Bull. ex Fr.) Ricken; H. sacchariolum QuéL.; H. sinapizans (Paulet ex Fr.) Gillet; Hygrophoropsis aurantiaca (von Wulfen) Fr.) Maire apud Martin-Sans; Hygrophorus ceraceus (Wulf. ex Fr.) Fr.; H. cossus (Sow. ex Berk.) Fr.; H. leucophaeus (Scop.) Fr.) Karst.; H. niveus (Scop.) Fr.; H. pratensis (Pers. ex Fr.) Fr.; H. psittacinus (Schaeff. ex Fr.) Fr.; H. quietus Kuhn.; Hypholoma fasciculare (Huds. ex Fr.) Kummer; Inocybe asterospora QuéL.; I. cervicolor (Pers. ex Pers.) QuéL.; I. corydalina QuéL.; I. geophylla (Sow. ex Fr.) Kummer; I. geophylla var. lilacina Gillet; * I. hirtella Bres.; * I. maculata Boud. var. fastiella Atk.; I. pyriodora (Pers. ex Fr.) Kummer; * I. squamata J. Lange; Laccaria amethystea (Bull. ex Merat) Murrill; L. laccata (Scop. ex Fr.) Cooke; Lacrymaria velutina (Pers. ex Fr.) Konrad & Maubl.; Lactarius blennius (Fr. ex Fr.) Fr.; L. britannicus Reid; L. glyciosmus (Fr. ex Fr.) Fr.; L. pyrogalus (Bull. ex Fr.) Fr.; L. quietus (Fr.) Fr.; L. rufus (Scop. ex Fr.) Fr.; L. subdulcis (Pers. ex Fr.) S.F. Gray; L. tabidus Fr.; L. turpis (Weinm.) Fr.; * Lepiota castanea QuéL.; L. rhacodes (Vitt.) QuéL.; Marasmiellus ramealis (Bull. ex Fr.) Sing.; Marasmius epiphyllus (Pers. ex Fr.) Fr.; * Melanoleuca cognata (Fr.) Konrad & Maubl.; M. melaleuca (Pers. ex Fr.) Murr.; Mycena aetites (Fr.) QuéL.; * M. bryophila Vogl.; M. epipterygia (Scop. ex Fr.) S.F. Gray; M. flavoalba (Fr.) QuéL.; M. galericulata (Scop. ex Fr.) S.F. Gray; M. galopus (Pers. ex Fr.) Kummer; M. galopus var. candida Lange; M. leucogala (Cooke) Sacc.; M. metata (Fr. ex Fr.) Kummer; M. polygramma (Bull. ex Fr.) S.F. Gray; M. pura (Pers. ex Fr.) Kummer; M. speirea (Fr. ex Fr.) Gillet; M. tenerrima (Berk.) Sacc.; M. viscosa (Secr.) Maire; M. vitilis (Fr.) QuéL.; * Nolanea farinolens P.D. Orton; Oudemansiella radicata (Rehlan ex Fr.) Sing.; Paxillus involutus (Batsch ex Fr.) Fr.; Pholiota gummosa (Lasch) Sing.; Pluteolus aleuriatus (Fr. ex Fr.) Karst.; Pluteus cervinus (Schaeff. ex Fr.) Kummer; * P. lutescens (Fr.) Bres.; P. phlebophorus (Ditmar ex Fr.) Kummer; † Psathyrella atomata (Fr.) QuéL.; P. gracilis (Fr.) QuéL.; P. hydrophila (Bull. ex Merat) Maire; P. obtusata (Fr.) A.H. Smith; P. tephrophylla Romagn.; Russula atropurpurea (Krombh.) Britz.; R. cyanoxantha (Schaeff. ex Secr.) Fr.; * R. farinipes Romell apud Britz.; Russula fellea (Fr.) Fr.; R. fragilis (Pers. ex Fr.) Fr.; R. mairei Sing.; R. nigricans (Bull. ex Mérat) Fr.; R. ochroleuca (Pers. ex Secr.) Fr.; Stropharia aeruginosa (Curt. ex Fr.) QuéL.; S. inuncta (Fr.) QuéL.; S. semiglobata (Batsch ex Fr.) QuéL.; Tricholoma saponaceum (Fr.) Kummer var. squamosum (Cooke) Rea; T. sejunctum (Sow. ex Fr.) QuéL.; T. terreum (Schaeff. ex Fr.) Kummer; Tricholomopsis rutilans (Schaeff. ex Fr.) Sing.; Tubaria autochthona (Berk. & Br.) Sacc.; T. furfuracea (Pers. ex Fr.) Gillet; Volvariella speciosa (Fr. ex Fr.) Sing.

Chaetoporus euporus (Karst.) Bond. & Sing.; Coriolus versicolor (L. ex Fr.) QuéL.; Ganoderma applanatum (Pers. ex Wallr.) Pat.; Heterobasidion annosum (Fr.) Bref.; Leptotritium semipileatus (Peck) Pouz.; * Polyporus picipes Fr.; Tyromyces caesius (Schrad. ex Fr.) Murr.; T. kymatodes (Rostk.) Donk; Xylodon versiporus (Pers.) Bond.

Clavaria acuta Fr.; Clavulina cinerea (Fr.) Schroet.; C. cristata (Fr.) Schroet.; Clavulinopsis helvola (Fr.) Corner; C. pulchra (Peck) Corner.

Calyprella capula (Holmskj. ex Fr.) QuéL.; Chondrostereum purpureum (Pers. ex Fr.) Pouz.; Coniophora puteana Fr.; Cristella farinacea (Pers. ex Fr.) Donk; C. sulphurea (Pers. ex Fr.) Donk; Peniophora quercina (Pers. ex Fr.) Cooke;

Phlebia merismoides Fr.; Radulomyces confluens (Fr.) Christ.; Stereum gausapatum (Fr.) Fr.; S. hirsutum (Willd. ex Fr.) S.F. Gray; S. sulphuratum Berk. & Rav.; *Thelephora palmata Fr.; T. terrestris Ehrh. ex Fr.; Vuilleminia comedens (Nees ex Fr.) Maire.

Auricularia auricula-judae [Bull.] Fr.; A. mesenterica (Dicks. ex S.F. Gray) Pers.

Calocera cornea (Batsch ex Fr.) Fr.; C. viscosa (Pers. ex Fr.) Fr.; Dacrymyces stillatus Nees ex Fr. [= D. deliquescens (Bull. ex St. Amans) Duby].

*Sebacina epigaea (Berk. & Br.) Bourd. & Galz.

Lycoperdon foetidum Bon.; L. perlatum Pers.; L. pyriforme Schaeff. ex Pers.; †Mutinus caninus (Huds. ex Pers.) Fr.; Scleroderma verrucosum Bull. ex Pers.; S. vulgare Fr.

Coryne sarcoides (Jacq. ex Fr.) Tul.; Helvella crispa Fr.; Hymenoscyphus caudatus (Karst.) Dennis; H. fructigenus (Bull. ex Merat) S.F. Gray; H. herbarum (Pers. ex Fr.) Dennis; H. scutula (Pers. ex Karst.) Phillips; Otidea onotica (Pers.) Fuck.

Nectria cinnabarina (Tode ex Fr.) Fr.; Sphaerotheca pannosa (Wallr. ex Fr.) Lév.; Xylaria hypoxylon [L.] Grev.

Ptychogaster albus Corda; Spadicoides clavariarum (Desm.) Hughes.

Lycogala epidendrum Buxb.; Trichia affinis de Bary; T. varia Pers.

DEREK A. REID

† = confirmation of existing record

* = new county record

REPORTS OF RECORDERS

Flowering Plants and Vascular Cryptogams

This was another full year of recording based on the tetrad system. The average number of records made for the complete tetrads is now little short of that obtained in Hertfordshire when the Flora of that county was published in 1967. With additions which should be made in 1975 there is hope that the publication of the Bedfordshire plant atlas early in 1976 will give a clear account of plant distribution in the county.

I thank again all those mentioned in recent reports for their continued assistance and welcome the help of two young botanists, Andrew Phillips of Maulden and Douglas Willison of Ravensden. Mr. A. Martin made an outstanding discovery of a new station for Field Cow-wheat.

During the past three years fewer alien species new to the county have been found on our rubbish tips and in the fields dressed with wool shoddy. It would appear that few such additions to the flora are likely to be made in the near future. This makes it more appropriate that a revised assessment will be made of the county flora as a whole in the Atlas.

J.G. DONY.

BRYOPHYTES

The very dry start and wet end to 1974 coupled with a heavily committed recorder severely restricted Bryological fieldwork during the year. In consequence there were no major finds though the number of records continued to make steady progress and all the grid squares now have at least thirty recorded species.

My thanks are due to Dr. N. Dawson, Mrs. E.B. Rands and especially Mr. J.C. Gardiner who have continued to supply specimens and records.

Grid squares TL/06, TL/15, TL/16, TL/23 and TL/25 are still very much underworked and I would be very grateful for any material from these areas.

ALAN R. OUTEN

METEOROLOGY

1974 was not a year that can be recalled with any degree of pleasure from the weather point of view, for although we were spared the rigours of a cold winter, the spring was chilly and very dry, the summer was duller and cooler than usual and a very wet autumn effectively ended the prolonged period of drought which had persisted for two years.

January began with three or four days of very cold weather but was otherwise generally mild, with several stormy periods, notably on the 16th. The first half of February was dull and wet, but the second half brought dry cold easterly weather, leading on to somewhat wintry conditions at the beginning of March. Late March and early April included the year's longest dry spell, with days that began with fog and became bright and sunny later, although still dominated by easterly and northerly winds which persisted throughout May. The third week of the latter month, in particular, produced some very pleasant fine and warm days.

Mid-June was very warm and culminated in the heavy storms of the 16th following the hottest day of the year in some places. Late June and July were unsettled, and early August had further thundery activity, notably on the 4th (as those who took part in the abortive excursion to Odell Wood can testify) and again on the 8th. The best of the August weather was from the 19th to the 24th inclusive, and a similar period in mid-September, ending on the 20th, comprised the last of the summer.

The remainder of the autumn was remarkably wet and stormy, November having only five days without rain. The 14th November was the wettest day of the year in those places which escaped the storms earlier in the year.

The beginning of December saw a brief respite to dry and mild conditions, but this was followed by a cold spell in the second week. Christmas Day was notable for its strong, almost gale-force, wind and this persisted until the 28th, but the year closed with the establishment of an intense anticyclone over the mouth of the English Channel, giving mild dry conditions over southern England.

TEMPERATURE

The mean air temperature for the whole year was fairly close to average, around 9.5 deg. C or 49 deg. F., but this conceals the fact that the winter months, January, February, November and December were considerably above average, particularly the latter, whereas the remaining eight months, March to October inclusive, were all colder than average. It was only in October, however,

that the deficiency was particularly large; in recent years we have had a succession of mild and genial autumns, but in 1974 the October mean was nearly 3 deg. C or over 5 deg. F. below normal and in most places December was warmer, on average, than either of the two preceding months.

In Bedford the warmest day of the year was 6th June with 27.7 deg. C. but on no other day did the temperature exceed 80 deg. F. or 26.7 deg. C. The coldest night was that of the 1st January, with temperatures as low as - 5.3 deg. C. equal to 23.5 deg. F. in some places. There was no day in the year in which the temperature remained below freezing-point throughout the twenty-four hours.

RAINFALL

All stations recorded a total rainfall for the year varying between 25 and 30 per cent above average. This, in itself, was not exceptional, but the rainfall of the second half of the year has been exceeded only twice before in this century, in 1912 and 1960. In these other two instances, as in 1974, the rainfall of the three spring months, March to May, was very low and last year's total for that period was the lowest of the three.

April was everywhere the driest, and November the wettest, month. The only drought of the year comprised the seventeen days, 25th March to 10th April inclusive.

The two longest wet periods were both of sixteen days duration, precipitation occurring on each day from 1st to 16th February and from 6th to 21st November, both inclusive.

The heaviest day's rainfall at Cardington was that of 17th November, with 20.5 mm and this was closely followed by the two 'thunderstorm days' of 16th June and 4th August, with 20.1 and 19.5 mm. At Silsoe, 24.1 mm was recorded on 17th November, but this was easily surpassed by the 39.9 mm at Dunstable and the 34.2 mm at Luton on the same day.

THUNDER

Thunder was heard on only eight occasions during the year. Three storms produced appreciable rainfall; the prolonged storms on the evening of 16th June gave 20.1 mm at Cardington, 25.4 mm at Dunstable and 24.4 mm at Luton, whilst the heavy midday storm of 4th August produced nearly as much, 19.5 mm, 24.8 mm and 25.5 mm. There were 12.8 mm on the stormy afternoon of 8th August at Cardington, but far less in the south of the county.

An unusual occurrence was a hailstorm accompanied by thunder at 4 a. m. on 11th December.

SNOW

There was very little snow during the year. Slight falls early on 1st March rapidly melted. There were sleet and snow showers on 4th March and again early on the morning of 12th December, but amounts were small.

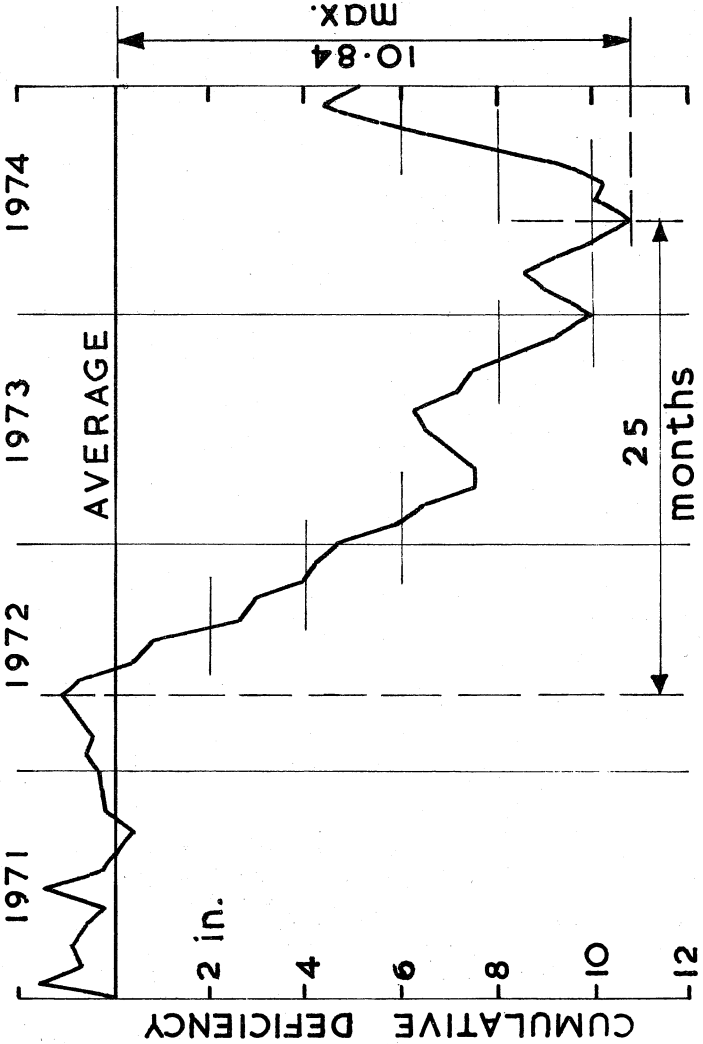
SUNSHINE

Sunshine was, as might be expected, below average throughout the year, except during September. March, April and October all received less than 80 per cent of normal and November was exceptionally dull, with only about 70 per cent of its usual quota. The year as a whole had about 7 per cent less sunshine than average.

Optical Phenomenon

A well-defined sun-pillar was visible at sunset in Bedford on 3rd August and a photograph was obtained. In common with the solar halo and 'mock suns', sun-pillars are caused by the refraction of light by ice crystals in the upper atmosphere but are much less frequent. They are often regarded as precursors of bad weather; certainly, in the present instance, it was followed by the heavy thunderstorms of the following day and of four days later.

A twenty-five months dry period



Deviation of Cumulative Rainfall from Average 1971 - 1974
(Cardington totals, reckoned from 1st January 1971)

R A I N F A L L for 1 9 7 4

	Bedford	Cardington	Dunstable	Husborne Crawley
January	50.2	59.3	94.0	64
February	58.5	61.3	97.0	63
March	20.0	21.3	39.1	39
April	12.9	12.9	11.2	16
May	20.9	26.9	37.8	33
June	66.9	66.9	77.6	68
July	48.6	47.8	25.5	41
August	84.3	82.0	87.7	110
September	86.2	82.6	118.6	109
October	95.8	91.6	106.9	90
November	103.4	93.0	119.8	121
December	29.5	28.4	38.8	34
Total mm	677.2	674.0	854.0	788
(1973)		(415.6)	(467.7)	(477)

	Luton	Sandy	Silsoe	
January	85.2	65.3	62.0	
February	83.1	56.1	60.7	
March	42.4	34.0	29.9	
April	15.1	14.0	11.9	
May	37.6	28.7	34.2	
June	95.2	67.6	63.2	
July	27.8	34.8	34.7	
August	96.8	92.7	86.2	
September	116.1	89.6	87.0	
October	114.6	97.5	98.6	
November	120.6	105.7	95.1	
December	35.1	31.0	27.3	
Total mm	869.6	715.0	690.8	
(1973)	(503.1)	(437.1)	(416.1)	

Bedford (Chaucer Road), Dr. D.M. Jeffreys
 Cardington (R.A.F.), per Mr. L.A.Speed
 Dunstable (Periwinkle Lane), per Mr. K.J.Reynolds, Lee Valley Water Co.
 Husborne Crawley (Woburn Experimental Farm), from 'Rothamsted
 Experimental Station, Report for 1974'
 Luton (Runley Wood), Lee Valley Water Company
 Sandy (R.S.P.B.) per Mr. J.N. Dymond, Warden.
 Silsoe (N.I.A.E., Wrest Park), per Mr. Alan Hunter.

A.W.GUPPY

The rainfall for both 1970 and 1971 was close to the long-term average, not only for the years as a whole, but also on a month-by-month basis, so that there was no conspicuous excess or deficiency at any period during the two years. This can be most easily demonstrated by comparing the total actual rainfall measured from some arbitrary starting date, such as January 1st, with the hypothetical total which would have been registered if each month had received its average rainfall over the same period. Thus, at Cardington, the average rainfall for the period January to June inclusive is 9.89 inches, whereas the total actually measured during the first six months of 1971 was 11.31 inches so that the cumulative rainfall reckoned from January 1st 1971 was 1.42 inches in excess of average. By the end of 1971 the excess was a mere 0.33 in. and the cumulative total continued to show a surplus until the end of May 1972 when it amounted to 0.61 in.

From June 1972 onwards, however, this changed to a deficiency which steadily increased each month, until at the end of March 1973 it amounted to 7.62 inches. There were then four months of recovery, but in August the deficiency began to increase again, to reach 10.00 inches at the end of the year. There was another slight recovery in January and February 1974, but by the end of May the deficiency reached its maximum value of 10.84 inches.

From then onwards until the end of November the tendency was reversed, each individual month showing a rainfall in excess of average. The net result at the end of 1974 was that the deficiency had been reduced to 5.15 inches; over the four years 1971 to 1974 inclusive Cardington had received 81.57 inches of rain instead of the 86.72 inches which might have been expected.

The twenty-five months period of dry weather is shown very convincingly in graphical form. It will be extremely interesting to see what happens during the remainder of 1975; at the time of writing, the deficiency has been cut still further to less than 4 inches. (Note: On account of the older records all being given in inches, it was decided to prepare the above statement in these units. The rainfall tables for the year are, of course, now metric.)

A.W.GUPPY

MOLLUSCA

Work on recording the Mollusca of Bedfordshire on a tetrad basis was considerably hampered during 1974 by adverse weather conditions. In the first half of the year very little rain fell and it proved difficult to find any land snails and even harder to find slugs. Attention was therefore focused on surveying as many freshwater habitats as possible during this dry spell.

The second half of the year, by contrast, was very wet, and even slugs and snails can drown if there is too much surface water. A slug foray was held in Maulden Wood by the Conchological Society of Great Britain & Ireland on 2nd October 1974. The most notable Mollusc recorded was Limax cinereoniger Wolf, which had also been recorded in the wood during the all night field meeting held 8/9 June 1974.

An exciting discovery was made during a field meeting at Wilshamstead Wood on 3rd November 1974. A colony of Pomatias elegans (Muller) was discovered living on a slope under Yew trees. This species is found in chalk and limestone habitats and, in Bedfordshire, its distribution had been confined to the chalk in the south of the county and limestone outcrops in the Odell area. Investigation into the geology of the area showed that a very small outcrop of

limestone occurred here. This colony is separated from any other known colony by at least 10 miles and it would be interesting to know if any species from other groups present in the wood show a similar distribution.

E.B. RANDS

LEECHES AND FLATWORMS

Although recording has continued during 1974 at a reasonable rate no new species have been added to the list published in "The Bedfordshire Naturalist" No. 28.

E.B. RANDS

LEPIDOPTERA

Early in the year it was encouraging to see good numbers of hibernated species enjoying the sunshine; these included (14) Brimstone Gonepteryx rhamni. L. (33) Peacock Nymphalis io. L. (37) Small Tortoiseshell Aglais urticae. L. These duly produced reasonably good broods in season. Odd (38) Comma Polygona c-album. L. were reported from Maulden Wood. Vic Arnold reported (65) Chalk-hill Blue Lysandra coridon. Poda. from Grid Squares SP/92/R, SP/91/Z, TL/02/P. (63) Brown Argus Blue Aricia agestis. Schiff. from TL/12/E and SP/91/Z. (27) Marbled White Melanargia galathea. L. from SP/91/Z. Tom Thomas reported (52) Purple Hairstreak Thecla quercus. L. from Odell Wood.

(9) Orange-tip White Anthocharis cardamines. L. normally a roadside species had a wonderful season, and could be seen on the wing with other species of 'Whites' even in town gardens. (30) Red Admiral Vanessa atalanta. L. was not very evident in contrast with 1973 when it abounded. (31) Painted Lady Vanessa cardui. L. was not recorded at all.

A new moth record (667) Common Orange-underwing Archicaris parthenias. L. was found at Maulden Wood. I received a rather worn female specimen caught by Mrs. Rands on 7 April which laid 5 eggs, 3 of which hatched. Unfortunately the tiny larvae all died within 3 days. A single larva of (671) Greater Grass Emerald Pseudoterpna pruinata. Hufn. found on gorse (Ulex) near Maulden Wood was brought to me by Bill Champkin. This larva fed on both the flowers and foliage of gorse but developed a fungus and died before pupating.

Several interesting records were received from David Manning who runs a M.V. Trap at Sharnbrook; these were mainly single specimens and included: (133) Frosted Green Lutestring Polyploca ridens. L. (515) Alder Dagger Apatele alni. L. (550) Common Sawyer Brachionycha sphinx. Hufn. (571) Satellite Eupsilia transversa. Hufn. (621) Silver Eight Polychrisia moneta. F. (686) False Mocha Cosymbia porata. L. (812) Brindle-barred Yellow Acasis viretata. Hübn.

I am indebted to the following for records and specimens: Mrs. B. Rands, Messrs V. Arnold, C.W. Burton, W.G. Champkin, A. Ford, D.J. King, D. Manning, B. Nau, T. Peterkin, B. Squires, T. Thomas.

Bracketed numbers and English Names as Entomologists' Gazette Vols. 10 & 11. (I.R.P. Heslop M.A. Published 1960).

W.J. CHAMPKIN

DRAGONFLIES

This was my second season as the County Dragonfly Recorder, and I have been still concentrating on recording by 10 km. squares and by sites, rather than by tetrads. The summer, if you remember, was not remarkable for its hot, still, sunny days, and dragonflies were not much in evidence. I have only managed to obtain records for 5 new 10 km. squares, bringing the total to 85 records of 14 species. The commonest species seem to be the two small blue damselflies Enallagma cyathigerum and Ischnura elegans, the big brown hawkler dragonfly Aeshna grandis and the big blue one Aeshna cyanea.

I am extremely grateful for specimens, records and photographs shown to me by three other recorders, Tom Thomas, Bernard Nau and Alan Outen and by two student members David Lawrence and Andrew Dassington. Could I make a special plea for 1975 records from the south of the County, especially squares TL 02 (Luton and Dunstable) and SP 92 (Heath and Reach). The Biological Records Centre at Monks Wood published preliminary distribution maps of dragonflies in May 1974. This showed the County especially the south and west to be very under-recorded. Out of 21 ten km.squares in Bedfordshire only 6 had any post 1961 records and 8 squares had no records at all.

NANCY DAWSON

BUGS (Hemiptera - Heteroptera)

During 1974 my attention has been concentrated on Maulden Woods and this has resulted in a long list of species from this locality; eight of these are additions to the lists of Bedfordshire bugs in refs. 1 and 2. The list from Maulden totals 68 species of 13 families, the best represented family being the plant bugs, Miridae, with 32 species. There is also a good list of aquatic species from the ponds, 15 species, including 8 species of Lesser Water-boatmen, Corixidae.

The additions to the Bedfordshire list are as follows:

BERYTINIDAE: Cymus glandicolor Hahn - fairly common on the roadside nature reserve at Maulden Wood, 12 July 1974, where it was swept from Carex.

TINGIDAE: Acalypta brunnea (Germar) - a single specimen found in moss beside a ride in the NW corner of Maulden Wood, 19 February 1974.

MIRIDAE: Bryocoris pteridis (Fallen) - this is the Fern Bug; on 21 July 1974 it was fairly common in Maulden Wood on Broad Buckler Fern, and on 4 August it was found on the same fern in Odell Great Wood.

Megalocoleus pilosus (Schrank) - the host plant of this bug is Tansy. The bug was found to be numerous on the flowers of Tansy at Leagrave, Maulden Wood, and Westoning in early August. The flowers are so damaged by the bugs that the entire flower head is often killed; this is so conspicuous that the bug can even be located whilst driving along the road.

Phylus palliceps Fieber - a single specimen was swept from Hazel in Maulden Wood on 7 July 1974.

Psallus diminutus (Kirschbaum) - one male was swept from Creeping Thistle on the verge of the main ride in Maulden Wood, 11 August 1974. Identification was checked by examination of the genitalia.

Dicyphus pallicornis(Meyer-Dur) - the host plant of this bug is Foxglove and since there is only a handful of plants of this species in Maulden Wood it was quite surprising to find the bug on one of these, 18 August 1974.

Pilophorus perplexus D. and S. - this southern species is an arboreal predator of aphids and other small invertebrates. T. Thomas obtained one specimen from a corrugated cardboard trap on a tree trunk in Maulden Wood, 1 August 1974.

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- 1) Nau, B.S 1974. A checklist of Bedfordshire Hemiptera-Heteroptera. Beds. Nat. Hist. Soc. Ann. Rep. No.27, pp 48-50.
- 2) .. Bugs: some additions to the list of Bedfordshire bugs (Hem.-Het)/ Ibid, No.28, p.16.

B.S.NAU

BIRDS

INTRODUCTION

1974 was an exceptional year for some species. In the spring there was a remarkable influx of Black-necked Grebe at Blunham GP's which coincided with a good passage of Arctic Tern. Birds of Prey were well represented with at least seven records of Sparrowhawk. A female Marsh Harrier was sighted in May and a female Montagu's Harrier was present in June. Ring-tailed Harriers and Rough-legged Buzzards frequented the Pegsdon Hills in the latter part of the year whilst Short-eared Owls were recorded on nine occasions. Great grey Shrikes were reported 13 times.

Due to the exceptionally mild winters duck numbers were comparatively low. Winter Wildfowl counts over our larger waters, in conjunction with the Wildfowl Trust, were once again organised on a monthly basis. Breeding records of the Anatidae were few, as was the breeding success of several other species, notably Little ringed Plover, Snipe, Redshank, Little Owl, Kingfisher, Whinchat. All observers are asked to report on the breeding activities of our less common species.

The common bird census was continued by some observers and some field work, on a tetrad basis, was carried out on the breeding birds.

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SYSTEMATIC LIST FOR 1974

Species recorded in Bedfordshire during 1974 and not included in the systematic list are: Kestrel Falco tinnunculus, Red-legged Partridge Alectoris rufa, Partridge Perdix perdix, Pheasant Phasianus colchicus, Lapwing Vanellus vanellus, Common Gull Larus canus, Stock Dove Columba oenas, Great Spotted Woodpecker Dendrocopos major, Skylark Alauda arvensis, Carrion Crow Corvus corone corone, Rook Corvus frugilegus, Jackdaw Corvus monedula, Magpie Pica pica, Jay Garrulus glandarius, Great Tit Parus major, Blue Tit Parus caeruleus, Coal Tit Parus ater, Marsh Tit Parus palustris, Willow Tit Parus montanus, Long-tailed Tit Aegithalos caudatus, Nuthatch Sitta europaea, Treecreeper Certhia familiaris, Wren Troglodytes troglodytes, Song Thrush Turdus philomelos, Blackbird Turdus merula, Goldcrest Regulus regulus, Dunnock Prunella modularis, Starling Sturnus vulgaris, Goldfinch Carduelis carduelis, Linnet Acanthis cannabina, Chaffinch Fringilla coelebs, Reed Bunting Emberiza schoeniclus, House Sparrow Passer domesticus.

The following abbreviations are used in the text: SF = Sewage farm, CHP = Chalk pit, CLP = Clay pit, GP = Gravel pit, L = Lak, NR = Nature reserve SP = Sand pit.

Great Crested Grebe Podiceps cristatus

Thirty-two pairs in breeding territory producing a reported thirty-five young. Breeding success probably under-reported. Forty counted at Vicarage Farm CLP, thirty at Stewartby L in February and thirty at Stewartby L during the latter part of the year.

Black-necked Grebe Podiceps nigricollis

An unprecedented influx at Blunham GP's on the 18th April when eight were counted. Numbers gradually dwindled with the last one remaining to the 1st May. All were in full summer plumage, and two were paired and displaying on the 28th April. The reason for their appearance is open to speculation.

Little Grebe Tachybaptus ruficollis

Fourteen pairs during breeding season but only one young raised. Obviously vastly under-reported.

Cormorant Phalacrocorax carbo

As in 1973 good numbers were reported from Wyboston GP's. Two adults and three immatures on the 19th January, one adult, three second-winter, one immature on the 17th February, one adult, two second-winter, two juveniles on the 16th March, three plus, including one juvenile, on the 22nd March, two adults, one second-winter and one first-winter on the 31st March, five on the 7th April, one adult on the 6th June, single 21st December. An immature at Vicarage Farm CLP from the 21st July until the 20th October and at Brogborough CLP was probably the same bird. Ten, probably of this species were seen flying south-east over East Hyde Sewage Works on the 28th October. A single was seen flying over the outskirts of Dunstable on the 29th November and perched on a water tower.

Grey Heron Ardea cinerea

Six occupied nests were reported from Southill on the 17th February. Two nests at Ickwell Bury. Breeding success undetermined.

White Stork Ciconia ciconia

A single free-flying bird seen at Studham and in the vicinity of Whipsnade Zoo from the end of December into March 1975. Another reported from Linslade in February 1975 was presumably the same bird. The origins are unknown but probably an escape.

Mallard Anas platyrhynchos

The maximum at selected waters from January to March and from September to December are tabulated. In this and the following tables '-' indicates that no count was received or no birds were seen.

	Jan	Feb	Mar	Sept	Oct	Nov	Dec
Southill Lake	430	180	27	335	520	500	520
Stewartby L./ Vicarage FmCLP.	138	6	-	650	49	87	194
Brogborough CLP	58	20	-	45	50	520	155
Luton Hoo Lake	242	35	41	192	199	-	188
Woburn Park	122	-	-	4	-	100	286
Odell/Harrold GP's	-	-	-	-	122	205	175

Teal Anas crecca

The maximum monthly counts Jan/Mar and Sept/Dec. are listed below.

	Jan	Feb	Mar	Sept	Oct	Nov	Dec
Southill Lake	120	85	21	30	43	35	80
Stewartby L./ Vicarage FmCLP	26	4	-	30	110	6	6
Brogborough CLP	-	-	-	-	-	-	-
Luton Hoo Lake	25	6	13	1	21	-	8
Woburn Park	-	-	-	-	-	-	-
Odell/Harrold GP's	-	-	-	-	-	-	39

One hundred at Bedford SF on 1st January. Breeding season records of a pair at Brogborough CLP. on the 14th July although no evidence of breeding.

Garganey Anas querquedula

One pair at Wyboston GP's on the 22nd March.

Gadwall Anas strepera

Single males at Harrold GP's on the 6th January and the 16th February. Four at Wyboston GP's on the 3rd February. Single male at Blunham GP's on the 20th April and singles at Harrold GP's and Brogborough CLP on 15th and 29th December respectively.

Wigeon Anas penelope

Highest count 19 at Vicarage Farm CLP on the 28th December, with nine at Brogborough CLP the same day. Sixteen at Harrold GP's during February. Up to 23 at four localities during March.

Pintail Anas acuta

Single males at Battlesden L. on the 18th January and Luton Hoo Park on the 15th September. Five south-east over The Lodge, Sandy, on the 23rd November.

Shoveler Anas clypeata

One breeding record of single juvenile at Girtford GP during July. Recorded throughout the year, with the maximum count five at Southill L. on the 16th November.

Mandarin Duck Aix galericulata

Recorded throughout the year at Woburn Park and Eversholt L. with a maximum of 19.

Red-crested Pochard Netta rufina

A female at Wyboston GP's on the 19th January. The possibility of an escape cannot be ruled out.

Tufted Duck Aythya fuligula

Fifty-five young reported, which is a decrease of twenty-six from 1973. Winter counts from selected waters as follows:

	Jan	Feb	Mar	Sept	Oct	Nov	Dec
Southill L.	11	14	10	-	1	6	15
Stewartby L./ Vicarage FmCLP	13	10	-	50	5	-	3
Brogborough CLP	12	15	15	25	6	15	38
Luton Hoo Lake	69	14	12	8	22	-	41
Woburn Park	47	50	-	14	-	44	53
Odell/Harrold GP's	-	-	-	-	12	32	53

Highest counts away from these localities include one hundred plus at Blunham GP's on the 1st January and 28th April, 290 19th January and 191 17th February at Wyboston GP's.

Pochard Aythya ferina

Two breeding records of six young at Luton Hoo L. and five young at Brogborough CLP. Tabulated counts as follows:

	Jan	Feb	Mar	Sept	Oct	Nov	Dec
Southill L.	-	-	-	-	26	54	80
Stewartby L./ Vicarage FmCLP	215	240	-	20	55	-	13
Brogborough CLP	11	12	70	-	-	110	165
Luton Hoo Lake	6	4	8	-	-	-	8
Woburn Park	-	-	-	-	-	17	1
Odell/Harrold GP's	-	-	-	-	17	21	41

Goldeneye Bucephala clangula

Maximum of nine at Stewartby L. on the 10th February up to 27th April when four also at Vicarage Farm CLP, a pair remaining until 27th May. Autumn records at three localities with seven at Stewartby L. on the 31st December.

Red-breasted merganser Mergus serrator

Single red-head at Stewartby L. 3rd-17th February.

Goosander Mergus merganser

Two females at Stewartby L. on the 23rd February and a single male at Woburn Park on the 15th December.

Shelduck Tadorna tadorna

Single at Brogborough CLP on the 30th January. Single at Dunstable SF on the 23rd February, pair there on the 13th April increasing to three on the 15th, remaining until the 24th April. Single at Vicarage Fm CLP on the 20th May. Single adult at Dunstable SF 30th-31st December.

Greylag Goose Anser anser

Six young raised, Felmersham NR, and attempted breeding Brogborough CLP. Reported from seven localities throughout year.

Canada Goose Branta canadensis

A bird shot in Luton Hoo Park had been ringed on the 15th July at Knebworth Park, Herts. No attempted breeding in Luton Hoo Park but two pairs bred at Brogborough CLP. with four young being raised. A pair raised five young in West Park, Silsoe. Recorded throughout the year at normal localities.

Whooper Swan Cygnus cygnus

Adult at Wyboston GP's 6th-19th January. Adult at Dunstable SF on the 10th November.

Bewick's Swan Cygnus bewickii

Two at Leighton Buzzard SP on the 19th January. Thirty-two west over The Lodge, Sandy on the 30th October.

Buzzard Sp Buteo Sp.

Single unidentified reported from Luton Hoo Park during August.

Rough-legged Buzzard Buteo lagopus

Up to two present in the Pegsdon Hills area from October until February 1975.

Sparrowhawk Accipiter nisus

Seven recorded throughout the year, with several unconfirmed reports. A vast increase over previous years.

Harrier sp. Circus sp.

Two at Barton-le-Cley on 29th September and single on Pegsdon Hills 10th November.

Marsh Harrier Circus aeruginosus

Adult female Brogborough CLP. 12th May.

Montagu's Harrier Circus pygargus

Adult female Streatley on the 9th June.

Hobby Falco subbuteo

Single Old Warden 9th June. One seen regularly at Gamlingay during July. Singles at The Lodge, Sandy 15th July and 5th September respectively.

Golden Pheasant Chrysolophus pictus

Recorded at Charle Wood and Maulden Wood. A Tree Sparrow's (*Passer montanus*) nest in a box at Maulden Wood consisted almost entirely of feathers of this species.

Lady Amherst's Pheasant Chrysolophus amherstiae

Twelve pairs resident in Luton Hoo Park. Also present during year in Charle Wood, Maulden Wood, Woburn Park and Flitwick Plantation.

Water Rail Rallus aquaticus

Recorded at Flitwick Moor, East Hyde SF (two during January), Chalton SF, Wyboston GP's, Maulden Woods and Luton Hoo Park.

Corncrake Crex crex

Single calling in marshy area near Washers Wood during June.

Coot Fulica atra

Highest count 536 at Wyboston GP's on 19th January and 400 at Chimney Corner CLP on the same date. Breeding proved in several localities.

Oystercatcher Haematopus ostralegus

Single Vicarage Farm CLP 17th August.

Ringed Plover Charadrius hiaticula

Spring passage and breeding: Wyboston GP's, one pair 16th March; one pair with three small chicks 27th April; one adult with four eggs 9th June and four small young on 16th June (second brood of pair 27th April); one pair (of 16th March) with one large young 9th June; singles Bedford SF 24th March, 22nd April, 30th May; maximum 14 at Vicarage Farm CLP on 20th May where recorded from 1st May to 2nd June. One pair produced two young at the latter locality.

Autumn passage: singles recorded at Bedford SF and Vicarage Farm CLP but twelve at former locality on 9th August.

Little Ringed Plover Charadrius dubius

Breeding reported from Vicarage Farm CLP, two fully fledged young; two pairs Wyboston GP's, one with two young. Present during breeding season at Sandy GP's; Bedford Marina; Houghton Regis ChP; Blunham GP's with a maximum in the county of ten pairs. Although breeding success, presumably not totally reported. Maximum autumn passage total six Bedford SF 31st July.

Golden Plover Pluvialis apricaria

Recorded until 30th April. Large concentrations as follows: 224 Copt Hall, Luton, 11th January, 150 Henlow GP's 23rd February, 400 Pirton area 15th April, 260 Broom 24th April. Autumn records of 600 Rowney Warren 24th November and 74 Biggleswade Common 19th December.

Turnstone Arenaria interpres

Three Vicarage Farm CLP 2nd May.

Snipe Gallinago gallinago

Only reported from eight localities, with one report during breeding season from Wyboston GP's. Maximum number recorded 220 at Bedford SF on 25th October. Smaller concentrations elsewhere.

Jack Snipe Lymnocyptes minimus

Three Bedford SF 1st January present to 30th March when four observed. Singles East Hyde 28th February and Sandy GP on 22nd April.

Four at Bedford SF on the 27th October seen until end of the year with a maximum of ten on the 5th November.

Woodcock Scolopax rusticola

Thirty reported roding in spring from ten localities. Up to five shot in a day at Luton Hoo Park where keepers reported vastly higher numbers than in previous years.

Curlew Numenius arquata

Singles over Luton 1st March, Bedford SF 5th April, Blunham GP's 18th and 23rd April, Luton Hoo Park 10th May and over Biggleswade 21st October.

Whimbrel Numenius phaeopus

Three flying over Maulden Woods at dusk 3rd May, singles Brogborough CLP 12th May and 1st August, single Vicarage Farm CLP 25th August.

Bar-tailed Godwit Limosa lapponica

Five Vicarage Farm CLP 27th April.

Green Sandpiper Tringa ochropus

Winter records of singles at Bedford SF 25th January and Astwick SF during February, with three at former locality on 19th January. Three spring records and then recorded from 22nd June to end of year. Maximum of ten at Bedford SF 8th September being also recorded in smaller numbers at seven localities.

Wood Sandpiper Tringa glareola

Single Bedford Marina 29th May.

Common Sandpiper Tringa hypoleucos

Spring passage: two Blunham GP's 30th April and Dunstable SF 7th May. Singles Bedford SF, Fenlake, Chalton SF and East Hyde SF.

Autumn passage: recorded at eleven localities with maximum nine Bedford SF 12th August and eight Vicarage Fm CLP. Last reported Girtford GP 10th November.

Redshank Tringa totanus

Seventeen pairs present during breeding season although only four chicks reported. Non-breeding records of twenty-one at Bedford SF on 22nd February, six Vicarage Farm CLP 23rd February and lesser numbers from four locations during February, March and December.

Spotted Redshank Tringa erythropus

Singles Dunstable SF 9th April, Vicarage Farm CLP 27th April, 1st May and two there 5th May. Singles Stewartby L. 7th August and Bedford SF 8th and 10th September.

Greenshank Tringa nebularia

Spring passage: Singles Blunham GP's 26th April and Vicarage Farm CLP 19th May.

Autumn passage: Vicarage Farm CLP two 4th, 17th, 25th and 26th August. Single flying over Brickhill, Bedford, 20th August and up to eight, Bedford SF 8th September with seven there, 10th September.

Dunlin Calidris alpina

Spring passage: Vicarage Farm CLP two early birds 3rd March and then three 7th April, four on 15th April, twenty on 12th May, decreasing to five on 14th and four on 20th. Singles Sandy GP on 22nd April and 15th May, Bedford SF 5th April and Dunstable SF 9th April.

Autumn passage and winter: return started 16th July with eight at Vicarage Farm CLP. Seven there 1st August and three on 8th being last recorded on 15th September. Bedford SF from 7th August with maximum five on 5th November. Four there on 14th December. Seen singly at three locations.

Curlew Sandpiper Calidris ferruginea

Two Vicarage Farm CLP 9th August.

Sanderling Calidris alba

Four Vicarage Farm CLP 27th May and single Bedford SF 8th September.

Ruff Philomachus pugnax

Spring passage: Singles Girtford GP and Vicarage Farm CLP on 12th and 15th April respectively.

Autumn passage: Singles Vicarage Farm CLP 29th July and 15th September. Singles Bedford SF 28th July and 7th August. Two there 9th August, four on 31st, eleven on 4th September, eight on 10th reducing to singleton by 28th. Singles Dunstable SF 13th October and Vicarage Farm CLP 29th December.

Great Black-backed Gull Larus marinus

Two hundred Dunstable SF on 25th October.

Lesser Black-backed Gull Larus fuscus

Three pairs Brogborough CLP where breeding suspected but not proved. One hundred and fifty there of all ages on 21st July. Eight hundred Dunstable

SF on 25th October.

Herring Gull Larus argentatus

Two at Brogborough CLP on 30th January were displaying large yellow patches on their breast. Subsequent enquiries revealed that they had been trapped at Guildford SF as part of a B.T.O. project (in December). Breeding suspected at Brogborough CLP. One hundred Dunstable SF 25th October.

Glaucous Gull Larus hyperboreus

Adult Biggleswade 1st December.

Little Gull Larus minutus

Adult Stewartby L. 28th April and singles there 12th July and 13th October.

Black-headed Gull Larus ridibundus

One hundred and forty pairs bred Brogborough CLP with thirty to forty pairs at Vicarage Farm CLP.

Kittiwake Rissa tridactyla

Adult Blunham GP 1st May.

Black Tern Chlidonias niger

Two Dunstable SF 8th - 9th May. Ten Stewartby L. 4th August with one there on 26th August, five 3rd September and one 10th September. Good passage noted on 15th September as follows: Fifteen Stewartby L, five Woburn Park, two Southill L, seven Dunstable SF, five Brogborough CLP. Two Sandy GP 18th September.

Common/Arctic Tern Sterna sp.

Three north over Girtford GP 27th April, seven east, very high over Blunham GP's on 28th April, and ten Stewartby L 5th May.

Common Tern Sterna hirundo

Passage: Seventeen at Blunham GP's on 22nd April, three at Wyboston GP's 24th April, one Sandy GP 31st July, three Girtford GP 6th August, one Southill L 15th September. Seven adults and four juveniles Wyboston GP's on 26th July.

Breeding: A pair frequenting Brogborough and Vicarage Farm CLP's from 16th - 21st July were seen carrying fish but no evidence of breeding. A pair at Wyboston GP's from 27th April until 16th June but no breeding attempt due to high water level causing a lack of sites.

Arctic Tern Sterna paradisaea

A remarkable passage through Blunham GP's with seventeen on 22nd April, thirty nine 23rd April and then nil until 27th when eight seen. They were seen to leave after sunset each evening, so each day's totals were new birds. Thus, a total of at least sixty four birds were involved. Five at Stewartby L. 27th - 28th April.

Puffin Fratercula arctica

A juvenile was found on the road at midnight near Leighton Buzzard on 17th September and released on gravel pits at Heath and Reach the following day. Although there was no apparent body damage it floundered on release and subsequently died on 22nd.

Woodpigeon Columba palumbus

Two thousand flew north over Galley Hill on 18th May.

Turtle Dove Streptopelia turtur

First 30th April at The Lodge, Sandy, and last two East Hyde 17th September.

Collared Dove Streptopelia decaocto

Two hundred and fifty on outskirts of Dunstable on 29th December and one hundred and fifty at Sewell on 31st December.

Cuckoo Cuculus canorus

Early record of one at The Lodge, Sandy 10th April, main influx between 20th - 23rd April. Last seen 1st September in Luton Hoo Park.

Barn Owl Tyto Alba

Recorded in seventeen localities with breeding reported from only one.

Little Owl Athene noctua

Reported from twenty three localities but little evidence of breeding.

Tawny Owl Strix aluco

Widespread with breeding proved at several sites.

Long-eared Owl Asio otus

Reported from two areas.

Short-eared Owl Asio flammeus

A good crop of records with three on the Pegsdon Hills in January and present there during November - December. Singles Fenlake, Bedford 15th November, Brogborough CLP 16th November, The Lodge, Sandy 21st November and Stanford 21st December.

Nightjar Caprimulgus europaeus

Early record of single at Maulden Woods 26th April. Seven pairs present during breeding season in Maulden Wood, Old Warden, Warden Warren, Chicksands Wood and Charle Wood. A nest with two eggs in Charle Wood was deserted due to the activities of a photographer.

Swift Apus apus

First 16th April flying over Luton town centre and then not until 4th May when single over Putnoe. Main influx around 8th - 11th May with one hundred

Brogborough CLP 12th May. Good feeding parties in July with two hundred at Vicarage Farm CLP and one hundred Brogborough CLP on 16th, three hundred near Dunstable SF on 19th, two hundred and fifty Luton Hoo on 23rd, and one hundred Bromham Hall on 24th. Last recorded 16th - 17th September over Bedford.

Kingfisher Alcedo atthis

Reported from 16 localities but breeding activity from only one.

Lesser Spotted Woodpecker Dendrocopos minor

Sixteen pairs reported.

Wryneck Jynx torquilla

One frequented a garden in Aspley Guise from 30th August - 14th September. Two other unconfirmed reports received for the same period. On 3rd October one was picked up in Luton but subsequently died.

Swallow Hirundo rustica

First on 14th April with singles at Sandy GP and Brogborough CLP. Seen at two localities up to 5th November with last 8th November at Cranfield.

House Martin Delichon urbica

Two Whitehill 9th April and ten Girtford GP 13th April. Fifteen East Hyde 28th October decreasing to last 8th November. Two at The Lodge, Sandy 5th November and five south there 25th November.

Sand Martin Riparia riparia

First Barkers Lane 5th April. A notably late and poor spring passage. Last Girtford GP 28th September.

Hooded Crow Corvus corone cornix

Singles Brogborough CLP 23rd February and 12th April.

Mistle Thrush Turdus viscivorus

A post breeding gathering of forty-six at West Park, Silsoe on 25th August.

Fieldfare Turdus pilaris

Large flocks recorded late into spring: forty-two Wyboston GP's on 24th April with thirty-two there on 27th. Seven Newton Blossomville 2nd May and two Astwood 7th May (Bucks border). Five hundred Pirton area (Herts border) 21st April.

First autumn record, seventeen at Bedford on 3rd October. Several thousand were recorded moving west over Bedford on 25th October. Four hundred Kempston 3rd November and two hundred and fifty Sewell 31st December.

Redwing Turdus iliacus

Last spring record of single Maulden Woods 26th April. First autumn 2nd October over Luton with one hundred plus Mowsbury Hill on 3rd. Two

hundred Ickwell 17th October.

Ring Ouzel Turdus torquatus

Male, Brickhill Pastures, Maulden 5th May.

Wheatear Oenanthe oenanthe

Spring passage: First 19th March on outskirts of Luton and then recorded at eleven localities up to 26th May.

Autumn passage: First 12th August and then at seven localities to 28th September.

Stonechat Saxicola torquata

Early part of year, single at Wyboston GP's on 18th February. Single male Dunstable SF on 15th September increasing to two male and one female on 20th October, remaining until end of year. A pair East Hyde on 23rd October, a female on 27th October, and a single on 19th December. Male Girtford GP 24th November, male Fenlake 26th November. Pair Brickhill, Bedford 17th November with a female there on 22nd. Male Lewsey Farm, Luton on 4th, 12th, and 25th November. Pair there on 11th December.

Whinchat Saxicola rubetra

Recorded in breeding season on Dunstable Downs and Millbrook. Breeding success not known. Passage birds from 25th August to 15th September at five locations.

Redstart Phoenicurus phoenicurus

Singles at The Lodge, Sandy 2nd May and near Sundon 21st August. Four pairs bred successfully in the Aspley Heath/Charle Wood area.

Black Redstart Phoenicurus ochruros

Breeding again successful at Luton site with two broods of 3 being raised.

Nightingale Luscinia megarhynchos

Migrant at The Lodge, Sandy 30th April. Present during breeding season: One pair Biggleswade Common where bred successfully, three pairs Home Wood, Northill, two pairs Potton Wood, one pair Chicksand Wood, two pairs Ravensden Wood, two/three pairs Old Warden, and single singing Felmersham.

Grasshopper Warbler Locustella naevia

Twelve singing males reported from ten localities during breeding season.

Reed Warbler Acrocephalus scirpaceus

Only eleven singing birds recorded. No valid arrival/departure dates.

Sedge Warbler Acrocephalus schoenobaenus

First 13th April Girtford GP. No relevant departure dates.

Blackcap Sylvia atricapilla

Male heard singing in garden at Bedford on 1st February and seen again on 6th. First arrivals 14th April with two in song at Fancott spinney. Last reported 22nd September in Luton Hoo Park. Female present in two areas of Biggleswade on 13th November and 10th December, probably involving the same bird.

Garden Warbler Sylvia borin

First 30th April at The Lodge, Sandy. No departure dates.

Whitethroat Sylvia communis

First 15th April at Streatley and last 15th September at Houghton Conquest. Numbers still relatively low.

Lesser Whitethroat Sylvia curruca

Apparent increase in breeding pairs. Whether this is due to the paucity of Whitethroat which could be the dominant species or an actual increase is open to speculation.

Willow Warbler Phylloscopus trochilus

First 27th March at The Lodge, Sandy and last Luton Hoo Park 22nd September.

Chiffchaff Phylloscopus collybita

First Deadmansey Wood, Studham on 23rd March with four there on 25th. Main influx from then. Last 24th September in Luton Hoo Park. Wintering bird at Bedford SF 14th - 15th December.

Wood Warbler Phylloscopus sibilatrix

Four pairs in the Aspley Heath/Charle Wood area. Singles at The Lodge, Sandy 17th/18th May, and Redstone Hill Sandy 31st May - 6th June.

Firecrest Regulus ignicapillus

A pair located at the 1972 site. Breeding success unknown.

Spotted Flycatcher Muscicapa striata

First Maulden Woods 6th May and last two in Luton Hoo Park on 24th September.

Pied Flycatcher Ficedula hypoleuca

One to two at The Lodge, Sandy from 19th August to 24th September.

Meadow Pipit Anthus pratensis

Forty Dunstable SF 15th September.

Tree Pipit Anthus trivialis

Eight pairs recorded during breeding season.

Water Pipit Anthus spinoletta spinoletta

One at East Hyde on 27th October.

Pied/White Wagtail Motacilla alba

One-hundred and fifty Pied Wagtail flew west over East Hyde on 7th January to roost. Birds of the subspecies Motacilla alba alba (White Wagtail) recorded on four occasions during the year.

Grey Wagtail Motacilla cinerea

Singles in early part of year at eight localities. Two pairs with singing males located along River Lea at East Hyde and one pair at Chalton SF during February/March but none appeared to have summered and bred. Singles at ten localities in the autumn but two present at East Hyde until year end.

Yellow Wagtail Motacilla flava

First two at Girtford GP on 31st March and last three at Bedford SF on 24th September.

Great Grey Shrike Lanius excubitor

Singles as follows: Girtford GP 4th January, Harrold GP's 6th January, Flitwick Moor 20th January, 9th February and 22nd December, The Lodge, Sandy 5th and 11th November, 5th and 19th December, Edlesborough 26th October, Biggleswade 3rd November, Old Warden Tunnel 22nd September, Maulden Wood 31st December.

Red-backed Shrike Lanius collurio

Two Blows Downs 18th May.

Hawfinch Coccothraustes coccothraustes

Singles Whipsnade Zoo 21st - 22nd February, Luton Hoo Park 4th June, The Lodge, Sandy 20th December.

Greenfinch Carduelis chloris

One thousand five hundred roosting at The Lodge, Sandy during December.

Siskin Carduelis spinus

Flocks in early part of year as follows: Nine Luton Hoo 1st January with five on 20th, twenty in Alders Alnus glutinosa at Ickwell Bury 9th January, twenty at Campton 12th January with three hundred there on 13th decreasing until 13th March. Twenty Flitwick Moor 17th February, twenty Southill Park 17th February. Autumn flocks of twenty-six at The Lodge, Sandy 14th September with singles at three localities.

Redpoll Acanthis flammea

Two hundred and fifty feeding on Birch crop Betula pendula in Stockgrove Park. Well established as breeding species in the County with two recently fledged young being fed in suburban area of Bedford.

Crossbill Loxia curvirostra

Two at The Lodge, Sandy 27th February.

Brambling Fringilla montifringilla

Winter flocks of more than fifty as follows: one hundred and fifty Campton 23rd January, five hundred near Flitwick 2nd February, one hundred plus at Pulloxhill 3rd March, one hundred and fifty Deadmansey Wood, Studham 29th March and 3rd April. Fifty Barton Hill Farm 1st December. Small flocks from ten localities throughout year.

Corn Bunting Emberiza calandra

Thirty near Luton Airport on 7th March increasing to fifty by 14th.

Yellowhammer Emberiza citrinella

One hundred and forty Copt Hall, Luton on 20th January.

Tree Sparrow Passer montanus

One hundred Bedford marina works on 24th March. Flocks fifty plus at Brogborough CLP and Copt Hall, Luton on 23rd February and 22nd September respectively.

B.D.HARDING

MAMMALS

The number of records obtained for the year was at a high level, although slightly down on the previous year in both the number of records obtained and the number of species.

Tetrad records were obtained for a total of 24 species, with a single record being obtained for the Fat Dormouse (Glis Glis), this being the first time it has been recorded in the county since this series of records were started. The Fat Dormouse was expected to be located in Bedfordshire, probably in the Whipsnade area. The new record comes from Sandy, which is a surprise as it is miles to the east of the species known territory. The seven species not recorded in 1974 were: Water Shrew, Daubenton's and Noctule Bats, Dormouse, Yellow-necked Mouse, Otter and Red Deer. The lack of the bat records is probably due to insufficient catching activities, while the other species are known to be very scarce or of local distribution only, and cannot be expected to be found every year. The highest number of new tetrad records was again of the common species, Rabbit, Brown Hare, Brown Rat and Mole, with the low number of new tetrad records being obtained for, Long-eared Bat, Fat Dormouse, Pygmy Shrew and Pipistrelle Bat. This shows that there are still plenty of gaps in the distribution maps that normal observation will obtain records for, and that even the common species have not yet been recorded over their full territory.

Last year, mention was made of the low level of Badger records, but due to the work of a number of members, this position has improved during 1974. A total of 22 new tetrad records was obtained to add to the seven records from previous years. This work is continuing, and detail maps are drawn of each sett, as well as notes on its use and number of occupants. The records and information are all passed on to the National Badger Survey and my thanks go to Mr. Richard Woolnough and the many other workers who have helped in this work.

There are still several new species that may be found to be in the county, particularly amongst the bats. There are several reports of unknown deer being about, and if these can be confirmed, they may also add new records.

The distribution maps printed below, show the records for all species obtained from 1971 to the end of 1974. The maps are divided into tetrads - 2 Km squares - and each filled in square shows a confirmed record for some time in that period. The maps therefore show distribution and not density of the species.

The records show that there are still many areas of the county that have not been fully checked, particularly around the edges, and north of Bedford. The maps should therefore be considered only as records obtained, and not as accurate limits of the species coverage, although there must be some relationship between the two.

It is interesting to study the way some species are found in both towns and countryside, while others are found in only one environment. Again other species are very local in distribution, or confined to special habitat such as water or woods.

The most commonly recorded species is Rabbit, followed by Hedgehog, Mole, Brown Hare and Brown Rat. Many species are under-recorded, due to problems of obtaining records, and this should be remembered when looking at the maps.

My thanks go to all the people listed below, non-members underlined, who have contributed to the records:-

D. Anderson, C. Banks, R. Bird, P. Bonham, C. Carpenter,
M. Clark, N. Dawson, B. Clutton, J. Dony, A. Ford, B. Frewin,
R. Frith, J. Green, M. Green, P. Green, D. King, D. Lawrence,
J. Messer, B. Mills, E. Mills, B. Nau, T. Peterkin, A. Phillips,
P. Pilcher, B. Rands, D. Rook, T. Rylie, H. Scott, M. Seaman,
A. Summerfield, T. Thomas, M. Tilstone, R. Woolnough,
D. Wright.

DAVID ANDERSON

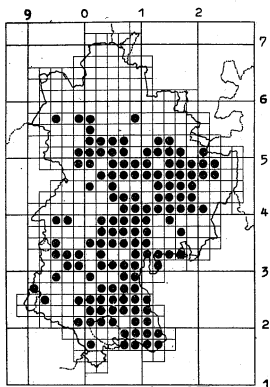


Fig. 1 Hedgehog *Erinaceus europaeus* (L.)

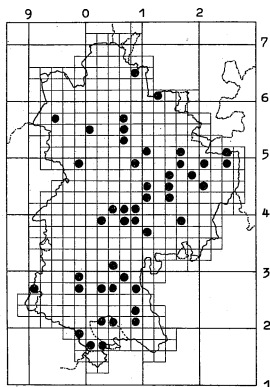


Fig. 2 Common Shrew *Sorex araneus* (L.)

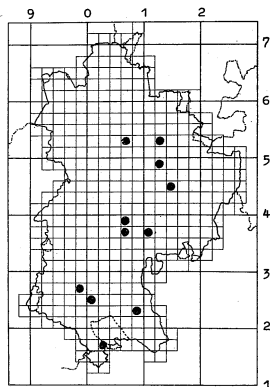


Fig. 3 Pigmy Shrew *Sorex minutus* (L.)

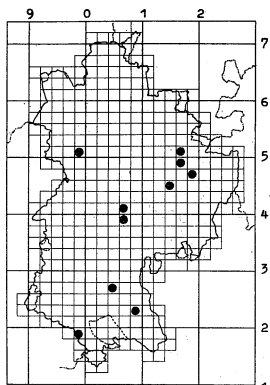


Fig. 4 Water-Shrew *Neomys fodiens* (Pennant)

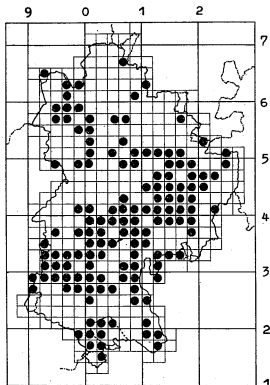


Fig. 5 Mole *Talpa europaea* (L.)

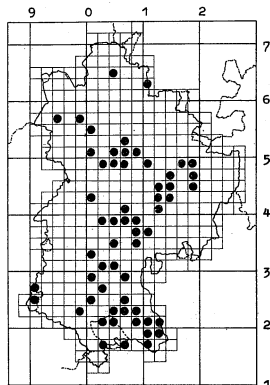


Fig. 6 Bat (Spp.)

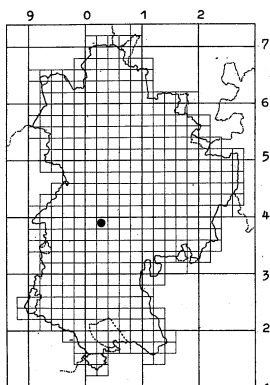


Fig. 7 Daubenton's Bat *Myotis daubentoni* (Kuhl)

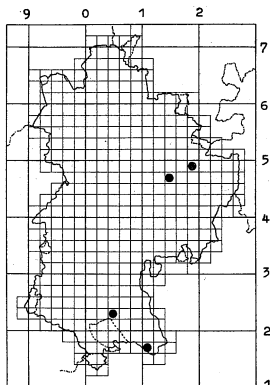


Fig. 8 Long-Eared Bat *Plecotus auritus* (L.)

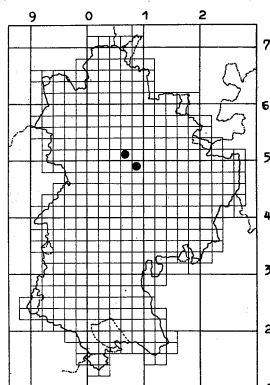


Fig. 9 Noctule Bat *Nyctalus noctula* (Schreber)

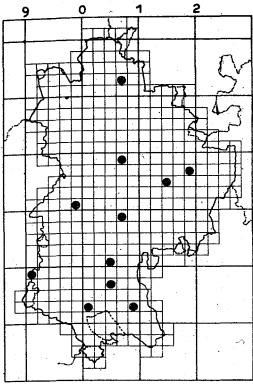


Fig. 10. Pipistrelle Bat *Pipistrellus pipistrellus* (Schreber)

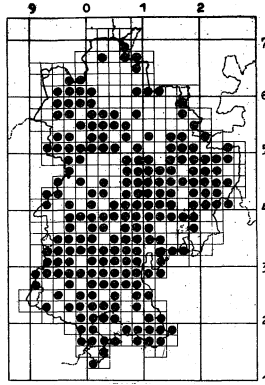


Fig. 11. Rabbit *Oryctolagus cuniculus* (L.)

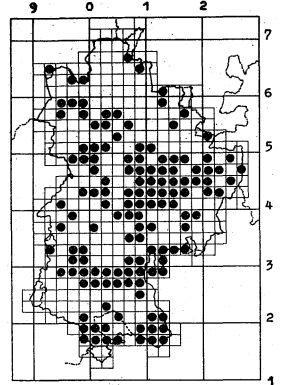


Fig. 12. Brown Hare *Lepus capensis* L.

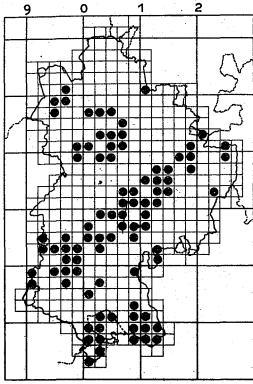


Fig. 13. Grey Squirrel *Sciurus carolinensis* (Gmelin)

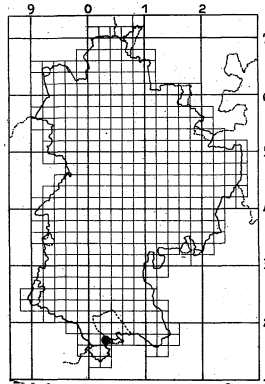


Fig. 14. Domoose *Muscardinus avellanarius* (L.)

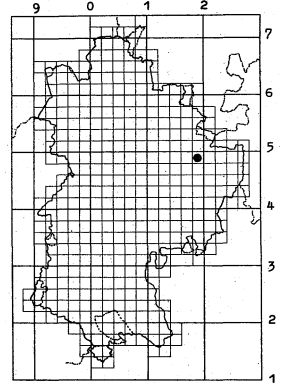


Fig. 15. Fat Domoose *Glis glis* (L.)

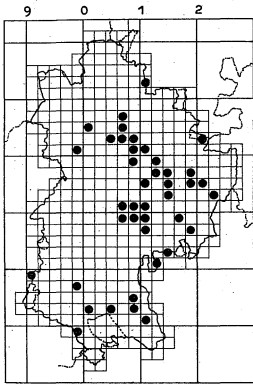


Fig. 16. Short-Tailed Vole *Microtus agrestis* (L.)

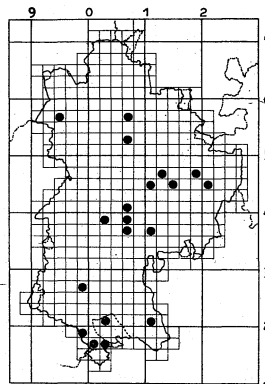


Fig. 17. Bank Vole *Clethrionomys* (Schreber)

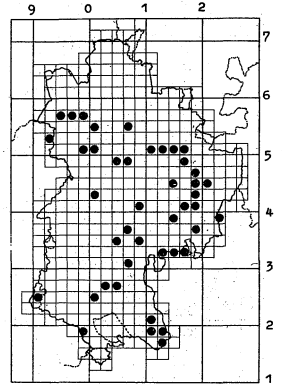


Fig. 18. Water-Vole *Arvicola terrestris* (L.)

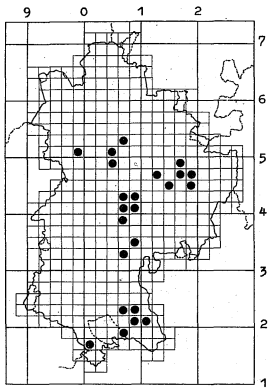


Fig. 19. House-Mouse *Mus musculus* (L.)

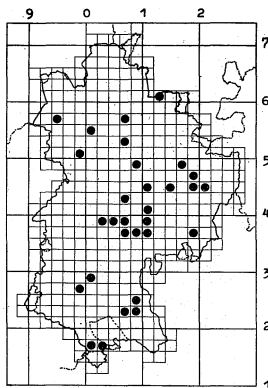


Fig. 20. Wood-Mouse *Apodemus sylvaticus* (L.)

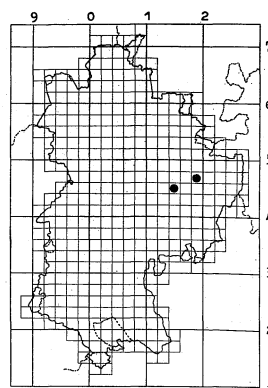


Fig. 21. Yellow-Necked Mouse *Apodemus flavicollis* (Melchior)

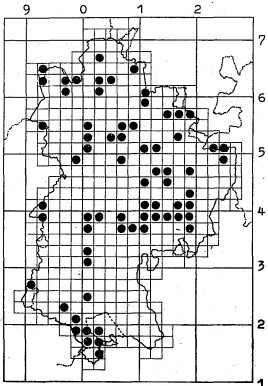


Fig. 22. Harvest-Mouse *Micromys minutus* (Pallas)

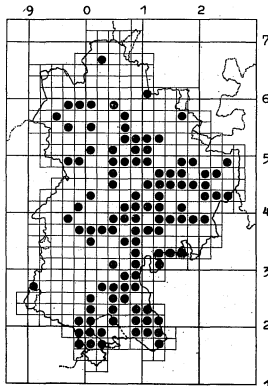


Fig. 23. Brown Rat *Rattus norvegicus* (Berkenhout)

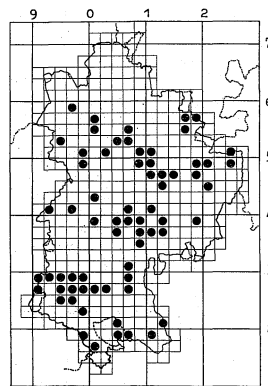


Fig. 24. Fox *Vulpes vulpes* (L.)

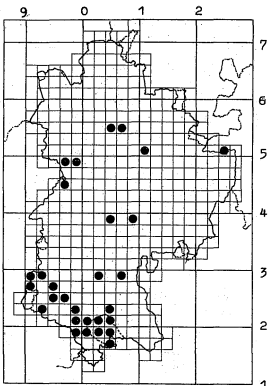


Fig. 25. Badger *Meles meles* (L.)

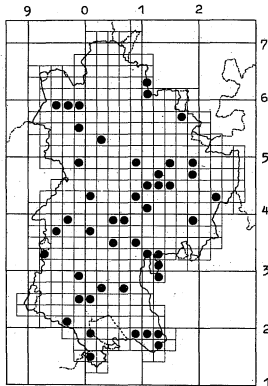


Fig. 26. Stoat *Mustela erminea* (L.)

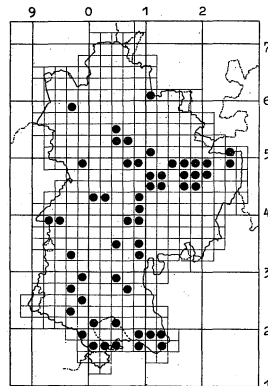


Fig. 27. Weasel *Mustela nivalis* (L.)

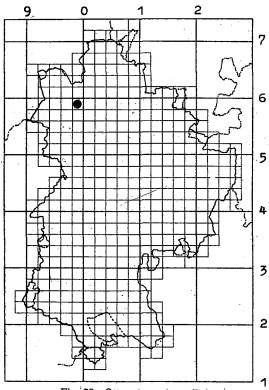


Fig. 28. Otter *Lutra lutra* (L.)

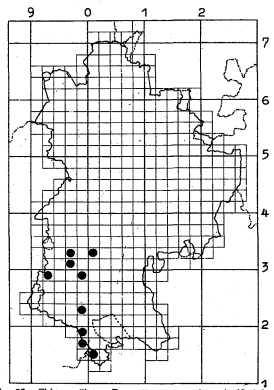


Fig. 29. Chinese Water-Deer *Hydropotes inermis* (Swinhoe)

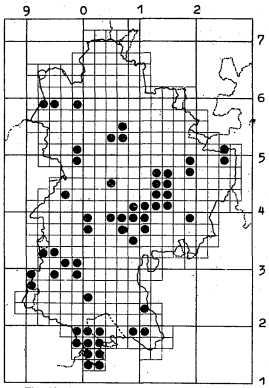


Fig. 30. Muntjac *Muntiacus reevesi* (Ogilby)

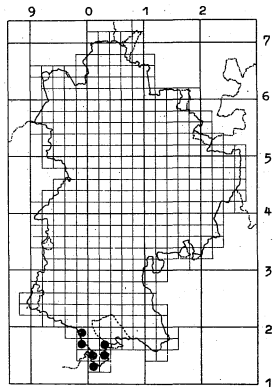


Fig. 31. Fallow Deer *Dama dama* (L.)

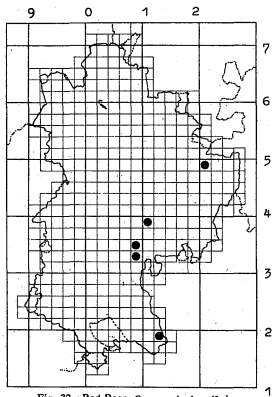


Fig. 32. Red Deer *Cervus elaphus* (L.)

THE MOSSES AND LIVERWORTS OF FLITWICK MOOR

by Alan Outen

Flitwick Moor is but a small portion of a once extensive marshy area on the lower greensand belt of mid-Bedfordshire. The area has gradually dried out leaving isolated remnants, of which Flitwick moor is the largest and most spectacular. It is, by common consent, the site of greatest natural history interest within the county and for this reason was classified as a "Site of special Scientific Interest". Part of it is now a nature reserve managed by the Beds. and Hunts. Naturalists Trust.

The 'moor' includes birch woodland, alder carr and rough meadowland. The Bryological interest is considerable and has been well documented over the last hundred years.

Saunders did much valuable work especially between 1882 and 1904 and many of his specimens are preserved in Luton museum.

T. Laflin and P. Taylor, who wrote respectively, the accounts of mosses and liverworts in Dony: "Flora of Bedfordshire" 1953, made an extensive study of the area which has also been visited on occasions by other well-known Bryologists from all over Britain.

My own studies on the Bryophyte flora of the moor began in 1971. A total of 100 species have now been recorded here, comprising 80 mosses and 20 liverworts. Of this total 93 species have been seen within the last fifteen years and in the course of the past four years I have myself seen 78 species here. No other area in Bedfordshire of comparable size has anything like this variety.

The wet, acid conditions have favoured growth of Sphagnum spp. which has resulted in the production of a considerable depth of peat, which was at one time dug commercially. Eight species of Sphagnum are recorded, one of which S. girgensohnii is nationally uncommon, especially in the south.

There is nowhere else in Bedfordshire where Sphagnum grows in anything like this quantity or variety. Single species showing rather stunted growth occur in very limited quantity around Heath and Reach whilst at Wavendon Heath (VC 24) Beds, five species occur, two of which are different from the Flitwick species. This means that one third of the British species of Sphagnum are recorded for Bedfordshire, (though not for V.C.30).

Two species of Acrocladium, now very rare here and growing nowhere else within V.C.30 grow in amongst the Sphagnum. A. stramineum is recorded for Bucks. but for no other neighbouring county. A. cordifolium is more common and is recorded for four neighbouring counties.

This is also now the only site within the county for Aulacomnium palustre, (which also grows in amongst the Sphagnum), Dicranum polysetum, (nationally rare, though also recorded for Huntingdonshire), and Drepanocladus exannulatus, (also recorded for only one neighbouring county, in this case Hertfordshire, but not uncommon especially in the north of the country).

Growing underneath the Sphagnum is a unique, white, saprophytic liverwort Cryptothallus mirabilis which was only discovered in Britain in 1948 presumably because it had been overlooked. It was first recorded here in 1967 but is present in only limited quantity and in the last two years repeated search has failed to find it. It is also recorded for Buckinghamshire but still appears to be generally rather uncommon.

Other liverworts for which this is the only Bedfordshire site are Riccia fluitans and Gymnocolea inflata.

Many other species which grow well here are scarce elsewhere in the county, including, among the mosses, Plagiothecium undulatum, (one of five species of this genus recorded for the moor); Polytrichum aloides, (also one of five species of its genus recorded here); Bryum pseudotriquetrum, Dicranum majus, Dicranella schreberiana and D. cerviculata, together with the liverworts Ptilidium ciliare, Lepidozia reptans, Cephaloziella rubella, Cephalozia bicuspidata, C. connivens and Diplophyllum albicans.

By no means uncommon as a weed on plant pots in greenhouses, but much less common in natural habitats, is the moss Leptobryum pyriforme. This however is frequent on the moor wherever bare peat is drying out after flooding, together with Dicranella cerviculata. One of the commonest species present is Orthodontium lineare, an interesting plant in that it was unknown in Britain before 1920, when it was first observed near Greenfield - in West Yorkshire! The plant is well known in the Southern hemisphere and had arrived in Britain as a colonist. Its spread has been dramatic and it is now recorded for almost every vice-county in England and Wales. There are fewer records from Scotland but this may be due to under-recording. In Bedfordshire it is now a very common species on tree-stumps throughout the county usually producing vast numbers of capsules.

Another alien species with a somewhat similar history is Campylopus introflexus known from many places in the Southern hemisphere and northwards as far as some of the southern states of the U.S.A. It first appeared in Britain some twenty-five years ago and is now widely distributed throughout the country including Ireland and the Channel Islands, growing on peaty ground. It was first recorded at Flitwick Moor in 1966 and appears to be spreading.

On the deficit side it seems highly likely that such attractive species as Philonotis fontana, Cratoneuron commutatum and Campylium stellatum, which once grew on the moor, are now extinct in the county.

Many species are limited to restricted habitats on the moor. Thus species such as Tortula muralis, Barbula convoluta, B. unguiculata, Bryum capillare and B. argenteum, abundant throughout the county on brick walls and disturbed ground, are restricted at the moor to the 'car park' and a small area of disturbed ground with brick rubble, in the south of the Trust owned portion of the moor.

Bryum capillare also occurs as an epiphyte along with Orthotrichum diaphanum which is very scarce on the moor.

Species growing on rotting wood include Dicranoweisia cirrata, Dicranella heteramalla, Tetraphis pellucida, Orthodontium lineare, Aulocommium androgynum and Brachythecium velutinum, together with the liverworts Lophocolea cuspidata, L. heterophylla, Cephalozia connivens, C. bicuspidata and Lepidozia reptans (the last being very scarce here). On rotting wood or fallen trees liable to frequent flooding one finds Riccardia pinguis, R. sinuata and Leptodictyum riparium.

Whilst the presence of Sphagnum is always an indication of acid conditions, the different species show well defined habitat preferences, ranging from S. palustre (growing in the dryer parts), to S. cuspidatum which grows submerged in pools. Some of the species growing in association with the Sphagnum have already been mentioned.

On areas which have been burnt the mosses Ceratodon purpureus and Funaria hygrometrica are among the first colonisers, followed by Polytrichum

piliferum and P. juniperinum.

In addition to being among the first colonisers of barren ground and helping to provide stability of the soil, Bryophytes also provide cover and food for a wealth of Invertebrate life. They are of considerable importance as indicator species and evidence suggests their potential as indicators of levels of environmental pollution cannot be ignored.

Flitwick Moor provides an excellent illustration of the principles of Bryophyte ecology, a knowledge of which is the perfect introduction to the study of ecology as a whole. In addition the rarities, both county and national mean that the importance of this area cannot be over-estimated.

List of species recorded.

Mosses:- Acrocladium cordifolium; A. cuspidatum; A. stramineum; Amblystegium serpens; Atrichum undulatum; Aulocomnium androgynum; A. palustre; Barbula convoluta; B. unguiculata; Brachythecium albicans; B. rivulare; B. rutabulum; B. velutinum; Bryum argenteum; B. bicolor; B. capillare; B. pseudotriquetrum; (Campylium stellatum); Campylopus flexuosus; C. introflexus; C. pyriformis; Ceratodon purpureus; (Climacium dendroides); (Cratoneuron commutatum); Ctenidium molluscum; Dicranella cerviculata; D. heteromalla; D. schreberana; D. staphylina; Dicranoweisia cirrata; Dicranum bonjeanii; D. majus; D. polysetum; D. scoparium; Drepanocladus aduncus; D. exannulatus; D. fluitans; Eurhynchium praelongum; E. swartzii; Fissidens bryoides; Funaria hygrometrica; Hyponum cupressiforme; Leptobryum pyriforme; Leptodictyum riparium; Leucobryum glaucum; Mnium hornum; M. longirostrum; M. punctatum; (M. seligeri); Orthodontium lineare; Orthotrichum diaphanum; (Philonotis fontana); Physcomitrium pyriforme; Plagiothecium curvifolium; P. denticulatum; P. ruthei; P. succulentum; P. undulatum; Pleurozium schreberi; Pohlia delicatula; P. nutans; Polytrichum aloides; P. commune; P. formosum; P. juniperinum; P. piliferum; Pseudoscleropodium purum; Rhynchostegiella tenella; Rhytidiadelphus squarrosus; Sphagnum capillaceum; S. cuspidatum; S. fimbriatum; S. girgensohnii; S. palustre; S. plumulosum; S. recurvum; S. squarrosum; Tetraphis pellucida; Thuidium tamariscinum; Tortula muralis;

Liverworts:- Calypogeia fissa; C. muellerana; Cephalozia bicuspidata; C. connivens; Cephaloziella rubella; Conocephalum conicum; Cryptothallus mirabilis; Diplophyllum albicans; Gymnocolea inflata; Lepidozia reptans; Lophocolea bidentata; L. cuspidata; L. heterophylla; Lunularia cruciata; Marchantia polymorpha; Pellia epiphylla; Ptilidium ciliare; Riccardia pinguis; R. sinuata; Riccia fluitans.

() denotes species not recorded here for over 50 years.

Acknowledgements.

I wish to thank the many workers who have contributed records, especially Mr. J.C.Gardiner and Dr. H. L.K. Whitehouse.

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- | | |
|--|---|
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SPIDERS IN BEDFORDSHIRE

A LITERATURE SURVEY

by T. J. Thomas.

Introduction.

Information from a literature survey on spiders shows that this group has not been studied intensively in Bedfordshire. The number of species found - apart from my own collecting - seems to have come from some few deliberate visits to areas of natural history interest e.g. Flitwick Moor, and adventitious captures.

It has been assumed that all relevant facts refer to Bedfordshire as defined in references 11 and 12. One literature source consulted (ref. 4) crosses the county boundaries of Bedfordshire and Hertfordshire.

This survey attempts to be comprehensive but it is possible that there are sources not used, so any further information would be gratefully received.

Literature Survey.

During September 1875 Mr. Alderman Carter (ref. 1a) exhibited living specimens of the Stag Beetle (Cerambyx moschatus), the Great Green Grasshopper (Gryllus viridisimus) and the jumping spider (Salticus scenicus) to members of the Bedfordshire Natural History Society and Field Club. This seemed to be the first recorded comment upon a spider in the county, though the creature's origin was not specified.

A year later a talk (ref. 1b) and a group discussion (ref. 1c) on spiders was held by the same Society. The talk, as its title showed, was directed at making the members aware of the need to study this invertebrate group by pointing out some of its various interesting aspects. Drawings and diagrams were shown but were not reproduced in the Abstracts (ref. 1). The group discussion that followed was not recorded either.

Not until the Victoria County History (ref. 3) was there any further mention of spiders. A list, compiled by F.O. Pickard-Cambridge, was published, apparently based upon information supplied by Lord Tavistock for Woburn Abbey and by F.P. Smith for Luton and Leighton Buzzard. It contained less than 40 species. Soper (ref. 6) commented upon this: "... only orders of insects ... studied by resident workers were the Coleoptera and Lepidoptera, the remainder having to be hurriedly dealt with by ... experts ... to compile lists for publication ... meagre in detail and of doubtful value." An unfair comment considering that which had not gone before. The list, at least showed that there were some spiders in the county.

Some spiders that may have been taken in Bedfordshire were listed by Palmer (ref. 4). These were in the book "The Natural History of the Hitchin Region" where the countryside for 10 miles around Hitchin was studied. As this included a large area of Bedfordshire e.g. Flitwick Moor and Blows Downs,

it is not unreasonable to note them in the list below.

Bristowe in "The Comity of Spiders" (ref. 5) pointed out that Bedfordshire was one of six counties that had less than 100 species recorded. This was in 1939, and his list, based upon various sources - particularly from G.H. Locket - contained about 60 species.

The adventitious capture in 1947 of Micrommata virescens was noted by Verdcourt (ref. 7).

Three years later, Cloudsley-Thompson (ref. 8) published a note on a visit to Flitwick Moor. He recorded the taking of 31 species. Wanless, during 1971, made two visits to the same place and captured a similar number (ref. 10).

Further additions to the county list were recorded by Merrett (ref. 9) and these were probably included in the latest list, of about 130 species, given in "British Spiders" Volume III (ref. 15). The authors of this acknowledge their use of Bristowe and information from the members of the British Arachnological Society.

With my own collecting included the list for Bedfords line stands at 232 species.

List of Spiders for Bedfordshire.

Family ATYPIDAE

[A. typus affinis Eichwald] 15

Family AMAUROBIIDAE

Amaurobius fenestralis (Stroem) 5, 15
A. similis (Blackwall) 3, 5, 15
A. ferox (Walckenaer) 3, 5, 15

Family DICTYNIDAE

Dictyna arundinacea (Linnaeus) 8, 9, 15
D. uncinata Thorell 8, 9, 15
Lathys humilis (Blackwall)

Family OONOPIDAE

Oonops pulcher Templeton
O. domesticus 15

Family DYSDERIDAE

Dysdera erythrina (Walckenaer)
D. crocata C. L. Koch
Harpactea hombergi (Scopoli)
Segestria senoculata (Linnaeus) 3, 5, 15

Family PHOLCIDAE

[Pholcus phalangioides (Fuesslin)] 4, 5, 15

Family GNAPHOSIDAE

Drassodes lapidosus (Walckenaer) 3, 4, 5
Herpyllus blackwalli (Thorell)
Zelotes latreillei (Simon)
Micaria pulicaria (Sundevall) 4

Family CLUBIONIDAE

Clubiona corticalis (Walckenaer)
C. reclusa O. P. - Cambridge 5, 8, 15

<u>C. stagnatilis</u> Kulczynski	
<u>C. pallidula</u> (Clerck)	3, 4, 5, 15
<u>C. phragmitis</u> C. L. Koch	4, 10
<u>C. terrestris</u> Westring	4
<u>C. neglecta</u> O. P. -Cambridge	15
<u>C. lutescens</u> Westring	8, 9, 15
<u>C. compta</u> C. L. Koch	10
<u>C. brevipes</u> Blackwall	
<u>C. diversa</u> O. P. -Cambridge	15
<u>Cheiracanthium erraticum</u> (Walckenaer)	8, 9, 15
<u>Agroeca brunnea</u> (Blackwall)	5, 15.
<u>A. proxima</u> (O. P. -Cambridge)]	15
<u>A. inopina</u> O. P. -Cambridge	
<u>Scotina celans</u> (Blackwall)	
<u>Phrurolithus festivus</u> (C. L. Koch)	
Family ZORIDAE	
<u>Zora spinimana</u> (Sundevall)	10
Family ANYPHAENIDAE	
<u>Anyphaena accentuata</u> (Walckenaer)	
Family SPARASSIDAE	
<u>[Micrommata virescens</u> (Clerck)]	7, 15
Family THOMISIDAE	
<u>Diaea dorsata</u> (Fabricius)	
<u>Misumena vatia</u> (Clerck)	4, 15
<u>Xysticus cristatus</u> (Clerck)	3, 4, 5, 8, 15
<u>X. lanio</u> C. L. Koch	
<u>[Oxyptila sanctuaria</u> (O. P. -Cambridge)]	15
<u>[O. trux</u> (Blackwall)]	8, 9, 15
<u>[O. atomaria</u> (Panzer)]	15
<u>O. brevipes</u> (Hahn)	
<u>Philodromus dispar</u> Walckenaer	8, 9, 15
<u>P. aureolus</u> (Clerck)	3, 4, 5, 15
<u>P. cespitum</u> (Walckenaer)	5, 8, 15
<u>Tibellus oblongus</u> (Walckenaer)	3, 4, 5, 8, 15
Family SALTICIDAE	
<u>Salticus scenicus</u> (Clerck)	3, 4, 5, 15
<u>S. cingulatus</u> (Panzer)	10
<u>Heliophanus flavipes</u> C. L. Koch	8, 9, 15
<u>Neon reticulatus</u> (Blackwall)	
<u>Euophrys frontalis</u> (Walckenaer)	15
<u>[E. aequipes</u> (O. P. -Cambridge)]	15
<u>E. lanigera</u> (Simon)	15
<u>Sitticus pubescens</u> (Fabricius)	
<u>[Aelurillus v-insignitus</u> (Clerck)]	9, 15
Family LYCOSIDAE	
<u>[Pardosa agrestis</u> (Westring)]	9, 15
<u>P. pullata</u> (Clerck)	4, 5, 8, 15
<u>P. prativaga</u> (L. Koch)	5, 8, 15
<u>P. amentata</u> (Clerck)	3, 4, 5, 8, 15
<u>P. nigriceps</u> (Thorell)	5, 8, 15
<u>P. lugubris</u> (Walckenaer)	3, 5, 10, 15
<u>P. hortensis</u> (Thorell)	3, 5, 15
<u>Alopecosa pulverulenta</u> (Clerck)	5, 15
<u>A. accentuata</u> (Latreille)	15

<u>Trochosa ruricola</u> (Degeer)	3, 4, 5, 15
<u>T. terricola</u> Thorell	4, 5, 8, 15
<u>Arctosa perita</u> (Latreille)]	8, 15
<u>Pirata piraticus</u> (Clerck)	15
<u>P. hygrophilus</u> Thorell	4, 8, 9, 10, 15
Family PISAURIDAE	
<u>Pisaura mirabilis</u> (Clerck)	3, 4, 5, 15
Family AGELENIDAE	
<u>Agelena labyrinthica</u> (Clerck)	3, 4, 5, 15
<u>T. parietina</u> (Fourcroy)	3, 4, 15
<u>T. agrestis</u> (Walckenaer)	15
<u>T. domestica</u> (Clerck)	3, 4, 5, 15
<u>T. silvestris</u> L. Koch	
<u>Cicurina cicur</u> (Fabricius)	
<u>Antistea elegans</u> (Clackwall)]	5, 10, 15
<u>Hahnna montana</u> (Blackwall)	15
<u>H. nava</u> (Blackwall)]	5, 15
<u>H. helveola</u> Simon	15
Family MIMETIDAE	
<u>Ero cambridgei</u> Kulczynski	10
<u>E. furcata</u> (Villers)	5, 15
Family THERIDIIDAE	
<u>Episinus angulatus</u> (Blackwall)	
<u>Crustulina guttata</u> (Wider)	10
<u>Steatoda bipunctata</u> (Linnaeus)	3, 5, 15
<u>Anelosimus vittatus</u> (C. L. Koch)	
<u>Achaearanea lunata</u> (Clerck)	
<u>A. tepidariorum</u> (C. L. Koch)]	3, 5, 15
<u>Theridion sisyphium</u> (Clerck)	4, 8, 9, 15
<u>T. pictum</u> (Walckenaer)	
<u>T. simile</u> C. L. Koch	
<u>T. varians</u> Hahn	5, 10, 15
<u>T. blackwalli</u> O. P. -Cambridge	
<u>T. tinctum</u> (Walckenaer)	
<u>T. bimaculatum</u> (Linnaeus)	5, 15
<u>T. pallens</u> Blackwall	15
<u>Enoplognatha ovata</u> (Clerck)	3, 4, 5, 8, 15
<u>Robertus lividus</u> (Blackwall)	5, 10, 15
<u>R. neglectus</u> (O. P. -Cambridge)]	15
<u>Pholcomma gibbum</u> (Westring)	10
Family TETRAGNATHIDAE	
<u>Tetragnatha extensa</u> (Linnaeus)	3, 4, 5, 8, 15
<u>T. montana</u> (Simon)	10
<u>T. obtusa</u> C. L. Koch	15
<u>Pachygnatha clercki</u> Sundevall	3, 4, 5, 15
<u>P. listeri</u> Sundevall	
<u>P. degeeri</u> Sundevall	4, 5, 15
<u>Meta segmentata</u> (Clerck)	3, 4, 5
<u>M. mengei</u> (Blackwall)	
<u>M. merianae</u> (Scopoli)	3, 5, 15
Family ARANEIDAE	
<u>Araneus gibbosus</u> (Walckenaer)	
<u>A. diadematus</u> Clerck	3, 4, 5, 15

<u>A. quadratus</u> Clerck	4, 5, 15
<u>A. marmoreus pyramidatus</u> Clerck	
<u>A. cornutus</u> Clerck	8, 9, 15
<u>A. sclopetarius</u> Clerck	5, 15
<u>A. umbraticus</u> Clerck	3, 5, 9, 10, 15
<u>A. redii</u> (Scopoli)	
<u>A. cucurbitinus</u> Clerck	3, 4, 5, 15
<u>Zilla diodia</u> (Walckenaer)	
<u>Hyposinga pygmaea</u> (Sundevall)	8, 15
<u>[H. sanguinea</u> (C. L. Koch)]	8, 15
<u>Zygiella x-notata</u> (Clerck)	3, 5, 15
<u>Z. atrica</u> (C. L. Koch)	4
<u>Cyclosa conica</u> (Pallas)	3, 5, 8, 15

Family LINYPHIIDAE

<u>[Ceratinella brevipes</u> (Westring)]	10
<u>Walckenaera acuminata</u> Blackwall	15
<u>W. antica</u> (Wider)	15
<u>W. cucullata</u> (C. L. Koch)	10
<u>W. dysderioides</u> (Wider)	
<u>W. nudipalpis</u> (Westring)	
<u>W. obtusa</u> Blackwall	
<u>[W. monoceros</u> (Wider)]	15
<u>W. unicornis</u> O. P. -Cambridge	10, 15
<u>W. cuspidata</u> Blackwall	
<u>Dicymbium nigrum</u> (Blackwall)	
<u>D. tibiale</u> (Blackwall)	
<u>Entelecara acuminata</u> (Wider)	
<u>E. erythropus</u> (Westring)	
<u>Gnathonarium dentatum</u> (Wider)	10
<u>Gongylidium rufipes</u> (Sundevall)	8, 9, 10, 15
<u>Dismodicus bifrons</u> (Blackwall)	8, 9, 15
<u>Hypomma bituberculatum</u> (Wider)	10
<u>[H. cornutum</u> (Blackwall)]	15
<u>Baryphyma pratensis</u> (Blackwall)	
<u>Gonatium rubens</u> (Blackwall)	5, 8, 10, 15
<u>G. rubellum</u> (Blackwall)	
<u>Maso sundevalli</u> (Westring)	10
<u>[Peponocranium ludicrum</u> (O. P. -Cambridge)]	15
<u>Pocadicnemis pumila</u> (Blackwall)	5, 10, 15
<u>Oedothorax gibbosus</u> (Blackwall)	}
<u>O. tuberosus</u> (Blackwall)	
<u>O. fuscus</u> (Blackwall)	5, 15
<u>O. agrestis</u> (Blackwall)	
<u>O. retusus</u> (Westring)	
<u>O. apicatus</u> (Blackwall)	
<u>[Pelecopsis parallela</u> (Wider)]	15
<u>Cnephalocotes obscurus</u> (Blackwall)	
<u>Monocephalus fuscipes</u> (Blackwall)	
<u>[Trichoncus saxicola</u> (O. P. -Cambridge)]	15
<u>Tiso vagans</u> (Blackwall)	
<u>Lophomma punctatum</u> (Blackwall)	
<u>Saloca diceros</u> (O. P. -Cambridge)	
<u>[Jacksonella falconeri</u> (Jackson)]	15
<u>Gongylidiellum vivum</u> (O. P. -Cambridge)	5, 15
<u>Micrargus herbigradus</u> (Blackwall)	15
<u>[M. subaequalis</u> (Westring)]	15
<u>Erigonella hiemalis</u> (Blackwall)	
<u>Savignya frontata</u> (Blackwall)	
<u>Diplocephalus cristatus</u> (Blackwall)	

<u>D. permixtus</u> (O. P. -Cambridge)]	15
<u>D. latifrons</u> (O. P. -Cambridge)	
<u>D. picinus</u> (Blackwall)	
<u>Araeoncus humilis</u> (Blackwall)	10, 15
<u>Panamomops sulcifrons</u> (Wilder)]	15-
<u>Lessertia denticelis</u> (Simon)	
<u>Erigone dentipalpis</u> (Wider)	8, 9, 15
<u>E. atra</u> (Blackwall)	5, 15
<u>E. longipalpis</u> (Sundevall)	
<u>E. vagans</u> Andouin	
<u>[Ostearius melanopygnis</u> (O. P.-Cambridge)]	15
<u>Porrhomma pygmaeum</u>	
<u>P. microphthalmum</u> (O.P. -Cambridge)	15
<u>Agyneta subtilis</u> (O. P. -Cambridge)	
<u>A. conigera</u> (O. P. -Cambridge)	10
<u>Meioneta rurestris</u> (C. L. Kock)	15
<u>[M. mollis</u> (O. P. -Cambridge)]	15
<u>M. saxatilis</u> (Blackwall)	5, 15
<u>M. beata</u> (O. P. -Cambridge)	15
<u>Microneta viaria</u> (Blackwall)	10
<u>Centromerus sylvaticus</u> (Blackwall)	3, 5, 10, 15
<u>C. prudens</u> (O. P. -Cambridge)	
<u>C. dilutus</u> (O. P. -Cambridge)	10
<u>Centromerita bicolor</u> (Blackwall)	4, 15
<u>C. concinna</u> (Thorell)	15
<u>Oreonetides abnormis</u> (Blackwall)	
<u>O. firmus</u> (O. P. -Cambridge)	
<u>Macrargus rufus</u> (Wilder)	
<u>Bathypantes gracilis</u> (Blackwall)	15
<u>B. parvulus</u> (Westring)	15
<u>B. nigrinus</u> (Westring)	10
<u>Kaestneria dorsalis</u> (Wider)	
<u>K. pullata</u> (O. P. -Cambridge)	8, 15
<u>Diplostyla concolor</u> (Wider)	15
<u>Poeciloneta globosa</u> (Wider)	
<u>Drapetisca socialis</u> (Sundevall)	
<u>Tapinopa longidens</u> (Wider)	
<u>Floronia bucculenta</u> (Clerck)	
<u>Labulla thoracica</u> (Wider)	5, 15
<u>Stemonyphantes lineatus</u> (Linnaeus)	3, 5, 10, 15
<u>Lepthyphantes nebulosus</u> (Sundevall)	
<u>L. leprosus</u> (Clerck)	5, 15
<u>L. minutus</u> (Blackwall)	3, 5, 15
<u>L. alacris</u> (Blackwall)	10
<u>L. obscurus</u> (Blackwall)	15
<u>L. tenuis</u> (Blackwall)	5, 15
<u>L. zimmermanni</u> Bertkau	10
<u>L. cristatus</u> (Menge)	
<u>L. mengei</u> Kulczynski	15
<u>L. flavipes</u> (Blackwall)	10
<u>L. ericaeus</u> (Blackwall)	10, 15
<u>L. pallidus</u> (O. P. -Cambridge)	
<u>Helophora insignis</u> (Blackwall)	
<u>Linyphia triangularis</u> (Clerck)	3, 15
<u>L. hortensis</u> Sundevall	5, 15
<u>Linyphia (Neriene) montana</u> (Clerck)	4, 5, 10, 15
<u>L. (Neriene) clathrata</u> Sundevall	4, 10, 15
<u>L. (Neriene) peltata</u> Wider	15
<u>Microlinyphia pusilla</u> (Sundevall)	5, 8, 15

Some notes and comments.

The nomenclature used is that according to reference 15. Several of the literature sources consulted had out-dated names which had to be transcribed - not always successfully - with the help of references 5, 14 and 16. Opposite each species is given the appropriate reference number. Spiders not taken by me are given in square parentheses.

The specific names of the Stag Beetle and Great Green Grasshopper are those given in reference 1a. They should be Lucanus cervus (Linnaeus) and Tettigonia viridissima (Linnaeus) respectively. The latter is the Great Green Bush Cricket and is synonymous with Great Green Grasshopper (ref.17).

Pholcus phalangioides (Fuesslin) has not so far been taken by me (ref.13) but has been recorded (ref. 4, 5 and 15). Palmer (ref. 4) places this species in the family Theridiidae, which is wrong, and also gives the generic name as Pholeus (a misprint?). The list was based upon adventitious captures by Palmer during his own work and a subsequent comparison with Campbell's paper (ref.2). In the latter it is stated that Pholcus was far less common than expected (incidentally the generic spelling was correct).

Recent work has shown that the females of Drassodes lapidosus (Walckenaer) and D. cupreus (Blackwall) can be separated and that previous identifications of the former should be regarded with some suspicion. See reference 15 for fuller details and the relevant references.

The nomenclature of Tibellus oblongus (Walckenaer) has had a confusing history. For a fuller account see Bristowe's "Comity". Any reference to this spider before 1911 should be treated with care.

Palmer (ref.4) gave in his list the species of wolf-spider Lycosa exigua which appears to refer to the two species, Pardosa monticola C. L. Koch and P. palustris Thorell. These two are not easily separable, and as confusion may have occurred, have been left off the list.

The females of the genus Oedothorax are not easily separable whereas the males are. Hence the bracket joining O. gibbosus (Blackwall) and O. tuberosus (Blackwall) as only females were captured by Wanless.

In the list given in the Victoria County History is the species Kulczynskiellum fuscum whose modern name I could not trace.

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T. J. THOMAS

DRAGONFLIES IN BEDFORDSHIRE A SURVEY OF OLD RECORDS

By Nancy Dawson

When I became Dragonfly Recorder in 1973, I was given a card index which listed the dragonflies recorded by the Society from the years 1941 to 1950. Six excellent entomologists contributed to these records - Ray Palmer, B.B. West, D.W. Snow, D.A. Reid, B. Verdcourt and D. Ashwell. It has been suggested to me that it would be interesting to publish this list, with notes on the present status of each species. These notes are very incomplete as, so far, I have only been able to cover the middle of the County.

DAMSEL FLIES:

Erythromma najas - Red Eyed Damsel Fly. Old records: Bromham,

Oakley (TL05), Stevington (SP95) [BBW] . Willington (TL15) [RP] . "Frequent on some parts of the Ouse" [BV]

Present status: Local. Recorded so far in TL13, TL14, SP95.

Coenagrion pulchellum - Variable Coenagrion. Old records: "Rare and local" Biddenham Bauk 1941 (TL04) Stevington 1943 (SP95) [BBW] . Sharnbrook 1948 [BV] . Grovebury Pits 1950 (SP92) [DAR] .

Present status: Not yet recorded.

Coenagrion puella - Common Coenagrion. Old records: "Common in most localities". Shefford Canal (TL40) [RP] . Ravensden (E L05) [BBW] . Ditches near Putnoe Wood (TL05) [DWS] .

Present status: Common, recorded so far in SP94, 95, and TL 03, 04, 05, 14, 15.

Enallagma cyathigerum - Common Blue Damsel Fly. Old records: "Abundant in many places in the south, and generally distributed in the north" [BV] . Flitwick Moor common (TL03) [RP] . "Not common in the Ouse Valley" Oakley, Bromham, (TL05), Stevington (SP95) [BBW] . Great Barford and Roxton (TL15) [DWS] .

Present status: Common, recorded so far in SP92, 94, 95, 96, TL03, 04, 05, 11, 13, 14, 15.

Ischnura elegans - Common Ischnura. Old records "Generally distributed, but commonest in the north" [BV] . "All along the Ouse" [DWS] . Stevington (SP95) Oakley (RL05) "Abundant" [BBW] . Flitwick Moor (TL03) [RP] .

Present status: Very common, recorded so far in SP93, 94, 95, 96, TL 03, 04, 05, 06, 11, 13, 14, 15.

Pyrhosoma nymphula - Large Red Damsel Fly. Old records "Generally distributed but always in very small numbers" [BV] . Heath and Reach 1947 (SP92), Flitwick Moor (TL03) [RP] . Ravensden (TL05) "Very local" [BBW] . Southill (TL14) [RP] .

Present status: Local, recorded so far in TL14, 03, SP94.

Platycnemis pennipes - White-legged Damsel Fly. Old records: "All along the Ouse, often the commonest damselfly" [DWS] . Willington (TL15) [RP] . Goldington (TL05) [DWS] . Stevington (SP95) [BBW] . "Common on the River Ousel near Leighton Buzzard" (SP92) [DA] .

Present status: Common on the Ouse SP95, TL04, 05, 15.

Agrion splendens - Banded Agrion. Old records: "Common along the Ouse" [BV] . Flit (TL13) [RP] . Black Pond, Heath and Reach and Grovebury Pits, Leighton Buzzard (SP92) [DAR] .

Present Status: Common, especially on rivers. Recorded so far in SP95, TL04, 05, 13, 14, 15.

Lestes dryas - Scarce Green Lestes. Old records: One female at Heath and Reach, 1950 (SP92) [DAR] .

Present status: Not yet recorded.

Lestes sponsa ; Green Lestes. Old records: Abundant at Cople Pits

July 1948 (TL04, 14) [BV] . Wavendon Heath Aug 1949 (SP93) [BV] . Rushmere Lake, Heath and Reach (SP92) [DAR] . Oakley (TL05) and Great Barford 1942 (TL15), "But not since" [DWS] .

Present status: Not yet recorded.

DARTER DRAGONFLIES

Sympetrum danae - Black Sympetrum. Old records: Bromham Park, 1943, 2 taken (TL05) [BBW] . Wavenden Heath 1951 (SP93) [RP] .

Present status: Not yet recorded.

Sympetrum striolatum - Common Sympetrum. Old records: Flitwick Moor, "Common" (TL03) [RP] . Stevington (SP95), Melchbourne (TL06), Kempston Mill (TL04) [BBW] .

Present status: Common, so far recorded in SP95, TL02, 03, 04, 13, 14, 15.

Libellula depressa - Broad-bodied Libellula. Old records: Flitwick Moor (TL03) [RP] . "Breeds at Pavenham Gravel Pits" (TL15) [BBW] .

Present status: Not yet recorded.

Libellula quadrimaculata - Four-spotted Libellula. Old records: Flitwick Moor 1974 (TL03) [RP] . Wavenden Heath 1948 (SP93) [BV] . Brickworks Pit, Stanbridge (SP92) [DAR] . "Kirklands", Biggleswade 1948 (TL14) [RP] .

Present status: Local, so far recorded SP95, TL04, TL14.

Orthetrum cancellatum - Black-lined Orthetrum. Old records: Grovebury Pits, Leighton Buzzard and Brickwork pits, Stanbridge 1950 (SP92) [DAR] .

Present status: Common along the Ouse and in many lakes and gravel pits TO04, 05, 14, 15.

HAWKER DRAGONFLIES

Anax imperator - Emperor Dragonfly. Old records: Flitwick Moor, June 1947 (TL03) [RP] . Heath and Reach, June 1947 (SP92) [RP] . Barton Hills, June 1948 [BBW] . Leighton Buzzard (SP92) "Common" [DAR] .

Present status: Local, recorded so far in TL14 and TL03 only.

Aeschna mixta ; Scarce Aeschna. Old records: Stevington, 1942 and 1945 (SP92) [RP] . Grovebury Pits, Leighton Buzzard (SP92) [DAR] . Flitwick Moor 1947 (TL03) [RP] . Cockayne Hatley, 1947, (TL24) [RP] .

Present status: Local but unusually abundant in 1973. Recorded so far in SP95, TL04, 13, 14.

Aeschna grandis - Brown Aeschna. Old records: Stevington, Turvey (SP95), Oakley, Bromham (TL05), Roxton (TL15) Kempston (TL04) BBW . Cockayne Hatley 1947 (TL34) [RP] . Woburn Park 1947 (SP93) [RP] . Grovebury Pits, Leighton Buzzard (SP92) [DAR] .

Present status: Common, Recorded so far in SP95, 96, TL03, 04, 05, 13, 14, 15.

Aeschna juncea - Common Aeschna. Old records: Flitwick Moor, 1948 (TL03) [RP] . Stevington 1942 (SP95) [BBW] . Kempston 1943 (TL04) [DWS] .

Present status: not yet recorded.

Aeschna cyanea - Southern Aeschna. Old records: "The Ouse generally and common away from water" [DWS]. Stevington, Turvey (SP95) [BBW] Flitwick Moor "Fairly common" (TL03) [RF].

Present status: Common, recorded so far in SP95, TL02, 03, 05, 14, 15.

Cordulegaster annulatus - Golden-ringed Dragonfly. Old records: West Wood, Knotting (SP96) [H.A.S.Key]. Putnoe Wood 1948 (TL05) [BBW].

Present status: Not yet recorded.

If any members of the Society have records for the 1950's and 1960's I would be grateful for them. Could I also repeat my plea of last year for photographs or slides of dragonflies (with a grid reference) and for the bodies of traffic victims? I would also be glad of records, especially from the south and west of the County, of the Banded Agrion. This beautiful damselfly cannot be confused with any other species in the field, as the male has a dark blue band across each wing.

Finally a word to anyone who feels they would like to learn to identify this attractive group of insects - please do not kill them. Their colours fade quickly after death and, in any case, they are hard pressed with destruction and pollution of their habitat. The hawker and darter dragonflies can be identified with binoculars when they deign to perch. The damselflies can easily be caught for identification with an improvised net made out of a large, clear polythene bag, stiff wire, paper clips and a garden cane.
Reference Books (for identification):-

"The dragonflies of the British Isles" by Cynthia Longfield, in the Wayside and Woodland series, published by Warne and Co. L td. --- good key and descriptions, poor pictures.

"Dragonflies" by Corbet, Longfield and Moor. New Naturalist series published by Collins --- excellent on general natural history; good colour photographs; good key to larvae.

"Odonata" by Lt. Col. F.C. Fraser. Handbooks for the Identification of British Insects, Vol. 1, Part 10, Royal Entomological Society of London. Good body wing and sex appendage drawings; keys rather technical.

STYLOPS IN BEDFORDSHIRE

By Bruce Ing

The Strepsiptera are rare insects parasitic in solitary bees and homopteran bugs. There are about thirty British species but in general this is a poorly known order of insects. The female stylops is enclosed in the abdomen of the host, except for the head which projects between the host's segments, and has few structures useful in distinguishing species. Use is made of size and shape of the head and non-functional mandibles. The male is winged and flutters ghost-like in the vicinity of flowers visited by the host bees. Mating takes place with the female still inside the host and the eggs develop internally to produce tiny six-legged larvae - the triungulinids. These larvae leave the mother and crawl onto the abdomen of the host, and when a suitable flower is reached, jump off and wait for another one to come along. When a suitable host bee visits the flower the larvae leap on and are carried back to the nest where they burrow into the bee larvae and moult into a maggot-like form. They then develop as internal parasites until they reach the pupal stage when they project from the abdomen of the adult host.

The host is not unaffected by the presence of the parasite. In several species changes in secondary sexual characters, such as facial pattern, provision of pollen baskets and number of antennal segments, have been noticed and there may be some degeneration in the ovaries.

The large bee genus Andrena is parasitised, stylopised, by Stylops, and Halictus by the rare Halictoxenos. Homopteran bugs, especially Delphacidae, are attacked by Elenchus and Halictophagus. The former is widespread, the latter very rare. In both genera the parasite larvae burrow into the bug larvae among the bases of grasses.

No previous records of Bedfordshire stylopids as such are known although stylopised bees are mentioned by Chambers (1949) and specimens are in his collection. In the list that follows specimens collected by Dr. Chambers are marked with his accession numbers. In the collection of Hymenoptera in Luton Museum are a few stylopised specimens collected by Dr. B.R. Laurence. Surrounding counties have been studied briefly (Ing, 1971, 1972, 1975; Spooner, 1935) and these are mentioned in the text. The nomenclature used is that in the forthcoming Royal Entomological Society Handbook on the group.

Stylopidae

Stylops alfenii Hofn. ex Andrena similis Smith

Sand pit (now destroyed) in Long Lane, Tingrith, 22. iv. 45, V.H. Chambers (5488). This bee is rarely reported as stylopised, the only other British record being from Devon.

Stylops aterrma Newport ex Andrena jacobi Perkins

Shillington, 13. iv. 35, V. H. Chambers (652)
Whipsnade Heath, 4. v. 41, V.H.C. (3444)
Flitwick Moor, 12. iv. 42, V.H.C. (3930, 3931). Two male Stylops in association with parasitised bees.
Barton, 18. iv. 45, B.R. Laurence (LUTON)
Recorded also from Cambridgeshire and Northants.

Stylops hammella Perkins ex Andrena chrysoseces (K.)

Great Wood, Odell, 17. v. 37, V.H.C. (1800)
Sharpenhoe, 6. v. 39, V.H.C. (2784)
Marston Thrift, Cranfield, 15. iv. 44, V.H.C. (4967)
Fancot Gravel Pit, 2. iv. 45, V.H.C. (5446)
Fancot, 9. iv. 45, B.R. Laurence, (LUTON)
Hipsey Spinney, 13. iv. 45, B.R. L. (LUTON)
Sharpenhoe Clappers, 14. iv. 71, B. Ing.
Recorded from Cambs, Herts and Northants.

Stylops melittae K. ex Andrena nigroaena (K.)

Luton Downs, 7. vi. 30, V.H.C. (56)
Pegsdon Hills, 12. vi. 32, V.H.C. (346)
Rowney Warren, Shefford, 25. iv. 37, V.H.C. (1866)
Pegsdon, 4. vi. 38, V.H.C. (2412)
Sharpenhoe, 5. v. 40, V.H.C. (2888)
Barton Hills, 18. v. 40, V.H.C. (2957)
Harlington, 21. iv. 40, V.H.C. (2984)
Warden Hills, Streatley, 18. v. 40, V.H.C. (3016)
Old Hill Wood, Studham, 28. iv. 40, V.H.C. (3039)
Studham Woods, 28. iv. 40, V.H.C. (3256)

Sharpenhoe, 3.v.41, V.H.C. (3443)
Barton, - .iv.45, B.R.L. (LUTON)
Dunstable Downs, 21.v.71, B. Ing.
Recorded from Cambs, Herts and Northants.

Stylops spreta Perkins ex Andrena saundersella Perkins

Sharpenhoe, 6.v.39, V.H.C. (2711)
This, the smallest British Stylops, attacks most bees of the minutula group.
It is known from Cambridgeshire.

Stylops thwaitesii Perkins (syn. wilkellae Perkins) ex Andrena wilkella (K.)

Heath and Reach sand pits, 11.v.35, V.H.C. (742)
Clophill, 17.v.37, V.H.C. (1818)
Warren Wood, Clophill, 19.vi.42, V.H.C. (4366)
Toddington, 6.v.43, V.H.C. (5499)
Kings Wood, Heath and Reach, 21.v.71, B. Ing.
This is one of the commoner stylopids, although not definitely recorded for surrounding counties.

Halictophagidae

Halictophagus sp. ex Mocydia crocea (H.-S.)

This taxon is included in the list on the strength of a note made by Dr. Chambers of the stylopised bug in the Chilterns. The Cicadellidae are parasitised by Halictophagus of which two or three species are known from the British Isles. Whether this represents an additional species is, of course, not known. However, as the parasites are so rare it is important to record the observation in the hope that it will encourage the search for further specimens. I am confident that the parasitism of the bug was not confused with attack by a pipunculid fly larva.

Elenchidae

Elenchus tenuicornis (K.) ex Javesella dubia (Kb.)

Dunstable Downs, 21.v.71, B. Ing.
A widespread species, attacking several species of delphacid bugs. Recorded from Bucks, Cambs, Herts and Hunts.

Acknowledgements

As will be seen from the records the bulk of the information in the list is provided by the collections and extensive experience of Dr. V.H. Chambers. I am truly grateful to him for his kindness in showing me his collections and making the data available to me. The Curator of the Luton Museum kindly allowed me to examine the insect collections housed there.

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BIRD POPULATIONS IN RELATION TO HABITAT IN CONIFEROUS AND DECIDUOUS WOODLAND

By B. S. Nau.

As part of a more detailed study of the natural history of Maulden Woods and their environs, bird counts were made by the author during 1974 along a number of routes through the study area. This 'line transect' method was used to provide a rapid assessment of the relative abundance of different species, to gain an impression of differences between habitats, and to provide a base-line for any more detailed work in the future.

Three line transect routes were followed; these will be referred to as the northern, central and southern routes respectively. Only the southern route is entirely within the woodland; the other two routes are more properly described as woodland-edge. The routes are shown in fig. 1, and the nature of the habitats involved is summarised in Table 1. The route studied most intensively was the central route; this was counted nine times during the breeding season, between 31st March and 16th June, as well as one winter count on 24th February. Only single winter counts were made along the northern and southern routes, 16th and 17th March. All counts were made over a two hour period between 1000 and 1200 g.m.t. Birds were counted within an overall track width of 100 metres (except Skylarks (400m)). The lengths of the transect routes are:

central route	1.6 km
northern route	1.9 km
southern route	2.5 km

For the winter counts, all birds seen or heard along the route were noted. In the breeding season, however, the objective was to establish the numbers of territories rather than individuals and a different method was used. This method involved plotting on a map for each visit every record which was judged to represent a bird in a different territory. Subsequently, each species was picked off these working maps on to a tracing on which an overall picture was built up for that species, taking the breeding season as a whole. In this way the total number of territories for each species was assessed.

Results

A series of histograms, figs. 2-3, has been prepared to show both the order of abundance of the species recorded, i.e. the 'ranking', and the relative abundance compared with the most numerous species. This is done separately for the winter and breeding season counts. The winter counts are included, in spite of the small number made, since very little data has been published on winter populations of birds in woodland in Britain. To obtain the relative abundance figures plotted, the most numerous species was denoted by "100" and the other species' count totals were scaled accordingly. This facilitates comparisons between routes and times of year, etc.

In Table 2 the winter counts have been analysed according to the main feeding habitat of each species at that time of year; this has been done for each transect route separately. The species are ranked in order of abundance, commonest first. In each section of the table there are three numbers. The first is the number of species recorded; the second is the number of birds counted per unit distance (1 km); and the third is a diversity index* which has high values when the numbers of individuals of several species are high, and low values when only one or two species have high counts and the rest are represented by one or two individuals. In the habitat classification 'canopy' is taken to include both tree canopy and shrub canopy.

* Footnote: The "Diversity index" is the sum of $(p \log_e \frac{1}{p})$ for all the species in a category, where p is the proportion birds which are of one species, i.e. $\sum_i (p_i \log_e \frac{1}{p_i})$. (ref.1.)

A total of 29 species was recorded on the three winter transects, this total excludes species seen flying over the area but not directly 'interacting' with the habitat over which they were flying. Certain species can be included under more than one feeding habitat and in such cases individual birds were allocated to the habitat in which they were recorded; they may therefore appear more than once in a column, e.g. Chaffinch and Song Thrush.

Table 3 is a further analysis of the winter counts which shows how the different Families are represented. The number of species is shown against each family entry.

The breeding season counts on the central route are presented in Fig. 3. These results have been treated in the same way as the winter counts in Fig. 2, the most abundant species being scaled to 100 and the others given as a percentage of this. The number of species recorded during these summer counts was 39.

Discussion

Study of Table 1 shows considerable differences in the habitat types along each of the three transect routes. Both the northern and central routes have about 30% of non-woodland habitat but the southern route is almost entirely woodland. Again, the southern route is nearly 90% conifers whereas the other routes have only about 10% conifers, and these are much younger than those of the southern route. A significant difference between the central and northern routes is the more uniform age of the oak-ash-hazel woodland and the absence of the oldest age class on the northern route.

From Fig. 2 it can be seen that the Robin was the most abundant woodland ground feeder on all three routes, in fact, it was also the commonest bird overall. On the central route the numbers of Starlings and Fieldfares exceeded the Robin count for this route but elsewhere the former species were less numerous. It is also of interest to note that Robins were more uniformly distributed than these species. Indeed the woodland ground feeding species are notably less sociable than either the field ground feeders or the woodland canopy feeders. They are also distinguished in that they feed on invertebrate animal life to a greater extent than do the other groups. The woodland canopy feeders do include species which feed on invertebrate animal life but there are also species in this group which are more truly vegetarian, the Redpoll and Bullfinch.

For variety of species, Table 2 shows that the woodland ground feeders Gp. I come near the top on every route. It is particularly interesting that there is little difference in the number of species in this category on any of the routes but on the northern route the groups II III and IV are distinctly poorer in numbers of species. This is the more surprising since the soil on the southern route is very dry and sandy whilst that of the northern route is a wet heavy clay and the central route is along the boundary dividing the two types of soil. One might expect such differences to be reflected strongly in the invertebrate fauna and, in turn, in the birds which prey upon them. On the contrary, the same species feature at the top of the list of abundance on each route, however the Blackbird and Wren move up and the Song Thrush moves down as one passes from the wetter to the drier routes.

Amongst the woodland canopy feeders it is surprising to find the Bullfinch figuring so high in the list of abundance, in the top three species of every route. This is perhaps a reflection of a relatively recent increase in abundance of this species, or possibly a local phenomenon since the British Trust for Ornithology Common Bird Census Index shows this species to have changed little in numbers since 1966 (ref. 2). It is less surprising to find that the Coal Tit is in the top

three for the southern route as this has a predominance of conifers, the species' established ecological niche. The Goldcrest used to be regarded as a species of conifers and has greatly increased in numbers in the country as a whole, its Index stands at almost three times its base level of 1966. At the same time as increasing its numbers the Goldcrest has been increasingly exploiting habitats outside its original conifers, in Maulden Woods at least it appears to be associated with Ivy-covered trees in deciduous woodland although frequently seen feeding in the shrub layer during the winter.

So far the discussion has concentrated on species, but densities are also of interest. The central route comes top of the list in every category when numerical density of birds is compared. The northern and southern routes do not differ greatly in density for ground feeders but for canopy feeders the northern route is considerably inferior.

Another factor to be considered is that of 'species diversity', thus for two habitats having the same number of species one might have large numbers of only one or two species whilst the other has good numbers of all species. The Diversity Index given in Table 2 is a measure of this effect. The results show that amongst the woodland ground feeders the southern route is poorest, but still reasonable. The northern route is notably poor for field ground feeders but for woodland canopy species there is nothing to choose between the three routes. The conifer area comes out of this comparison better than one might have expected from subjective impressions of other areas of coniferous plantations. The reason for this is probably the diverse character of this part of Maulden Woods, both as regards species and age classes, furthermore the forest compartments are relatively small in area and therefore have much more 'edge' than is often the case.

From an evolutionary point of view it is interesting to compare the representation of the different families of birds, this is done in Table 3. For this purpose Hartert has been followed and a broad interpretation is taken of the warbler family, Muscicapidae (refs. 3, 4). This introduces a degree of order which is not evident when a multitude of small families, such as Turdidae (thrushes), Sylviidae (warblers), Regulidae (kinglets) etc, is used. The table shows that the Muscicapidae have been the most successful in exploiting ground niches, although the competition is seen to be greater outside woodland. In the woodland canopy the tits, Paridae, are dominant and only one warbler appears, namely the Goldcrest. The latter is also distinguished by being the only non-migratory arboreal warbler in Britain (disregarding its congener, the Firecrest). The thrushes, which have been so successful at ground level, are largely non-migratory species in Maulden. It is fascinating to compare this large family of Muscicapidae with its North American counterpart, the Parulidae (wood-warblers). One finds in both families ground-feeding 'thrushes' which are brown above and streaked below as in the Song Thrush, both families have structurally similar leaf warblers which have specialised in niches ranging from low shrubs to tree-top canopy. Even a 'redstart' is recognisably present in both families. By contrast with this situation the tits of the family Paridae have managed to colonise both the old and new world, indeed one species, the Willow Tit is common to both regions.

Turning now to the summer counts on the central route it is immediately apparent that there are considerably more species present than in winter. This is least marked among the woodland ground feeders but the numbers of the field ground feeding species are swollen by species which utilise the wood for nesting cover in the summer and leave the wood for the winter, the finches and sparrows are examples. There are no migrants amongst the woodland ground feeders, only two among the field ground feeders (Tree Pipit and Turtle Dove), but as many as five among the woodland canopy feeders. This is clearly a reflection of their dependence on readily available insect food. Conversely the ground feeders have access to their food supply throughout the year, except in times of severe frost

or snow, they therefore have no need to migrate to find food in winter in this part of Britain.

During the summer the Wren overtakes the Robin as the most numerous species, this may be in part more apparent than real since the Wren is less conspicuous in winter, when it is not in song, and the Robin is more conspicuous when the leaves have fallen in winter.

From the summer census maps it is evident that the highest bird densities are found in those sections of the transect where the oldest deciduous trees are to be found. The poorest were those sections comprising dense plantations of young deciduous trees. Many of the comments made in discussing the winter counts apply also to the summer counts, it is unfortunate that there was not time to cover the northern and southern routes in the summer.

In conclusion it should be said again that it would be desirable to build on the present work by carrying out more extensive winter counts on all three routes. The present paper is consciously based on a minimum of data but the facts and conclusions which emerge from even this limited study should encourage others to undertake more comprehensive studies.

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TABLE 1

Habitat summary for the transect routes, expressed as a percentage for each route.

Woodland type etc.		Age, y	N	sum	C	sum	S	sum
Deciduous	Oak-Ash-Hazel	90	-		24.6		1.1	
	Oak-Ash-Hazel	55-75	44.6		7.9		-	
	Oak-Ash-Hazel	25	-		26.0		-	
	Poplar	50	-		-		4.7	
	Spanish Chestnut	30	-		-		4.3	
	Mixed + Cupressus	20	11.4	56.0	-	58.5	-	6.1
Coniferous	Scots Pine	50	-		-		49.6	
	European Larch	50	-		-		22.3	
	Scots or Corsican Pine	30	-		-		15.9	
	Corsican Pine	10	9.2	9.2	10.3	10.3	-	87.8
Other	Hedge + pasture	-	2.5		14.4		1.1	
	Hedge + improved pasture	-	-		5.8		-	
	Hedge + arable	-	24.0		8.6		-	
	Woodyard	-	8.3		-		-	
	Garden	-	-	34.8	2.4	31.2	1.0	2.1

TABLE 2

Analysis of winter bird counts by feeding habitat and transect route. The diversity index measures the spread of individuals per species. (groups defined in Table 3)

	N route			C route			S route		
GROUP I:									
number of species	8			9			9		
birds per km		24			32			26	
diversity index			1.9			1.9			1.6
GROUP II:									
number of species	5			7			8		
birds per km		14			47			10	
diversity index			0.6			1.4			1.8
GROUP III:									
number of species	5			6			6		
birds per km		8			28			12	
diversity index			1.5			1.4			1.6
GROUP IV:									
number of species	0			2			1		
birds per km		0			1			1	
diversity index			-			-			-
ALL GROUPS:	18	46	1.33	20	108	1.57	20	49	1.67

TABLE 3

Winter counts:
Analysis of families by feeding habitat and transect route, showing species numbers.

Feeding habitat	Northern route		Central route		Southern route	
GROUP I:						
woodland ground feeders	Muscicapidae	4	Muscicapidae	3	Muscicapidae	4
	Corvidae	1	Columbidae	1	Corvidae	1
	Fringillidae	1	Corvidae	1	Fringillidae	1
	Prunellidae	1	Fringillidae	1	Prunellidae	1
	Troglodytidae	1	Prunellidae	1	Troglodytidae	1
			Sturnidae	1		
			Troglodytidae	1		
GROUP II:						
field ground feeders	Alaudidae	1	Muscicapidae	4	Muscicapidae	2
	Columbidae	1	Alaudidae	1	Ploceidae	2
	Phasianidae	1	Columbidae	1	Columbidae	1
	Ploceidae	1	Sturnidae	1	Fringillidae	1
	Sturnidae	1			Prunellidae	1
				Sturnidae	1	
GROUP III:						
woodland canopy feeders	Paridae	3	Paridae	3	Paridae	3
	Fringillidae	1	Fringillidae	1	Fringillidae	2
	Muscicapidae	1	Muscicapidae	1	Muscicapidae	1
			Picidae	1		
GROUP IV:						
others			Certhiidae	1	Picidae	1
			Fringillidae	1		

FIGURE 1 Outline of Maulden Woods showing the three transect routes.

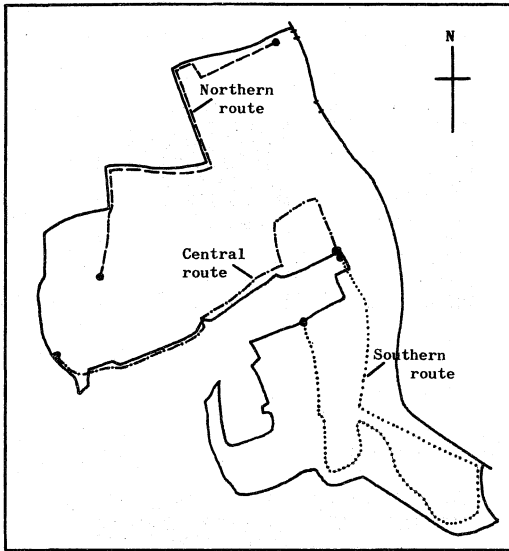
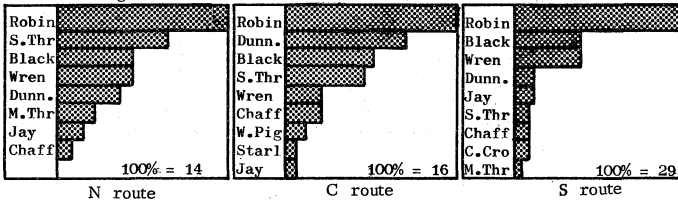


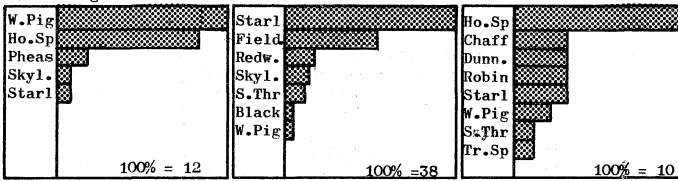
FIGURE 2

Winter counts: relative abundance of species grouped by feeding habitat.

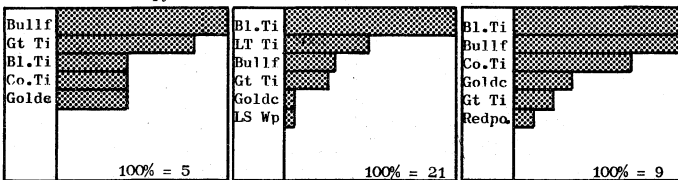
a) woodland ground feeders



b) field ground feeders



c) woodland canopy feeders

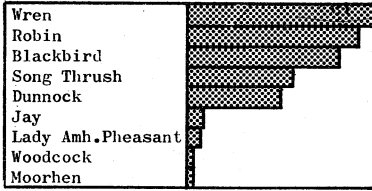


0 % 100

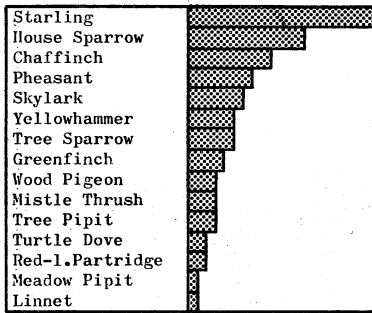
FIGURE 3

Summer counts: relative abundance of species by feeding habitat.

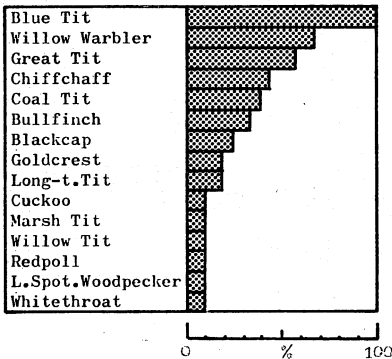
a) woodland ground feeders (100% = 38)



b) field ground feeders (100% = 21)



c) woodland canopy feeders (100% = 21)



THE BEDFORDSHIRE NATURAL HISTORY SOCIETY OF 1875

By A. W. Guppy

Present-day botanists consider that the Sweet Flag, *Acorus calamis*, is a native of southern Asia, introduced into this country in the late fifteenth century and widely used thereafter for strewing floors. The plant was recorded by Abbot in 1798 as growing at Hassocks Farm, a medieval moated site which now lies under Bedford's 'bus station in Greyfriars, but it is not uncommon along the Ouse both above and below Bedford.

In the summer of 1874, however, its status as an indigenous plant had not been settled and was discussed for several weeks in the columns of the Gardeners' Chronicle, while a letter on the same subject appeared in the Bedfordshire Times from James Wyatt, the paper's proprietor and first Editor.

This produced a reply from Thomas Gwyn Elger, a prominent local figure, suggesting the formation of a Natural History Society. After a certain amount of delay and discussion during the following winter the proposal reached fruition on 16th April 1875, when a preliminary meeting was held, followed by the inaugural general meeting in the Bedford Rooms (now the Harpur Suite) on 4th May under Elger's chairmanship. Elger, incidentally, was an antiquary and amateur astronomer of more than average competence, and the author of a book on the moon; it comes as something of a surprise to learn that, three years later, he was elected Mayor of the town, as both his father and grandfather had been. Perhaps we should not forget that, fifty years earlier, Bedford's civic chair was occupied by a Fellow of the Royal Society.

Fifty-nine members were enrolled on that first Tuesday evening, the Rules were adopted and Officers appointed. Nearly all the members lived in or near Bedford and they included seven of the town's doctors, a like number of schoolmasters, the governor of the local prison and the priest in charge of the newly-built Roman Catholic Church. Inevitably, being Bedford, there were some who had retired from colonial service and a number of local tradesmen, including the celebrated George Hurst, then already seventy-five years of age. The surrounding county was represented by three or four 'landed gentry' who took no active part in the Society's affairs; the only Lutonian ever to belong to the Society, the botanist James Saunders, did not join until 1883.

One of the stated aims of the new Society was to revise the county flora which had received little attention during the seventy-seven years which had elapsed since the publication of the Rev. Charles Abbot's Flora Bedfordiensis; foremost in this work was a young master and ex-pupil of Bedford Modern School, William Hillhouse. It was he who organized the new botanical survey of the county in the forty-nine sub-divisions which he selected, who produced the preliminary list of 430 Bedfordshire plants in 1875 and who raised the number of species to nearly 700 in the following year. He received little support, however, from the members and his most active helpers seem to have been people in various outlying parts of the county who were unwilling to join a Society whose meetings they could not attend.

Meanwhile, during the first two years, the membership rose to 135, but after remaining static for a while it began to decline rapidly until, at the end of ten years, there were only 55 nominal members, of whom less than forty had paid an annual subscription. The meetings followed a similar trend; in the first two years they were held at approximately fortnightly intervals throughout the year, microscopical evenings alternating with lectures, but in the ninth year only four lectures were held, all told, and the microscopical evenings had been abandoned. The situation is shown in tabular form below and hardly needs further comment.

Outdoor field meetings were apparently never regarded as of any special importance. A few summer excursions were arranged in the first two years, but by 1877 regret was being expressed at their lack of success, and at the difficulty of finding suitable leaders to run them. Things were no better in 1878, in 1879 the wet summer took all the blame, and in 1880 and 1881 there were no excursions at all.

There were several reasons for this general decline; a very important one was that Hillhouse left the town in 1877 to take up a scholarship at Cambridge and never returned. After graduation he became a lecturer and Assistant Curator of the University Herbarium, and in 1882 he was appointed Professor of Botany at Birmingham where he remained until ill-health compelled his retirement at the age of 59 in 1909. He died only four months later at the end of January 1910. Thus deprived of its main driving force, the botanical survey of the county came largely to a halt. None of the other members was apparently sufficiently interested to continue with it, although it was the only definite project which had been suggested. Without it the Society appeared to have had no clear idea of its own purpose or how its activities should be directed.

One naturally wonders why there was no obvious leadership forthcoming at this stage from Elger, the prime mover, but it must not be forgotten that he had weightier matters to cope with in 1878 when he became Mayor; even such an enthusiastic and energetic man as he could not concern himself with too many things at once.

However, the strangest part of the affair was the apparent helplessness of the Committee. This unwieldy body consisted of no less than eighteen members, of whom six were never replaced throughout the Society's first ten years, while a further five served for only one year less. Many of them were, individually, able and gifted men, but, collectively, they could never admit that anything was amiss, or that they had failed to discharge their duties, and, to the very end, the annual reports continued to stress the continued 'progress' and 'success' of a Society that was quite obviously moribund.

Ultimately the achievements of a natural history society can be judged only by the quality of its publications; on this basis the 1875 Society had very little to show for its brief existence despite its four printed volumes of Transactions. The important plant lists produced by Hillhouse and his helpers have already been mentioned; the only others of value are both due to the largely single-handed work of James Saunders, namely, the South Bedfordshire Plant List of 1882 and the Bryophytes List of 1883. No doubt there are many excuses that could be advanced for this meagre harvest, such as the difficulties of mid-Victorian travel and the obvious lack of enthusiasm and skilled leadership, but one feels that even a handful of members could have done so very much more if there had been some well-defined objectives to work for.

Although the Society continued its existence for a year or two after ceasing to publish its Transactions its condition can be judged by the fact that two of its founder members, Francis Crick and his son George, formed a new and much less ambitious Natural History Society in November 1888, and that in the following year it was finally amalgamated with the Bedford General Library. Its only asset of scientific value was its herbarium, the intended basis of the ill-fated revision of the flora; this was relegated to an attic in the Library building and allowed to rot there. Bedfordians will hardly need to be reminded of more recent events associated with that particular room.

It may seem that the disappearance of a short-lived Society nearly a century ago has little relevance to the survival of our own at the present day. We are in no danger of repeating one obvious mistake, that of continually re-electing an over-large committee of elderly and complacent men, more

concerned with social status than with the progress of their Society, but there are uncomfortable parallels with periods in our own past, when we have been collectively guilty of relying on the enthusiasm and efforts of the few to outweigh the apathy and inaction of the many. The basic cause of the old Society's downfall, however, was undoubtedly its failure to appreciate the importance of field-work in its own neighbourhood constituting its primary activity. Happily there appears to be increased awareness of this point at present in our own Society, but the fate of the older organization is a warning which, even now, we cannot afford to ignore.

Appendix

	Ordinary Meetings	Microscope Meetings	New Members
Inaugural Meeting 4 May 1875	-	-	59
Year ending 30 April	1876	12	73
	1877	11	17
	1878	8	15
	1879	7	8
	1880	5	3
	1881	6	3
	1882	8	2
	1883	8	3
	1884	4	0

RAY PALMER (1896 - 1975)

Older members of the society will have heard with much regret of the death in May of Ray Palmer, a founder member. He was born near to Wolverhampton but came to live at Letchworth while still a boy. An early interest in natural history was encouraged by his father who was also a keen naturalist. Ray soon became one of the rare breed of good general naturalists but throughout had a special interest in entomology and pond life. As honorary keeper of entomology at Letchworth Museum he set himself in 1921 the task of accounting for a number of hitherto little studied groups of organisms in the neighbourhood. He was one of the main contributors to The Natural History of the Hitchin Region (1934) which included in its survey much of south Bedfordshire. Some of the accounts included here from his pen still remain the basis of what is known of some organisms in our neighbourhood.

In the Second World War Ray Palmer joined the Ministry of Agriculture's war-time advisory service which brought him to live at Flitwick. He became the first editor of our journal setting a high standard which his successors have fortunately maintained. With his wide interests and his love of our countryside he was especially keen on nature conservation being one of the main members of the committee appointed, as soon as the society was formed, to draw up a list of sites in the county having a natural history interest. When the Nature Conservancy came into being this was used in making the schedule of Sites of Special Scientific Interest in the county.

Having been our editor for five years Ray Palmer left the county in 1952 to live first in Cornwall and subsequently near to Exeter. It will be no surprise to those who knew him to learn that his interest in natural history and nature conservation continued. At the time of his death he was voluntary warden of a nature reserve managed by the Devon Trust for Nature Conservation. It was

his wish that his collection of insects made between 1921 and 1952 should pass to the society and this will appropriately be housed at Luton Museum and Art Gallery with another collection made by him and presented to the Museum when he left the county. To his widow and his daughter, Mrs. Bell, who now lives in Vermont, U.S.A. we extend our sympathy in their loss.

JOHN G. DONY

LIST OF NEW MEMBERS WHO JOINED DURING 1974

c - Corporate

a - Associate

s - Student

- s Allin, Miss J.R.P., 628A Dunstable Road, Luton.
- Anstee, Mrs P.M., 9 Hawkins Road, Bedford.
- s Barber A.J., 56 Bull Pond Lane, Dunstable.
- Barker G.E., 4 Englands Lane, Dunstable.
- s Baxter, Miss C., 68 Richmond Hill, Luton.
- Bignell, Mrs. B.R., 26 Cedar Avenue, Biggleswade.
- Bradshaw, D., Bedford Road County Primary School, Kempston.
- a Bradshaw, Mrs L.M., 31 Miletree Crescent, Dunstable.
- Brown, Miss J., Tree Tops, West Hill, Aspley Guise, Milton Keynes.
- Bullard, B., 16 Little Heath, Gamlingay, Sandy.
- Bullard, Mrs G., 16 Little Heath, Gamlingay, Sandy.
- Chandler, M., 11 Orchard Way, Flitwick, Bedford.
- a Chandler, Mrs B., 11 Orchard Way, Flitwick, Bedford.
- Clark, A.J., 5 Stuart Street, Dunstable.
- s Clark, K., 5 Stuart Street, Dunstable.
- Clarke, Mrs D.A., 69 Putnoe Heights, Bedford.
- Clarke, Mrs D.S., 8 Eton Court, Pemberley Avenue, Bedford.
- Clarke, J.A., 6 Woodside Way, Linslade, Leighton Buzzard.
- a Clarke, Mrs M.A., 6 Woodside Way, Linslade, Leighton Buzzard.
- Conti, Mrs L., 70 Canesworde Road, Dunstable.
- s Cook, N.A., 17 The Buntings, Bedford.
- s Cook, J.C., 17 The Buntings, Bedford.
- s Corps, S., 4 Marlborough Road, Luton.
- s Dabson, S.J., 73 Chiltern Avenue, Bedford.
- Darrington, Mrs H.P., 18 Eagle Farm Road, Biggleswade.
- s Darrington, A.J., 18 Eagle Farm Road, Biggleswade.
- a Dony, Mrs C., 9 Stanton Road, Luton.
- s Drayton, S.P., 36 Brewers Hill Road, Dunstable.
- Duncan, R.B., 19 Brickfield Road, Renhold, Bedford.
- Duncan, Mrs S., 19 Brickfield Road, Renhold, Bedford.
- Ellis, Mrs J., 24 Clapham Road, Bedford.
- s Eyre, P.K., Three Ways, Leighton Road, Northall, Dunstable.
- Fagence, Mrs N.E., 11 Roseberry Avenue, Linslade, Leighton Buzzard.
- Fenton, Dr E.S.N., 31 The Ridgeway, Putnoe, Bedford.
- Fothergill, Mrs S.K., 264 Kimbolton Road, Bedford.
- s Gibbons, D.W., 5 Stratton Gardens, Luton.
- s Green, P., 77 London Road, Biggleswade.
- s Green, M., 77 London Road, Biggleswade.
- s Gregory, K., 203 Castle Hill Road, Totterhoe, Dunstable.
- Hackett, F., 36 Elmwood Crescent, Luton.
- Hall, Miss E.W., 166 Kimbolton Road, Bedford.
- Harding, B., 26 Woodlands Avenue, Houghton Regis, Dunstable.
- Hodbod, I., 32 Foxlease, Putnoe, Bedford.
- a Hodbod, Mrs E.M., 32 Foxlease, Putnoe, Bedford.
- Hooper, G., 108 Brookfield Road, Bedford.
- a Hooper, Mrs M., 108 Brookfield Road, Bedford.
- Janes, Dr N.F., 105 Montrose Avenue, Luton.
- s Janes, Miss L.M., 105 Montrose Avenue, Luton.

- a Johnson, Mrs K.M., 14 Sandy View, Biggleswade.
- Kemp-Gee, Miss J.E., Dell Farm, Whipsnade, Dunstable.
- s Kerridge, S.A., 17 Willow Way, Flitwick, Bedford.
- Langdon, R., 48 Heath Terrace, Leamington Spa, Warwicks.
- a Langley, Dr C.E., 183 Kimbolton Road, Bedford.
- Langley, Mrs C.E., 183 Kimbolton Road, Bedford.
- Linsell, Miss N., c/o Mrs. Oliver, Wandon End, Luton.
- Lynch, J.P., 82 Churchfield Road, Houghton Regis, Dunstable.
- Mahoney, Mrs L., 36 Stancliffe Road, Bedford.
- Mardle, G., 164 Stockingstone Road, Luton.
- Marks, Miss M.C., 3 Bedford Road, Clapham, Bedford.
- Miller, M., 1 Maltings Close, Cranfield, Bedford.
- a Miller, Mrs P., 1 Maltings Close, Cranfield, Bedford.
- Mitton, J., 85 Churchill Road, Dunstable.
- a Outen, Mrs J.E., 26 Lyall Close, Flitwick, Bedford.
- s Outen, Miss S.K., 55 Arundel Road, Luton.
- Plant, P.H., 85 Curlew Crescent, Bedford.
- a Plant, Mrs F.N., 85 Curlew Crescent, Bedford.
- Rundle, Dr A.J., 29 Burlington Avenue, Kew, Richmond, Surrey.
- Smith, G.E., 5 St. Nicholas Close, Tingrith, Milton Keynes.
- Stainton, P.G., 136 St. Neots Road, Sandy.
- s Standley, P.D., 34 The Buntings, Bedford.
- a Stevens, Mrs W.L., 6 Windsor Road, Barton-le-Clay, Bedford.
- s Taylor, Miss A.V., 22 Stratton Gardens, Luton.
- s Tiller, J.A.R., Brenesca, Eggington, Leighton Buzzard.
- Tirrell, J.J., 43 Oak Crescent, Biggleswade.
- a Tirrell, Mrs A.M., 43 Oak Crescent, Biggleswade.
- Titchmarsh, J.E., 61 Poplar Avenue, Bedford.
- Titley, Mrs A.S., 17 Hookhams Lane, Salph End, Renhold, Bedford.
- a Townsend, Miss M.E., 85 Curlew Crescent, Bedford.
- Toyler, Miss C.M., 29 Norman Road, Barton-le-Clay, Bedford.
- Walpole, P.W., 5 Granve Avenue, Leagrave, Luton.
- s Webb, M., 185 Tithe Farm Road, Houghton Regis, Dunstable.
- Williamson, K., 55 Rosslyn Crescent, Luton.
- a Woods, J.F., 23 Knights Avenue, Clapham, Bedford.
- Woods, Mrs. M., 23 Knights Avenue, Clapham, Bedford.
- s Woods, Miss T., 23 Knights Avenue, Clapham, Bedford.
- s Woods, C., 23 Knights Avenue, Clapham, Bedford.
- s Woods, S., 23 Knights Avenue, Clapham, Bedford.
- s Woods, Miss F., 23 Knights Avenue, Clapham, Bedford.
- a Wyatt, Dr L.A., 70 Brecon Way, Bedford.
- s Yerbury, C.M., 56 De Parys Avenue, Bedford.

It is with regret that we record the deaths of the following members during 1974:

- In January, Miss E. Herring, a member since 1955.
- In August, Miss V. Herring, a member since 1955.

