

The Bedfordshire Naturalist

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

1985

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1986

BEDFORDSHIRE NATURAL HISTORY SOCIETY 1986

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THE BEDFORDSHIRE NATURALIST

No. 40 (1985)

Edited by C.R. Boon

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REPORT OF THE COUNCIL

The Council is pleased to report that the Society has continued to prosper during 1985. Membership has remained at the 1984 level of 447. Even so the Council decided that, during our 40th year, we should make a special effort to promote the Society within the county. To this end a publicity committee was established during the year and the Society has already gained some new members from its activities.

A wide range of interesting field meetings and indoor meetings was held during the year, and were well attended. The All Night Meeting at Maulden Wood, the One Day Courses at Shuttleworth Agricultural College and the Yorkshire Weekend once again proved to be very popular and the Council passes on its thanks to the organisers.

The winter programme included talks given by members of the Society as well as outside speakers and reflected the wide range of interests within the Society. The joint meeting of the B.N.H.S., the Royal Society for the Protection of Birds, the Beds and Hunts Wildlife Trust and the National Trust, which took the form of a film evening, was a success and a small profit was made. Members' evenings continue to be popular and some of the highest attendances have been at these meetings.

One of the most pleasing improvements has been the continued increase in the standing of the Society as a consultative body regarding conservation. Many organisations now seek the advice of the Society before carrying out work which might affect habitats and the County Council now consults the Society as a matter of routine in cases where there might be a natural history interest.

It is with regret that the Society learned recently of the deaths of Mr J.M. Dymond and Mr A. W. Guppy, both of whom were long-standing members and made important contributions to the Society and to the knowledge of natural history within the county.

The council would like to pass on its sincere thanks to all the many members who have helped the Society by organising meetings, courses and field trips; to the late Roy Wagstaff for the *Muntjac* and to Chris Boon, the editor of the *Bedfordshire Naturalist*.

DAVE KRAMER

	1982	1983	1984	1985
Ordinary Members	354	345	348	351
Associate Members	58	64	62	63
Student Members	28	24	17	14
Corporate Members	11	10	11	10
Life Members	5	5	5	5
Honorary Life Members	4	4	4	4
	460	452	447	447

Table: Membership of the Society over the last four years

PROCEEDINGS

Indoor Meetings

- 522nd Ordinary Meeting** 3rd January, Bedford. Members' evening. Chair: Mr R.B. Stephenson.
- 523rd Ordinary Meeting** 8th January, Dunstable. Members' evening. Chair: Mr H. Pegg.
- 524th Ordinary Meeting** 17th January, Luton "Mountain Flora of East Africa" by Dr B. Verdcourt. Chair: Dr J.G. Dony.
- 525th Ordinary Meeting** 29th January, Leighton Buzzard. "Butterflies and Moths of Bedfordshire" by Mr V.W. Arnold and Mr A.J. Martin. Chair: Mr M. Sheridan.
- 526th Ordinary Meeting** 6th February, Bedford. "A Ranger's view of the countryside" by Mr D. Hillyard. Chair: Mr S. Halton.
- 527th Ordinary Meeting** 12th February, Dunstable. "Some rare Bedfordshire flowers" by Mr C.R. Boon and "Weeds in my garden" by Mr D.G. Rands.
- 528th Ordinary Meeting** 19th February, Ampthill. Twitchers' evening. Chair: Mr B. Nightingale.
- 529th Ordinary Meeting** 28th February, Luton. Members' evening. Chair: Mr V.W. Arnold.
- 530th Ordinary Meeting** 7th March, Bedford. "The Snakes of Britain" by Mrs H. Muir-Howie. Chair: Miss R. Brind.
- 531st Ordinary Meeting** 12th March, Dunstable. "Wild Sri Lanka" by Mr C. Banks and Mr B. Barton. Chair: Mr D. Anderson.
- Annual General Meeting** 28th March, Flitwick.
- 532nd Ordinary Meeting** 3rd October, Bedford. "Expedition to the Antarctic" by Mr G. Hyden. Chair: Mr R. Revels.
- 533rd Ordinary Meeting** 15th October, Dunstable. "To fresh woods and pastures new" by Dr J.G. Dony. Chair: Mr C.R. Boon.
- 534th Ordinary Meeting** 24th October, Luton. Members' evening. Chair: Mr V.W. Arnold.
- 535th Ordinary Meeting** 31st October, Flitwick. "In search of dragons and damsels" by Mr S. Cham. Chair: Mr D.G. Rands.
- 536th Ordinary Meeting** 6th November, Bedford. "Uncommon Bedfordshire flowers" by Mr C.R. Boon. Chair: Mrs E.B. Rands.
- 537th Ordinary Meeting** 19th November, Dunstable. "Hedgehogs" by Dr P. Morris. Chair: Mr D. Anderson.
- 538th Ordinary Meeting** 27th November, Ampthill. Members' evening. Chair: Mr C.R. Boon.
- 539th Ordinary Meeting** 5th December, Bedford. "Holiday in Kenya" by Mr D. Kramer. Chair: Mr D.G. Rands.
- 540th Ordinary Meeting** 17th December, Dunstable. Slides from the Royal Photographic Society Nature Group Exhibition. Chair: Mr R. Revels.

Correction to the 1984 Indoor Meetings (*Bedf. Nat.* 39 6):

- 520th Ordinary Meeting** 5th December 1985, Bedford. "Insect migration and insect management at home and abroad" by Professor G.W. Schaefer. Chair: Mr T. Hollingworth.
- 521st Ordinary Meeting** 18th December 1984, Dunstable "Icelandic Summer" by Mr M. Amphlett. Chair: Mrs M. Sheridan.

FIELD MEETINGS

- Stockgrove Park** 27th January. A winter walk. Leader: Mr M. Sheridan.
- Solway Firth** 16th - 18th February. Weekend trip to see flocks of wintering wildfowl. Leader: Mr D. Green.
- River Ouse, Bedford** 24th March. The natural history of the river bank. Leader: Miss R. Brind.
- Ashridge Forest.** 19th April. Badger watch. Leader: Mr S. Halton.
- Cople Pits** 28th April. Study of amphibians. Leader: Mrs H. Muir-Howie.
- Barton Hills** 5th May. To count the Pasque flowers. Leader: Mr J. Burchmore.
- Dropshort Marsh, Toddington.** 9th May. Study of marsh plants. Leaders: Mr R. Fryett and Mr S. Halton.



*Small mammal trapping in Maulden Wood, 29th September 1985. Derek Rands holding a Bank Vole.
(Photo: C.R. Boon)*

Barkers Lane Gravel Pit 12th May. Birdwatching. Leader: Mr D. Kramer.

Everton 15th May. Walk along green lanes. Leader: Mr R.V.A. Wagstaff.

Maulden Wood 19th May. Demonstration of bird ringing. Leaders: Mr P. Wilkinson and team.

Stockgrove Park 22nd May. Evening walk to see Lily-of-the-Valley. Leader: Mr S. Halton.

Odell Great Wood. 2nd June. To study and photograph the wide variety of flowers. Leader:
Mr C.R. Boon.

Charle Wood, nr. Aspley Heath 4th June. An evening birdwatching. Leader: Mr P. Smith.

Sewell Cutting 11th June. The flora of the nature reserve. Leader: Dr J.G. Dony.

Yorkshire 14th - 16th June. Annual weekend trip. Leader: Mr V.W. Arnold.

Maulden Wood 22nd - 23rd June. Annual all-night meeting and barbeque. By kind permission of the Forestry Commission. Organiser: Mrs E.B. Rands.

Amphill Park 25th June. Bird song and life in freshwater habitats. Leaders: Mr J.P. Knowles and Mr D.J. Odell.

Thursley Heath, nr Guildford 7th July. Study of dragonflies, reptiles, bog and heath plants. Leader: Mr S. Cham.

Melchbourne Park 12th July. Trapping and identifying bats and moths. By kind permission of the Hon. H. de B. Lawson Johnson. Leaders: Mr V.W. Arnold and Mr C. Banks.

Tiddenfoot Pit, Linslade. 17th July. Natural history of a waterside habitat. Leader: Mr M. Sheridan.

Bernwood Forest, Oxfordshire 21st July. General natural history especially butterflies. Leader: Mr R. Revels.

- Potton Wood** 28th July. General natural history. Visit by kind permission of the Forestry Commission. Leader: Mr J. Green.
- Great Barfoot** 7th August. Evening walk along the River Ouse. Leader: Miss R. Brind.
- Bison Hill, Whipsnade** 18th August. Chalk downland flowers and butterflies. Leader: Mr S. Halton.
- Incombe Hole nr Ivinghoe** 28th August. Flora and butterflies. Leader: Mr P. Moles.
- Shuttleworth Agricultural College** 8th September. One day course on a variety of natural history subjects. By kind permission of the Principal. Course Organiser: Mrs E.B. Rands.
- Harrold-Odell Country Park** 15th September. Dragonflies and pond life. Leader: Dr B.S. Nau.
- Thetford** 21st September. The regular Muntjac population investigations in the Thetford area. Leader: Mr S. Cham.
- Maulden Wood** 29th September. Small mammal trapping. By kind permission of the Forestry Commission. Leader: Mr D.G. Rands.
- Norfolk Coast** 6th October. Birdwatching trip. Leader: Mr D. Green.
- Richmond Park** 20th October. To watch deer rutting. Leaders: Mr S. Cham and Mr R. Revels.
- Ravensdell and Mansgrove Woods, Studham** 27th October. The annual fungus foray. By kind permission of Mrs C. Horton. A joint meeting with the Mycological Society. Leader: Dr D.A. Reid.
- Stewartby Lake** 24th November. Birdwatching at the lake. Leader: Mr A. Tomczynski.
- Blackwater Estuary** 29th December. To see winter waders and wildfowl. Leader: Dr B.S. Nau.

REPORT OF THE TREASURER

Another satisfactory year, income and expenditure for the Current Accounts, the costs of running the society, show a slight profit of £41. In addition, further publications to a value of £102 have also been sold.

Our expenditure has been held down and income is higher, due to the increase in the membership subscription.

There is a reduction in the figure for the hire of halls, but much of this is because room hire for council and committee meetings is now charged to the relevant account (appearing under Administration, Membership or Scientific sundries).

Our main expenditure, printing costs for the Journal and for the programmes show only a slight increase, in line with inflation.

Interest on the Deposit Accounts continues to rise and was £1721 in 1985 helping to increase our total assets to £18,765.

Further amounts have been invested during the year. £3,000 was re-invested with Nottingham City and a further £6,000 invested with other authorities as listed on the Balance Sheet.

M.R. CHANDLER

INCOME AND EXPENDITURE ACCOUNT FOR YEAR ENDED 31st DECEMBER 1985

INCOME - Current Accounts

1984		1985
£		£
1294	Subscriptions	1699
61	Sales	34
-4	Surplus on meetings	27
20	Sundries	10
1371		1770

EXPENDITURE - Current Accounts

1984		1985
£		£
	ADMINISTRATION	
37	Postage	44
8	Sundries	33
32	Insurance	36
10	Auditors' Honorarium	10
87		123
	MEETINGS	
189	Hire of Halls	125
61	Lecturers and Films	37
149	Programmes	153
399		315
	SCIENTIFIC	
1038	Journal	1099
10	Recorders' Expenses	32
6	Site Recording	9
8	Sundries	15
1062		1155
	PUBLICITY	
146	Newsletter	95
43	Application Forms	-
5	Advertising and Displays	12
194		107
	DEPRECIATION	
52	of equipment	29
52		29
-423	Excess of Income over Expenditure	+41
1371		1770
	PUBLICATIONS ACCOUNT	
854	Brought Forward	922
70	Income	102
2	Expenditure	-
922		1024

DEPOSIT ACCOUNTS — Interest		
551	City of Nottingham Bonds	525
218	East Staffs Co. Co. Bonds	210
93	Redbridge Borough Bonds	93
62	Southend-on-Sea B.C. Bonds	—
—	Leicester City Bonds	41
463	Bank Deposit Accounts	852
1387		1721

1984 BALANCE SHEET AS AT 31st DECEMBER 1985 1985

FIXED ASSETS		COST DEPRECIATION			
		Total	Year		
30	Books and Journals	10	5		25
12	Screen	20	10	2	10
6	Projector	60	60	6	—
11	Duplicator and Stand	110	110	11	—
45	Malaise and Mammal Traps	50	10	5	40
				29	75
CURRENT ASSETS					
210	Bank Current Account				69
8097	Bank High Interest Cheque Account				2865
51	Cash in Hand				48
—	Leicester City Council Bonds [to 15.5.86 @ 10.875%]				1000
3000	City of Nottingham Bonds [to 30.6.88 @ 10.5%]				3000
3000	City of Nottingham Bonds [to 30.6.87 @ 13.25%]				3000
2500	East Staffs D. C. Bonds [to 10.9.89 @ 12%]				2500
1000	Redbridge Borough Bonds [to 5.8.86 @ 13.25%]				1000
—	Worthing B. C. Bonds [to 28.11.91 @ 10.75%]				3000
—	Edinburgh City Bonds [to 31.3.89 @ 10.75%]				2000
17858					18482
—	Debtor				249
CURRENT LIABILITIES					
1053	Creditors [uncleared cheques]				41
£16909					£18765

M.R. Chandler
Honorary Treasurer

M. and D. Reading
Honorary Auditors

METEOROLOGY

Report of the Recorder

WEATHER REPORT FOR 1985

1985 contained several notable weather events, some of which may be long remembered. The early winter produced some of the severest winter weather for several years, spring, after initial promise, was badly delayed, and many people wondered where summer had gone, only for October to produce the hottest day of the year in many places. Winter returned early in November, and although milder weather prevailed throughout most of December the year finished on a decidedly chilly note.

At the start of the year, very cold air from continental Europe moved steadily into Britain bringing three weeks of severe wintry weather to Bedfordshire. Snowfall was frequent but generally light, and the ground was snow-covered for up to 20 days. The coldest spell was from the 13th to the 18th with the temperature continuously below freezing. The coldest night of the year, with air temperatures down to -15.6°C , occurred on the 17th. Even the maximum temperature that day failed to rise higher than -4.3°C in many places! Many inland waters froze over but this took some time following the much milder weather of the previous December.

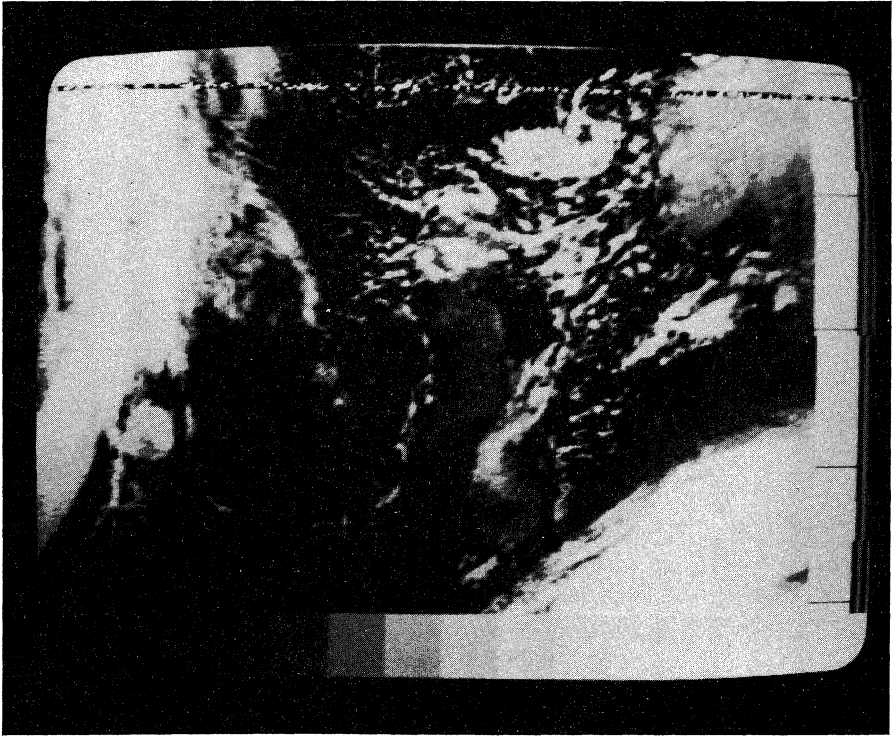
After a milder interlude, temperatures again plummeted at the end of the first week in February commencing with a substantial snow fall of 10 to 15cm on the 8th. Bedfordshire was only just on the cold side of the boundary with milder air to the south and very little snow in adjacent areas of Hertfordshire. Further snow fell on the 9th but with little drifting in the generally light winds. Sunday the 10th of February was a remarkable day. Despite brilliant sunshine throughout the day, the air temperature did not rise above -3°C , and the very strong easterly wind produced exceptional wind chill in the conditions. The wind also caused severe drifting of the lying snow and by early afternoon many minor roads were blocked or impassable. The weather continued very cold, but dry and sunny until the last week and the snow slowly but eventually disappeared. Following the cold weather of January most inland waters were quickly frozen over, except for small open leads at Stewartby.

March was more variable but generally rather cold with frequent frosty nights, particularly mid-month. April started with some good spring-like weather but turned colder in the second half with persistent northerly or easterly winds. The afternoon of the 27th was remarkable for a short spell of very heavy snow during which a light aircraft crashed near Sharpenhoe Clappers killing all four occupants. The snow occurred despite temperatures as high as 10°C earlier in the day. April was also one of the driest months of 1985. May in contrast was wet and the first half was also dominated by cold winds from between north and east. However, temperatures recovered to rise to 22°C by the end of the month.

June, often one of the best months of the year, was decidedly cold and wet in 1985. Winds were often from a northerly or easterly direction again, and as much as a fifth of the entire year's rainfall fell in this one month. The first half of July promised well for the rest of the summer with many warm sunny days, and the peak 27°C or so on the 13th was the hottest day of the year in some places. Unfortunately, the remainder of July, and even more so August, was often cloudy and cool with light rain or showers. Most people seem to recall the summer of 1985 as a particularly dismal one, perhaps following the warm summers of the previous three years.

September was perhaps the best month of the summer, and day time temperatures were generally higher than in August over most of Bedfordshire. The month was also very dry and often sunny, particularly in the last week which produced a succession of gloriously warm and sunny days following early mist and fog. This superb early autumn weather continued into October where the first day of the new month produced the hottest day of the year in some places (27.8°C at Bedford for example). Daytime temperatures fell thereafter, but the month was predominantly dry with winds in the second half predominantly from the east or southeast. This led to early frost and fog on several days from the 20th.

November, in contrast to the previous year, was decidedly wintry after the first week. The wind was often from between north and east with frequent night frosts and light snow fell on four quite widely separated days, but without lying very long. After this early start to the winter December



Infra-red weather map from NOAA Satellite 28th December 1985.

(Photo: M. Williams)

was noticeably much milder with no snow and very little frost. A short lived incursion of very cold air just after Christmas gave three very cold nights and light snow gave a crisp white look to the landscape under the clear starry skies, too late unfortunately for seeing the much heralded Halley's Comet. This was visible through a telescope as a faint smudge on a few clear nights in early November, but cloud or the full moon gave few further chances for observing this celestial celebrity.

We have all become familiar with the use of satellite pictures to illustrate TV weather forecasts and over the Christmas period I was fortunate to have the loan of the necessary equipment, to the intriguing glances of our neighbours who I suspect thought the dish aerial on the roof was intended as a display of one-upmanship in the receipt of satellite TV! The accompanying picture shows an infra-red display taken on the evening of December 28th. The British Isles can be clearly seen in the centre of the picture with a band of cloud giving light snow over East Anglia and London. A further line of snow showers is moving down the Irish Sea, while large masses of cloud associated with warmer air are visible to the west. Such pictures are invaluable to professional weather forecasters, but also provide an immediate and fascinating picture of the weather for all to see.

I reproduce once again a summary of the year's weather recorded at the National Institute of Agricultural Engineering at Silsoe. The description of 1985's weather in Bedfordshire is based additionally on records from Luton, Barton, Bedford and Sandy with rainfall records only from

many other sites. Thanks go to Mrs R. Taylor at Silsoe, various wardens at The Lodge, Sandy, and to the Anglian and Lea Valley Water Authorities for their help.

MIKE WILLIAMS

Month	Mean Max°C	Mean Min°C	Highest Temp°C	Lowest Temp°C	Rainfall mm	Sunshine Hours	Air Frost	Ground Frost	Snow Falling	Snow Lying
January	3.4	-3.1	11.3	-15.2	37.7	41.3	24	30	17	16
February	4.8	-2.8	13.4	-14.4	16.5	73.4	15	21	4	12
March	8.5	0.3	14.9	-5.5	33.0	101.2	14	24	5	2
April	12.7	3.9	19.0	-4.2	13.3	130.1	4	10	1	0
May	15.0	6.1	21.2	0.8	46.4	137.6	0	7	0	0
June	17.3	8.2	23.1	2.5	107.6	161.2	0	6	0	0
July	21.5	11.4	26.7	6.7	51.2	200.6	0	0	0	0
August	19.4	10.9	25.1	4.8	32.7	168.2	0	1	0	0
September	19.6	10.0	25.3	2.5	17.4	129.5	0	1	0	0
October	15.2	6.9	27.4	-1.5	16.1	99.0	2	10	0	0
November	7.0	0.4	15.9	-6.2	44.3	79.0	14	17	4	1
December	9.2	4.4	15.9	-7.0	86.9	35.5	5	6	1	2
Year	12.8	4.7	27.4	-15.4	503.1	1356.6	78	133	32	33

MAMMALS

Report of the Recorder

1985 brings to an end 15 years of mammal recording for the county. This seems to be a good time to close the distribution maps, as further recording on the same maps will only fill in a few more dots and mask any future changes in distribution of species. Also it leaves another 15 year period to the end of the century and for this period I hope to concentrate on establishing population levels and studying the rarer species. Perhaps distribution maps can be started again in the year 2001 to check on the changes in distribution. A report on the 15 years from 1971 to 1985, together with the full distribution maps for all mammal species recorded in the County of Bedfordshire, is printed elsewhere in this Journal.

1985 seems to have been a quiet but good year for mammals, producing no major changes. Several species were well recorded, probably indicating an increase in population numbers and included Water Shrew, Long-eared Bat, Brown Hare, Fallow and Chinese Water Deer. Records were obtained for 28 of the 37 known species in the county producing 89 new tetrad records and four new 10 Km. square records, the latter being sent on to the National Distribution Mapping Centre at Monk's Wood.

Hedgehogs were seen from the 8th April to the 5th December, the first being a healthy 2lb 4oz. male, but the last a very borderline 1lb female, this being the minimum weight necessary to survive through hibernation. Several members kept records of hedgehogs visiting their gardens and food bowls, but Mrs Sparksman of Sharpenhoe was visited during the year by over 30 different individuals, all of which were marked, weighed and sexed, a very worthwhile and interesting study that I compliment her on, and recommend others to try. Active Bats were seen even earlier in the year, from the 2nd April. Six new Long-eared Bat records were obtained, although two animals were found dead on the ground, an unusual event for so small-bodied a species.

The Brown Hare was reported by a considerable number of members as having a good year, with ten seen at one site, but smaller numbers at other sites. No Dormice were seen at all, but three Fat Dormice were found at their regular site in Whipsnade Zoo, but nowhere else in the county.



Badger emerging from its sett at Stockgrove Park, Heath and Reach.

(Photo: A. Woodgate)

Small mammal reports produced two new site records for Water Shrew, a good return for this secretive species. From the results of 125 trap nights, small mammal numbers were found to be higher than 1984, but not as good as 1983. Species showing an increase were Short-tailed Vole, Common and Pygmy Shrews, but Wood Mice and Bank Vole numbers were down, although the Wood Mouse is still the most common small mammal species. National trapping results also showed that 1985 was a good year for this group of species, due it is thought to the good beech and acorn crop in the autumn of 1984.

Several 'Black' Squirrels were reported from different locations, mainly in the south of the county. This colour phase of the Grey Squirrel is not uncommon, but is rarely seen in more than one animal per site. It seems to be more common in North America, which is the original home of our animals. Two new sites for Mink were reported along the River Ouse, although this is a decline from the rate of spread in previous years. One Mink was reported as killed on a road, while another one, this time seen alive, was noted as black in colour, a result of the selective breeding in fur farms, from which all our animals originated. As mentioned in the 1984 report, Stoats were again more common than Weasels, resulting in two new tetrad records for the Stoat, but none for the Weasel.

Badger numbers held steady, but five animals were known to have been killed on the roads. The low number of only 21 Badger watches were known to have been made but gave better than usual adult numbers seen, but much lower than usual cub numbers, compared to the high cub numbers seen in 1984. The usual sett visit checks were made, and it is pleasing to be able to report that one long disused sett has not only become active again but what can only be described as 'very active', with spoil heaps six feet or higher outside the entrance holes. This shows that one can never write

off an old sett, and it is always worth checking every few years. The re-active sett was last recorded as 'just active' in 1974, with no sign of use since then. Although the sett is located in an area of good Badger density, the land use surrounding it has changed from agricultural to housing, so the prospects of re-use did not look good.

Our deer also had a good year, Fallow being seen in many sites and Chinese Water Deer, always a problem species with very low numbers, being seen at five sites. The Red and Sika Deer are still present in the area outside Woburn Park, where they have lived for the past two years, but they showed no signs of going further afield.

The now annual 'Mammal-thon' was held again in July, and was won by Don Green and myself. We managed to see only seven species in the 24 hour period allowed, although we only used eight hours of that period. The teams that took part all enjoyed themselves, as well as having the pleasure of looking at animals, testing their field skills, and learning about our mammal species. My congratulations to all who took part.

For the sake of historical completeness, the new 1985 tetrad records are listed below. If added to the distribution maps published in the Journal for 1974 (*Bedf. Nat* 29 36-39) and the update lists published each year since then, they will give a full record of the distribution of the mammal species that have been found in Bedfordshire since 1st January 1971.

- Hedgehog** *Erinaceus europaeus* — 2 tetrads. 06N,14B.
Mole *Talpa europaea* — 21 tetrads. 92I, 95D, 02LM, 04Y, 05EFGHIJLMP, 06AEFNQ, 23CJ.
Common Shrew *Sorex araneus* — 4 tetrads. 92P, 93K, 95Y, 12J.
Pygmy Shrew *Sorex minutus* — 2 tetrads. 12J, 13F.
Water Shrew *Neomys fodiens* — 2 tetrads. 92W, 13F.
Bat — 4 tetrads. 92J, 03L, 06H, 13F.
Common Long-eared Bat *Plecotus auritus* — 6 tetrads. 92W, 93MQ, 03TU, 11J.
Pipistrelle Bat *Pipistrellus pipistrellus* — 2 tetrads. 05A, 14F.
Rabbit *Oryctolagus cuniculus* — 4 tetrads, 05PW, 06K, 23C.
Brown Hare *Lepus capensis* — 4 tetrads. 93Y, 05P, 14W, 15K.
Bank Vole *Clethrionomys glareolus* — 5 tetrads. 02Z, 03R, 05A, 12J, 24I.
Short-tailed Vole *Micotus agrestis* — 8 tetrads. 92P, 93K, 95Y, 05A, 12J, 13Z, 14W, 24I.
Water Vole *Arvicola terrestris* — 1 tetrad. 03D.
Harvest Mouse *Micromys minutus* — 1 tetrad. 24C.
House Mouse *Mus musculus* — 2 tetrads. 05A, 13Z.
Wood Mouse *Apodemus sylvaticus* — 7 tetrads. 93K, 03LQ, 05A, 12EJ, 23I.
Brown Rat *Rattus norvegicus* — 1 tetrad. 93K.
Grey Squirrel *Sciurus carolinensis* — 3 tetrads. 95D, 12J, 13Z.
Fox *Vulpes vulpes* — 2 tetrads. 95D, 12J.
Badger *Meles meles* — 4 tetrads. 02Y, 05Y, 06H, 15D.
Mink *Mustela vison* — 2 tetrads. 05BE.
Stoat *Mustela erminea* — 2 tetrads. 92R, 05I.
Chinese Water Deer *Hydropotes inermis* — 1 tetrad. 92P.
Muntjac Deer *Muntiacus reevesi* — 3 tetrads. 95D, 03QR.

The people who contributed these records are listed below, consisting of 30 members and 14 non-members making a total of 44 people in all. My thanks go to them for their time and effort, as it is these people that make this report possible.

D. Anderson, V. Arnold, C. Banks, R. Bradshaw, B. Bright, R. Brind, J. Brown, C. Burton, J. Carruthers, A. Catchpole, R. Catchpole, S. Cham, R. Clay, B. Clutton, B. Drayton, J. Green, M.J. Green, S. Halton, J. Harris, G. Hooper, M. Hooper, B. Inns, D. Johnston, J. Kemp-Gee, D. Manning, A. Muir-Howie, H. Muir-Howie, B. Munn, S. Nichols, B. Nightingale, D. Odell, D. Rands, R. Revels, M. Rowland, L. Smith, M. Sparksman, R. Spicer, B. Squires, B. Stephenson, A. Summerfield, C. Tack, K. Taylor, P. Trodd, C. Ward.

DAVID ANDERSON

DISTRIBUTION OF BEDFORDSHIRE MAMMAL SPECIES 1971-1985by **D. Anderson**

Prior to 1971 very little mammal recording was undertaken in Bedfordshire and the BNHS Journals only recorded the occasional sighting. It was therefore agreed to start recording mammal species on a tetrad basis — a 2Km by 2Km square used by most disciplines of natural history. The maps show the total distribution for each of the 37 species listed in Table 1 from the 1st January 1971 to the 31st December 1985. The maps show only the presence of a species in each tetrad obtained from a live animal sighting, certain unmistakable signs — such as molehills — or from a dead body. If there is any doubt as to a sighting or species it is not recorded. The maps do not therefore show population, or the presence of a breeding group, but reference to the card record file maintained by the Society would give some clue to this by the existence of a species in any area over a period longer than the life expectancy of any one animal. Most mammal species have home ranges not greater than the size of a tetrad so most separate records can be taken to come from different animals.

Species	Species
Hedgehog	Harvest Mouse
Red-necked Wallaby (Bennet's W.)	House Mouse
Mole	Yellow-necked Mouse
Common Shrew	Wood Mouse
Pygmy Shrew	Brown Rat
Water Shrew	Grey Squirrel
Basbastelle Bat	Fox
Daubenton's Bat	Badger
Brown Long-eared Bat	Ferret
Natterer's Bat	American Mink
Noctule Bat	Otter
Pipistrelle Bat	Stoat
Rabbit	Weasel
Brown Hare	Chinese Water Deer
Dormouse	Fallow Deer
Edible Dormouse (Fat D.)	Muntjac Deer (Barking D.)
Bank Vole	Red Deer
Short-tailed Vole (Field V.)	Sika Deer
Water Vole	

Table 1. Mammal species recorded

Bedfordshire is one of the smallest British counties, having an area now of only 477 sq. miles, or 123,492 hectares. The altitude ranges from 18 metres up to 242 metres. These conditions tend to limit the variety of species that could live in the county, but do mean that the whole county is available to those species that are present. However, the land use of the county varies from industrial and housing to large field size monoculture farming. Both of these conditions are poor for mammals. There is little woodland and rough pasture, and few rivers and lakes, all of which will limit the population and variety of our mammals. In view of these conditions it is pleasing that the county does as well as it does. Its geographic position puts it at the northern limit of a number of species — Dormouse, several bats etc. — which add to our species list but not much to our population. The only evidence of migration in British mammals is for a small number of bats coming across the English Channel from mainland Europe. In Bedfordshire it can be taken that no species is migratory and that any species recorded is present throughout the whole year. As has

Address: 88 Eastmoor Park, Harpenden, Herts AL5 1BP

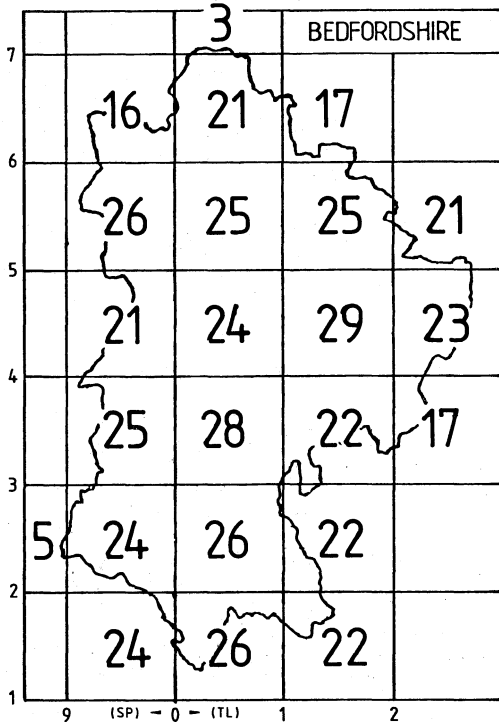
already been mentioned, the home range of mammal species is small and there is no evidence of any species moving in and out of the county from adjacent areas on a seasonal basis. The rate of records obtained over the 15 year period (Table 2) follows a constant pattern of decreasing returns,

Year	No. of Sp.	Year	No. of Sp.	Year	No. of Sp.
1971	25	1976	34	1981	36
1972	26	1977	34	1982	36
1973	30	1978	35	1983	36
1974	31	1979	36	1984	37
1975	33	1980	36	1985	37

Table 2. Cumulative number of species recorded at the end of each year, 1971-1985

supporting the position that the distribution maps show an accurate record. Although the records obtained must show some bias towards the residence and field working areas of the recorders themselves, efforts have been made to cover the less well populated areas, which the returns shown on the maps support. Of the 377 whole or part tetrads in Bedfordshire, over 98% have records from them, while the five unrecorded tetrads (SP93C, TL15Z, 23B, 24R, 25D) have only a few square yards in Bedfordshire. Where a tetrad is only partly in Bedfordshire, only that part of the area in the county is covered by the records presented here. 3689 tetrad records have been obtained for 37 different species, giving an average of just under 10 species for each tetrad.

Map 1 shows the number of different species recorded for each 10Km. square. It is interesting to see that high species richness is not confined to squares having their whole area in the county and some



Map 1. Number of species recorded in each 10Km square, 1971-1985.

areas, like TL12 and TL16 with 22 and 17 species respectively, have only a small part of their area in Bedfordshire.

Table 3 shows the abundance of the species as a percentage of the total possible number of tetrads (377). It is thus possible to list the species into five groupings from common, those which occur in more than 50% of tetrads, to vulnerable, those occurring in fewer than 5% of tetrads.

Many of the species shown on the distribution maps have originated from introductions or escapes. Wallabies come from Whipsnade Zoo in very low numbers and are not found to exist for long in the wild. The Edible Dormouse was released at Tring park early in the century and is found in small numbers in the SW corner of Bedfordshire. It is stable but very vulnerable. The Grey Squirrel was first released at Woburn Park and is now nationally widespread and found everywhere in high numbers. Ferrets are lost animals from Rabbit hunters, usually recorded two or three times each year but not found to live for long in the wild, with no signs of breeding. This cannot be said for the Mink, which was first recorded in 1979 and has increased every year since then, with the young of breeding animals expanding into new areas — so far only

Species	Tetrads		Group	
	No.	%		
Rabbit	342	90.7	Common (50-100%)	
Mole	299	79.3		
Harvest Mouse	280	74.3		
Brown Hare	243	64.4		
Hedgehog	239	63.4		
Brown Rat	208	55.2		
Grey Squirrel	198	52.5		
Fox	197	52.3		
Wood Mouse	172	45.6		Frequent (25-49%)
Common Shrew	167	44.3		
Short-tailed Vole	158	41.9		
Stoat	149	39.5		
Weasel	145	38.5		
Muntjac Deer	136	36.1		
Bank Vole	109	28.9		
Badger	99	26.3		
Water Vole	85	22.5	Scarce (10-24%)	
House Mouse	79	21.0		
Pygmy Shrew	68	18.0		
Pipistrelle Bat	41	10.9		
Water Shrew	31	8.2	Rare (5-9.9%)	
Chinese Water Deer	24	6.4		
American Mink	20	5.3		
Brown Long-eared Bat	18	4.8	Vulnerable (0-4.9%)	
Fallow Deer	16	4.2		
Ferret	13	3.4		
Daubenton's Bat	6	1.6		
Red Deer	6	1.6		
Noctule Bat	4	1.1		
Natterer's Bat	4	1.1		
Edible Dormouse	4	1.1		
Yellow-necked Mouse	3	0.8		
Dormouse	3	0.8		
Sika Deer	3	0.8		
Wallaby	1	0.3		
Barbastelle Bat	1	0.3		
Otter	1	0.3		

Table 3. Abundance of mammal species

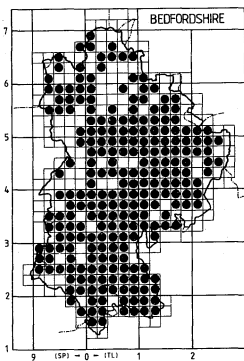
along the River Ouse in the north of the county. Chinese Water Deer, Muntjac Deer and Sika Deer have all escaped from Woburn Park, but with varying success in the wild. Chinese Water Deer exist in the SW corner of the county in small numbers, although stable but vulnerable to disturbance and hard winters. They are found in very few other areas of England. The Muntjac Deer is now found over all of Bedfordshire and much of the rest of England as well. It is a good coloniser and is in no danger. The Sika Deer are a recent escape from Woburn and show no signs of increasing their area or of breeding. Other herds in England show similar characteristics and the future of our animals does not look strong. Feral species that exist in some parts of Britain, such as

cats and dogs, have not been recorded in Bedfordshire and can be taken to not exist here in the wild.

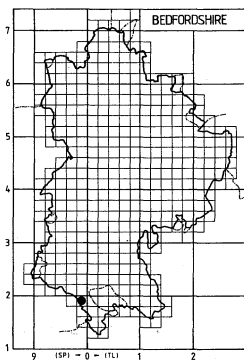
Considering changes in population or even presence in the county, only one Otter record has ever been obtained and that right at the start of the survey in 1971. It is unlikely any Otter has visited the county since then, and can not now be considered as a Bedfordshire species. Similarly, the Barbastelle Bat has had only one record, in 1976, and is unlikely to be still present in the county. The long term effects of myxomatosis has produced, with the recovery of Rabbit numbers, an increase in Stoat numbers, with a related decline in Weasel numbers. However, the decline of the Weasel population is in no way a threat to its existence, but just that it will maintain a lower level than it did in 1971.

The distribution maps of Bedfordshire are part of the overall British scheme. Bedfordshire has records for 37 species, while Britain has records for 59 land species plus two marine seals. There are no major shortages in Bedfordshire compared to adjacent counties, although it is possible that we could have got a few records of four bat species — Whiskered, Brant's, Leisler's and Serotine — and possibly, in years to come, the Roe Deer which appears to be coming to us from the East, although care must be taken to identify it correctly from Muntjac and Chinese Water Deer. The one species Bedfordshire is low on compared to local counties is the Yellow-necked Mouse which, despite active searching, has not been found in the numbers the national maps would suggest likely. However, its numbers in Bedfordshire as shown by the distribution map are considered to be accurate. On the positive side, Bedfordshire is of national importance for Fat Dormouse and Chinese Water Deer, and is still important for Muntjac Deer, no other county having the high level of population that is found here, although its overall distribution is much wider than for the other two species.

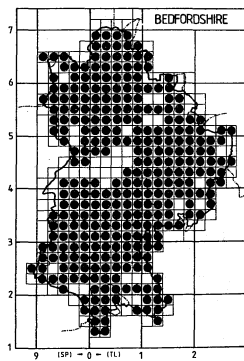
The understanding of the mammal species to be found in Bedfordshire is colossal compared to the position before 1971, and one we can all be very proud of. The work has been done by a very large number of people to whom goes the credit for a good job, as well as my sincere thanks.



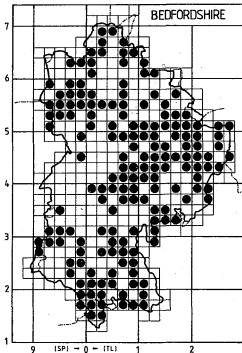
Hedgehog
Erinaceus europaeus



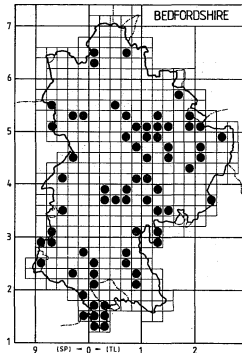
Red-necked Wallaby
Macropus rufogriseus



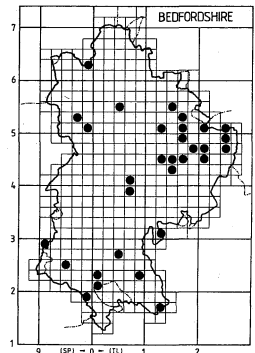
Mole
Talpa europaea



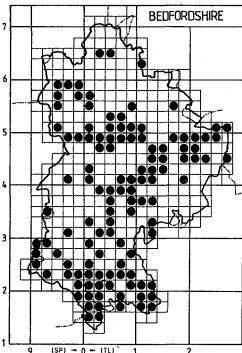
Common Shrew
Sorex araneus



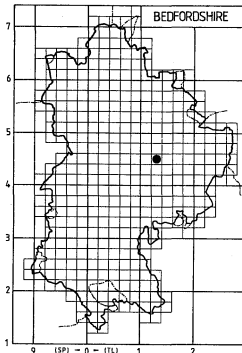
Pygmy Shrew
Sorex minutus



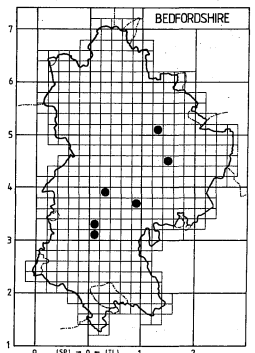
Water Shrew
Neomys fodiens



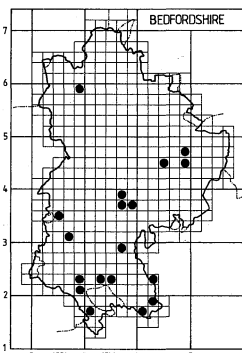
Bat species



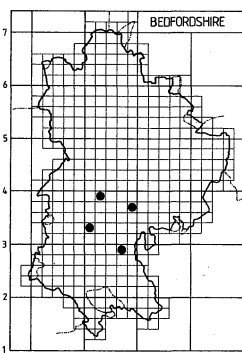
Barbastelle Bat
Barbastella barbastella



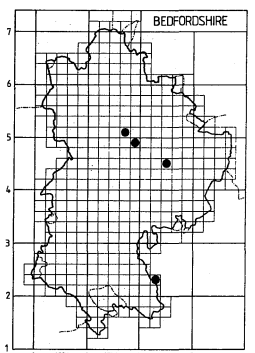
Daubenton's Bat
Myotis daubentoni



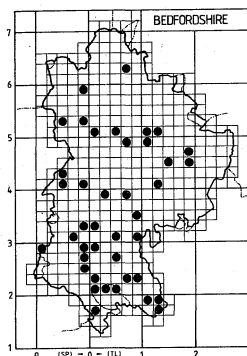
Brown Long-eared Bat
Plecotus auritus



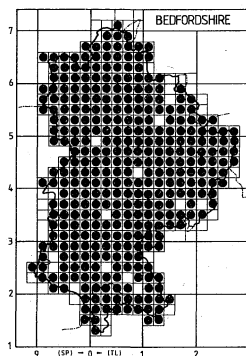
Natterer's Bat
Myotis nattereri



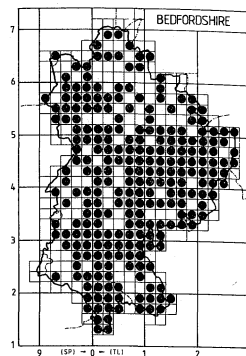
Noctule Bat
Nyctalus noctula



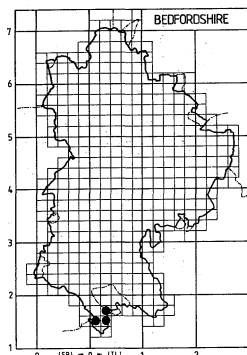
Pipistrelle Bat
Pipistrellus pipistrellus



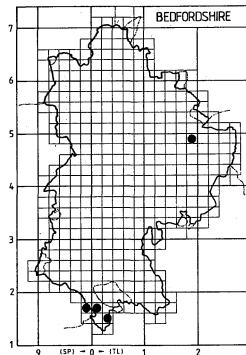
Rabbit
Oryctolagus cuniculus



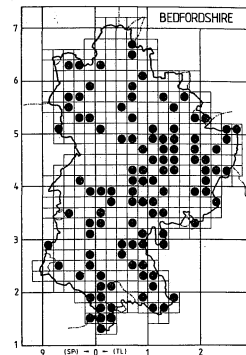
Brown Hare
Lepus capensis



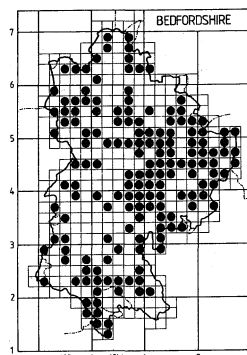
Dormouse
Muscardinus avellanarius



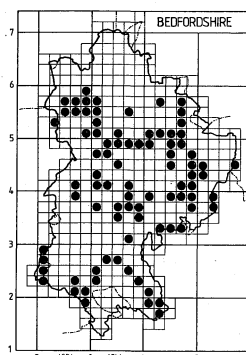
Edible Dormouse
Glis glis



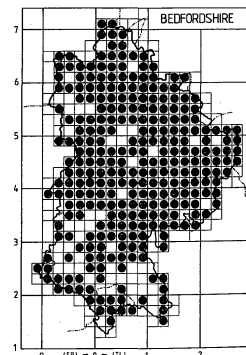
Bank Vole
Clethrionomys glareolus



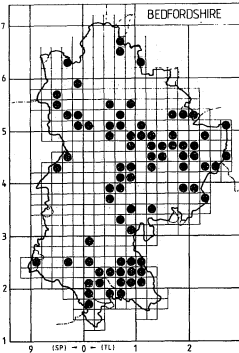
Short-tailed Vole
Microtus agrestis



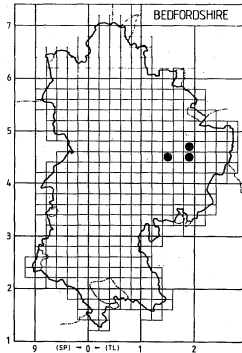
Water Vole
Arvicola terrestris



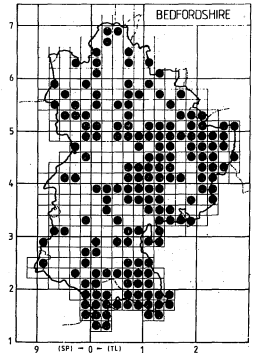
Harvest Mouse
Micromys minutus



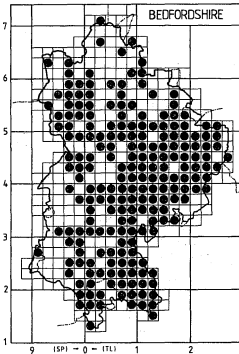
House Mouse
Mus musculus



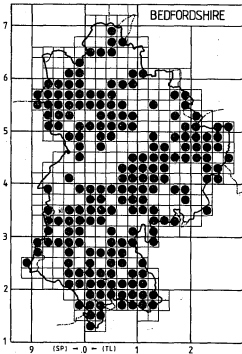
Yellow-necked Mouse
Apodemus flavicollis



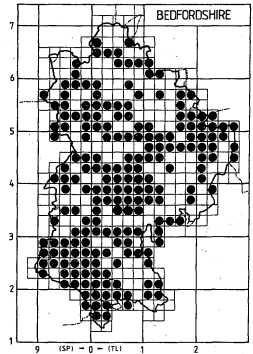
Wood Mouse
Apodemus sylvaticus



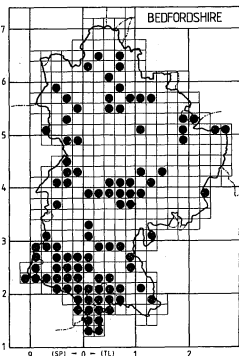
Brown Rat
Rattus norvegicus



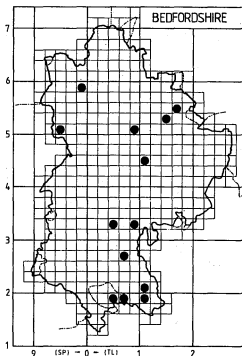
Grey Squirrel
Sciurus carolinensis



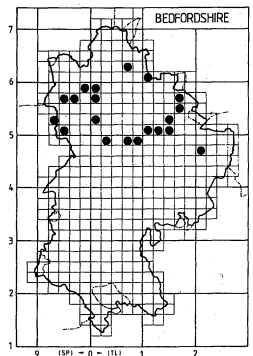
Fox
Vulpes vulpes



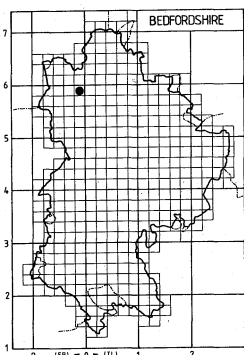
Badger
Meles meles



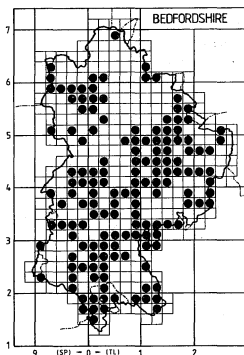
Ferret
Mustela furo



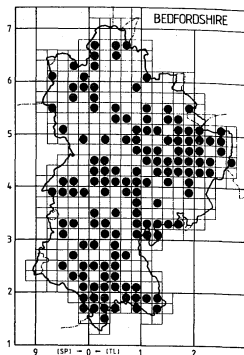
American Mink
Mustela vison



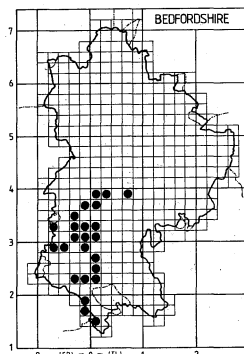
Otter
Lutra lutra



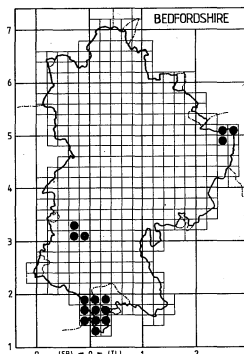
Stoat
Mustela erminea



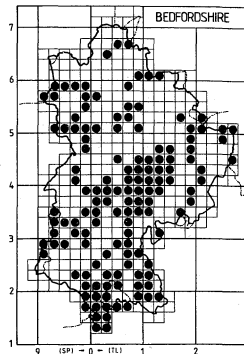
Weasel
Mustela nivalis



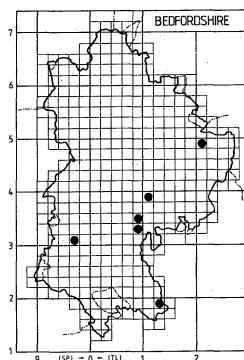
Chinese Water Deer
Hydropotes inermis



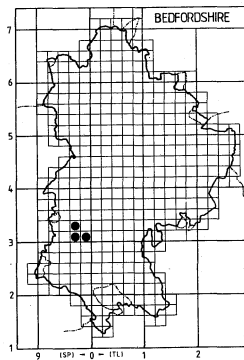
Fallow Deer
Dama dama



Muntjac Deer
Muntiacus reevesi



Red Deer
Cervus elaphus



Sika Deer
Cervus nippon

BIRDS

Report of the Recorder

INTRODUCTION

In the wake of Siberian weather conditions in January and February came the most exciting period ever known in the county. Cold northerly air arrived over south east Britain on 6th January with heavy snowfalls, followed on the 12th by freezing easterlies. Most smaller waters were frozen and therefore activity in the county largely centered around Stewartby Lake, which throughout had some surface water free. Although milder weather returned on 21st January severe weather again on 6th February, with heavy snow, brought more interesting records.

A brief summary of the highlights which appeared during this period include Black-throated Diver, up to four Red-necked Grebes, Black-necked Grebe, Bewick's Swans, a party of six Bean Geese, several Smew and Red-breasted Mergansers. A Bittern was seen flying over Luton Hoo, there were Whooper Swans at Blunham, two or three Hen Harriers, a Merlin, up to four Red-crested Pochards, probably up to four Glaucous Gulls, Great Grey Shrike, Black-tailed Godwit, Kittiwakes and Slavonian Grebe. A Scaup at Brogborough Lake on 12th January was the first in the county since 1976 and was to start a series of somewhat controversial records. The attraction was not limited to rarities however and several regular species occurred in impressive numbers — Great Crested Grebes peaked at 240 at Stewartby, 24 Cormorants flew over Blunham and in mid-January influxes of Wigeon, Pintail, the diving ducks, Ruddy Duck and Goosander were all apparent, as well as out of season Knot and Ruff.

By comparison, apart from two Rock Pipits and a Red-breasted Merganser, March produced little until the arrival of the first Wheatear, Ring Ouzel and Chiffchaff in the last few days, heralding the expected rush in April. However, unfavourable weather conditions delayed much movement until a warm spell around the middle of April brought Black Redstarts, Whinchat, Nightingale, more Ring Ouzels and many of the warblers, most of which arrived much earlier than normal. More unexpected was a Water Pipit, a male Golden Oriole in Bedford, a scatter of Sandwich Terns and Little Gulls. At the end of the month there occurred a spectacular movement of Kittiwakes, with 100 at Barkers Lane on 27th April, and of Arctic Terns, with 183 at Stewartby Lake on 28th April and 126 at Barkers Lane the next day.

The main influx of summer migrants had found their northward passage inhibited by unfavourable conditions but after the winds had turned to the east on 11th May many species including Swallows and House Martins became more obvious. However much of the attention was stolen by the less usual migrants such as Red-crested Pochard, Firecrest, Pied Flycatcher and Little Terns. In what was generally a poor year for wading species in Bedfordshire, Sanderlings at Harrold and Stewartby, Bar-tailed Godwit at Stewartby and a Knot in Rookery clay pit were of note. However the star of the month was a male Rose-coloured Starling, only the third in the county, which stayed at Henlow for three days.

The breeding season was not without its highlights either. Ruddy Duck bred in the county for the first time and Shelduck consolidated its status by breeding at three sites. Up to eight pairs of Hobby were present, as were 20 pairs of Sparrowhawk; Long-eared Owl bred again, and Nightingale had a good year. On the negative side the numbers of Kingfishers were down, as were Grey Wagtail, Dunnocks and Robins, no doubt all casualties of the hard winter, yet surprisingly some species, such as Wren, did not seem to suffer. Nightjars were completely absent from the county for the first time in memory.

Autumn was disappointing, caused in part by a lack of suitable wader habitat in the county. However three Egyptian Geese over Dunstable sewage works on 11th August were considered worthy enough to be added to the county list, four Red-crested Pochard at Harrold continued a remarkable year for that species; two Little Stints and a good number of both Arctic and Black Terns were noteworthy.

October brought Slavonian Grebe to Harrold, Bewick's Swans to Brogborough and a Wryneck to The Lodge, Sandy.

November has been an exciting month in recent years and 1985 proved no exception, particularly for birds of prey, with Hen Harrier, Buzzards and Merlin appearing whilst wildfowl

included Smew, White-fronted Geese and Whooper Swan, all at Brogborough. Most notable however was a Pomarine Skua which stayed at Stewartby for five days, and an Iceland Gull at Brogborough — both only the second county records.

December was not to be outdone with Velvet Scoter — only the third record — Red-necked Grebe, Short-eared Owl and Red-crested Pochard, all of which stayed into 1986.

So ended a most memorable year in which 176 species were recorded, many of them rare. As usual I was assisted in vetting these by the local rarities committee consisting of Dr Tim Sharrock, Arthur Livett and Barry Squires, and my thanks go to them and particularly the latter who helped with the compilation of this report.

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SYSTEMATIC LIST FOR 1985

Species recorded in Bedfordshire during 1985 in usual numbers and not included in the systematic list are: Kestrel; Pheasant; Black-headed Gull; Herring Gull; Woodpigeon; Tawny Owl; Green Woodpecker; Great Spotted Woodpecker; Nuthatch; Treecreeper; Jackdaw; Rook; Starling.

English and Scientific names follow the "British Birds" List of Birds of the Western Palearctic (1978).

The following abbreviations are used in the text: BTO = British Trust for Ornithology; CBC = common bird census; CHP = chalk pit; CLP = clay pit; CP = country park; GP = gravel pit; L = lake; R = river; Res = reservoir; SP = sand pit; SW = sewage works.

Black-throated Diver *Gavia arctica* Single Stewartby L 19th January to 2nd February (DJO, SGW, LE *et al*).

Little Grebe *Tachybaptus ruficollis* Breeding records from South Mills GP and Houghton Regis CHP, with two pairs at each: East Hyde, Steppingley Res, Vicarage Farm CLP, Luton Hoo each with a single pair. No large winter gatherings reported.

Great Crested Grebe *Podiceps cristatus* Impressive counts at Stewartby L during the hard weather, with 55 on 6th January, building up to a peak of 240, with numbers remaining high until 17th February. The largest count elsewhere was 33 at Radwell GP 17th March.

Breeding records from the following localities: Barkers Lane one pair (one young); Dunstable SW one pair (one); Grovebury Farm SP one pair; Houghton Regis CHP nesting attempted with no success; Harrold CP one pair (one); Luton Hoo three pairs (three); Lidlington CLP one pair; Stewartby L one pair (two); R. Ouse Tempsford to Willington two pairs unsuccessful; Tiddenfoot L one pair (three), Vicarage Farm CLP one pair.

Red-necked Grebe *P. grisegena* A single which stayed from 1984 remained in the Stewartby/Millbrook area until at least 10th February. It was joined by a second on 19th and 20th January. A third, considered to be different, was at Brogborough L 22nd January, and another at Stewartby L 22nd February (MJP, AT *et al*). One at Harrold CP 24th December stayed into 1986 (DJO, LE, DSW *et al*).

- Slavonian Grebe** *P. auritus* Single Elstow CLP on 20th February was found dead on 24th February, being eaten by Coots (CW, AT, PT *et al.*). Also single Harrold CP 12th to 18th October (DSW).
- Black-necked Grebe** *P. nigricollis* Single Stewartby L 18th to 22nd January (MJP, LE, AT *et al.*)
- Cormorant** *Phalacrocorax carbo* Seen in every month, except July, and at a total of 16 sites. Particularly numerous in the harsh weather, including nine on 6th January at Millbrook, nine at Stewartby L on 13th with another four at Brogborough L and four over Whipsnade Zoo on the same day. Another influx in February with seven at Brogborough L on 19th, an impressive 24 over Twin Bridges Pit 23rd and 12 at Barkers Lane on 24th. Passage in March and April returned to normal levels, including five over Whipsnade Zoo in 17th March, two at Stewartby L 3rd April, two Houghton Regis CHP the same day, six over Whipsnade Zoo on 5th, seven at Barkers Lane the same day, five there on 16th and seven on 17th. In May six were at Barkers Lane on 16th, with many singles elsewhere. Finally in spring the last were four at Chimney Corner CLP on 1st June and one at Brogborough L on 3rd. September records included four at Stewartby L on 13th, seven over Whipsnade Zoo on 30th, and then in October seven at Barkers Lane on 8th. A marked passage took place in mid-November including five at Stewartby L on 16th and in December four or five at Blunham on 18th December with many singles elsewhere.
- Bittern** *Botaurus stellaris* Single over Luton Hoo 19th January (LE) and an unconfirmed report of one at Harrold CP 27th February (per DSW).
- Grey Heron** *Ardea cinerea* The only breeding report came from Luton Hoo with five nests, at least four of which were occupied. No records from either Southill L, where birds were certainly present, and Bromham Park. A post breeding group of 17 had gathered at Barkers Lane on 30th July, increasing to 25 by 8th August.
- Mute Swan** *Cygnus olor* Breeding records as follows: Barkers Lane one nest with seven young, none surviving; near Newnham Pool, Bedford nest with four young; Harrold CP with five and six young from two nests with a third nest deserted; Felmersham NR nest built, success unknown, but seven young seen nearby; East Hyde four young seen on R Lea; South Mills GP nest with five young; Dunstable SW failed nest; Brogborough L nest four young; Vicarage Farm CLP two nests with four and five young. Mid-summer counts included 16 adults on Stewartby L and 18 adults on R Ouse between Tempsford and Willington. At Radwell GP 30 were present on 24th December.
- Bewick's Swan** *C. columbianus* Impressive influx during January with 21 over Carlton on 4th and then three which stayed near Stewartby L from 18th to 20th, whilst on 19th three at Barkers Lane, single Luton Hoo, five over East Hyde, seven by R Ouse at Kempston with possibly the same seven at Biddenham. Five at South Mills GP on 25th January moved to Blunham L on 26th and 27th where they associated with a Bar-headed Goose. The same five, still with their exotic companion, were seen at Roxton GP on 29th.
- In the latter part of the year a more typical situation with two at Brogborough L 27th October, seven over Harrold CP on 10th November, three at Radwell GP 9th December and lastly two at Brogborough L 27th December.
- Whooper Swan** *C. cygnus* The two feral birds at Blunham were joined by two wild individuals on 10th January, staying until 19th. They were relocated at South Mills GP on 25th January, subsequently seen at Blunham L 26th and 27th, and were probably the same as two seen by R Ouse east of the A1 on 29th (JTRS, PNH, IKD *et al.*). One over Brogborough rubbish tip on 17th November was seen later the same day over Stewartby L (AT, JGJ).
- Bean Goose** *Anser fabalis* Six seen flying over Brogborough L 12th January were probably the first wild occurrence in the county this century (MJP).
- White-fronted Goose** *A. albifrons* A single with Canada Geese 23rd January at Stewartby L (MJP, AT). Nine flew west over Brogborough L 16th November (LE). See also under 'Escapes'.
- Greylag Goose** *A. anser* The only breeding reports were from Harrold CP with 16 adults and 20 young, and from Brogborough L with a pair and single young. Impressive counts made at Harrold CP included 161 on 13th January, 246 on 16th September and a peak of 404 on 13th October. At Radwell GP the highest numbers were present during August with a peak of

300 on 17th. At Blunham L a peak of 247 was counted on 19th January. Smaller numbers were seen at many other sites, mostly in single figures, but 69 were counted by R Ouse at Turvey on 28th December.

Canada Goose *Branta canadensis* Breeding records from Luton Hoo with 42 adults and 21 young, Harrold CP with 14 adults and 30 young, Brogborough L with six adults and 28 young, Elstow CLP four adults with brood, Vicarage Farm CLP two adults with six young, Chimney Corner CLP 12 adults with five young.

Peak numbers occurred between September and November. Flocks are based in the brick pit area with a maximum of 400, in Woburn Park with a peak of 340, Luton Hoo with 320, Radwell/Harrold with 170, Grovebury Farm SP with 138 and Southill L with 50, which would suggest an estimated county total of between 1400 and 1500. See also under 'Escapes'.

Canada Goose x Greylag One showing features of both species present at Harrold CP during June.

Barnacle Goose *B. leucopsis* The following reports were received: single in the Millbrook — Stewartby — Brogborough area from 3rd January until March; two in the Radwell area from 13th January until 2nd March and a single Chimney Corner CLP 12th January, all records which coincided with other hard weather immigrants. Three appeared at Harrold CP on 16th September staying in the area until 29th December, two were at Woburn L 30th October, and one in Luton Hoo 22nd to 28th November with presumably the same at East Hyde 8th December. Two at Brogborough L 9th September were joined by a third on 22nd, increased to five by 6th October, with one staying at Stewartby L for most of December. Correspondence with The Wildfowl Trust suggests that some of these records are likely to be wild birds, originating from the Russian population which winters in the Netherlands, and the late autumn records from birds overshooting their normal wintering grounds in Solway. However free-flying young have been raised by captive birds in Hampshire since the late 1970's, so that Bedfordshire records could equally originate from these or other feral populations. Certainly one in Luton Hoo from 4th March until 23rd August must be considered to be of captive origin.

Brent Goose *B. bernicla* One at Elstow CLP 31st March (DPT), and almost certainly the same at Chimney Corner CLP on 4th April (LE). An immature found at Radwell GP on 22nd December stayed in the vicinity until 1986 (DSW *et al.*).

Egyptian Goose *Alopochen aegyptiacus* Three over Dunstable SW on 11th August have been accepted as the first county record (PT).

Shelduck *Tadorna tadorna* Breeding records from Grovebury Farm SP, where two ducks hatched 17 eggs, but with just two young surviving, Radwell GP where a pair had one young which did not survive, and at Vicarage Farm CLP where a pair raised two young. Several records during the hard weather, mainly of one or two birds, but there were three at Blunham L 10th January, four at Stewartby L 20th January and six there 13th to 15th February. A spring influx included four at Barkers Lane 3rd April with three there on 21st May, three Rookery CLP 22nd April and nine at Barkers Lane 15th May. In the autumn much less frequent, but nine at Millbrook on 22nd August were noteworthy, and then at the end of the year peak numbers were seen on 27th December with three at Brogborough L and another four at Stewartby L.

Mandarin *Aix galericulata* Breeding records from Luton Hoo, where one pair raised six young, and Eversholt L where a pair hatched five young. Elsewhere a duck was found in breeding habitat near Flitwick Moor in late April to early May, a duck at Tempsford in late May and two at Twin Bridges Pit mid-June. Woburn remains the focal point in the county, where a peak of 35 was counted during the year with also 20 drakes on 16th February. Elsewhere two at Barkers Lane from 6th January into February, a pair on 13th May, and then again from 19th July to the year end. A drake was in Swiss Gardens, Old Warden on 1st December and there were two at Harrold CP same day.

Wigeon *Anas penelope* Large influx in mid-January during the severe weather with the highest counts in the Stewartby/Millbrook area with 267 on 13th rising to 300 on 20th. At Brogborough L the peak occurred on 13th January with 81, Barkers Lane held 200 on 6th January, 175 on 13th January with the last two lingering until 23rd March. Also in January

there were 69 at Blunham L on 12th, 139 at Harrold CP on 2nd, 250 at Radwell GP on 6th staying at this level until 27th. Smaller numbers were seen in Luton Hoo, with a peak of 26 on 10th, Dunstable SW, East Hyde, Lidlington CLP, Chimney Corner CLP, Grovebury Farm SP and Steppingley Res. A late bird was seen at Vicarage Farm CLP on 12th May. The earliest to return in autumn was at Whipsnade Zoo on 30th August, followed by a small passage during September. Typically numbers in the second winter period were much lower than in the first with the main influx occurring in a cold spell at the end of December, with 17 at Stewartby L on 29th, 145 at Radwell GP also on 29th and 46 at Barkers Lane on 31st.

Gadwall *A. strepera* No definite breeding records but summer reports included two at Barkers Lane 3rd June, a pair seen mating in Luton Hoo 11th June, a pair plus drake at Stewartby L 19th May, a pair Blunham L 14th May, four at Vicarage Farm CLP on 6th May with a drake there on 4th June, and a pair at South Mills GP 18th May. Although the species was widespread during the winter, with reports from 14 sites, numbers remained low, at about the 1984 levels. The peaks were at Luton Hoo with seven on 17th January, 16 at Stewartby L 12th January, 28 at Blunham L/Twin Bridges 23rd February and 54 at Dunstable SW on 1st January. In the second winter period counts in double figures were only recorded from Dunstable SW with 55 on 7th December, 41 at Blunham L 30th December, 15 Luton Hoo 19th November and ten at Barkers Lane 31st December.

Teal *A. crecca* Breeding took place at South Mills GP with a pair present during the summer and four young seen.

Winter numbers generally were low with peaks during the first period as follows; 45 at Blunham L 12th January and 40 Southill L same day, 50 Stewartby 19th January, 70 Barkers Lane 27th, 67 Radwell GP 2nd February and 25 Luton Hoo 20th February. No other site held more than 19 birds although records were received from 16 localities. The earliest in autumn were three at Chimney Corner CLP 8th September, but numbers did not build up until November when there were 65 at Millbrook on 3rd, 53 at Barkers Lane on 23rd, 56 Southill L on 24th and then in December 38 at Luton Hoo on 15th, 88 at Barkers Lane on 29th and also 88 at Radwell GP same day.

Mallard *A. platyrhynchos* Numbers were down from the 1984 levels. There was however a small influx during January with 100 Luton Hoo on 6th, 100 Dunstable SW same day, 170 Blunham L on 12th, with 115 at Grovebury Farm SP and 460 at Southill L same day. 216 were counted at Stewartby L 17th February but the most favoured site was Harrold CP with 300 on 21st August, 550 on 24th November and 600 on 1st December. Also in the latter part of the year 250 at Grovebury Farm SP 27th October, 220 Battlesden L 20th October and 437 Southill L 24th November.

Pintail *A. acuta* More records than usual during January with up to four at Brogborough L, a peak of ten at Stewartby, two Luton Hoo 9th, two Barkers Lane on 31st, and four over Elstow CLP 29th. In March singles Dunstable SW 2nd to 6th, and Barkers Lane on 11th. Towards the end of the year singles Dunstable SW 2nd November, two on 4th November staying until 7th December, two at Stewartby L 17th November and lastly one at Harrold CP 21st December.

Shoveler *A. clypeata* Three young were raised at Dunstable SW. A pair attempted to breed in Houghton Regis CHP but failed. Small influx during January with four at Luton Hoo on 17th, three at Stewartby L 13th, two Harrold CP on 6th, 16 at Blunham L on 5th and four at Woburn L on 12th. During the rest of the year most regularly seen at Dunstable SW with a peak of 67 on 21st October.

Red-crested Pochard *Netta rufina* A remarkable year for this species with probably ten individuals involved. The first was a drake at Blunham L on 12th January, coinciding with a cold weather influx of other species, followed by a duck which stayed at Brogborough L from 25th to 31st January, another duck at Blunham L 27th January and a drake there on 2nd February. Another drake stayed at South Mills GP from 12th to 24th May and then a drake and three ducks were seen at Harrold CP on 21st August. Finally a drake at Brogborough L from 1st December into 1986, when it was joined by a duck (AT, LE, PNH, JTRS, DJO, MJP *et al*).

Pochard *Aythya ferina* No breeding records but a drake was seen at Vicarage Farm CLP 4th June. Noticeable hard weather influx in January with 500 Brogborough L on 1st, 169 Stewartby L, 101 Chimney Corner CLP, 40 Blunham L all on 12th, 80 at Barkers Lane on 6th increasing to 114 by 31st. Numbers peaked at Stewartby L on 18th with 247.

An autumn build up occurred again at Brogborough L but failed to reach the levels of the last two years. 226 were counted on 9th September, increasing to 383 on 17th, with 310 still there on 23rd October.

Tufted Duck *A. fuligula* Breeding records from eight sites. The winter peak occurred during the hard weather with 151 at Brogborough L 13th January and 130 at Blunham on 8th. Later in the year 67 at Barkers Lane 4th April, 69 Dunstable SW 12th October and 142 Blunham L 30th December. No other site held more than 40.

Scaup *A. marila* The first was a female at Brogborough L 12th January (AT, MJP, DJO) followed by another duck at Barkers Lane 26th January to 10th February (DJO, DK *et al*), a drake on R Ouse at Barkers Lane 27th January to 28th February (DK, DHB), two ducks and an immature drake South Mills GP 2nd to 3rd February (DJO *et al*), three drakes and a duck Stewartby L 26th April (LE, DHB, DJO), a drake Radwell GP 31st August to 29th September (MJP, DHB, DJO *et al*) and finally a duck Brogborough L 27th November to 29th December (MJP, AT *et al*). This was a remarkable series of records particularly considering that prior to 1985 only 16 records of Scaup had been accepted for the county, the last in 1976.

The local rarities committee also considered, but rejected, the following records on the grounds that the points of confusion surrounding *Aythya* hybrids had not been discounted. Particularly details concerning bill pattern, eye colour and overall shape were lacking. Recent literature (*British Birds* 79:87-89) has drawn attention to the high incidence of scaup-type hybrids in the Midlands, perhaps as high as 20% of all "scaup" records.

A duck Stewartby L 17th to 18th January, immature drake Barkers Lane 25th to 27th January, female on R Ouse Kempston 27th January, duck or immature drake Blunham L 2nd to 4th February, duck at Elstow CLP 15th February to 31st March and duck Lidlington CLP 29th December.

Common Scoter *Melanitta nigra* A poor year with just two at Brogborough L 2nd April, single Barkers Lane 7th April, ten Stewartby L 27th October and a single 2nd November. (LE, DHB, TP *et al*)

Velvet Scoter *M. fusca* An immature male seen at Stewartby L 19th, 20th and 24th December was relocated at Millbrook on 25th, and then at Lidlington CLP on 27th where it stayed into 1986. This was the third county record. (DHB, AT, BN *et al*)

Goldeneye *Bucephala clangula* Good numbers in January with 20 at Brogborough L on 1st, 15 on 12th with up to nine staying for most of February. There were eight at Harrold CP and five at Barkers Lane from 5th January, the last staying there until 2nd March. At Harrold CP numbers peaked in February with 15 on 4th, with between 11 and 15 staying until 23rd March. There was evidence of an early spring influx at Brogborough L with six on 27th March, 12 on 29th, six on 5th April and finally three on 8th April.

Return passage was first noted at Harrold CP with one on 2nd November and two at Radwell GP the next day. Numbers built up during December with nine at Brogborough L on 8th, 11 on 13th and 26th, and eight at Harrold CP on 25th.

The feral population was present at Blunham L all year.

Smew *Mergus albellus* Excellent year for this species with displaced continental birds first arriving in the main hard weather movement on 12th January with four at Stewartby L. There were up to four at Stewartby/Brogborough until 23rd January when numbers increased to seven, with a further increase on 25th with five at Stewartby L and another five at Dunstable SW, these staying until 26th, and one there from 29th January to 1st February. The five at Stewartby L stayed until 27th January but on 28th there were none reported from anywhere in the county. Two were seen Stewartby L 30th January and a single on 3rd February. No more until 9th February when there were four at Stewartby/Millbrook. There were two at Stewartby L on 14th February, four on 15th, six on 16th which stayed at Millbrook until 3rd

March, when they were joined by a seventh bird. The last was seen there on 8th March. All records referred to "redheads". Later in the year a "redhead" at Brogborough L 27th November and a drake same locality 8th December (LE, DJO, WHD, AT, DHB, MJP *et al*)

Red-breasted Merganser *M. serrator* In comparison with the previous species surprisingly few with the only hard weather record of four at Stewartby L on 19th January. A duck was seen on R Ivel, Sandy on 6th-7th March and another at South Mills GP 17th to 22nd April (AT, BN, CW, IKD, LE *et al*)

Goosander *M. merganser* Two stayed at Barkers Lane from 1984 until 6th January. There were no more in the county until 12th January when seven appeared at Brogborough L, with four staying until 15th. On 16th there were four at Stewartby L and 16 in Luton Hoo, with a different 17 there on 17th with also five at Stewartby L. Three remained in Luton Hoo on 18th. Another movement on 19th with 24 at Stewartby L increasing to a maximum of 38 on 20th when there were nine at Barkers Lane. Numbers fluctuated widely at different times of the day and it is likely that a continuous passage was occurring. None were reported on 21st but 14 on 22nd at Stewartby L decreasing to eight on 23rd with just two on 25th, when there were four at Brogborough L. Ten at Stewartby L on 26th, four still at Brogborough L increasing to five on 27th, with six at Stewartby L, eight at Radwell GP and one at Blunham L. Three in Luton Hoo on 28th, with nine at Radwell GP and three at Barkers Lane staying until 30th. Numbers then declined sharply with the next report on 3rd February with four on Woburn L and then none until 10th February with nine at Radwell GP and one at Barkers Lane, with three there on 13th. Six were found at Stewartby L on 15th, seven on 16th, singles at Brogborough L on 17th and Luton Hoo on 18th. Two flew over R Ouse at Kempston on 19th which may have been the same two at Harrold CP on 23rd, when there were also two at Stewartby L. Two at Barkers Lane on 24th. Then a typical early spring movement with four at Barkers Lane 2nd March, one on 4th, five over The Lodge, Sandy on 9th and one Barkers Lane on 19th. Finally two at Harrold CP from 8th to 14th April ending the most impressive sequence ever recorded in the county. A return to normal in the second winter period with three at Stewartby L 21st November, possibly the same at Barkers Lane the same day, five there on 22nd, seven on 23rd and then a different bird on 1st December. Singles Dunstable SW 30th November, Brogborough L 1st to 8th December and finally one at Stewartby L 25th December.

Ruddy Duck *Oxyura jamaicensis* One at Harrold CP 5th January, followed by a single at Brogborough L 9th, staying until 10th, when there were five found at Stewartby L, increasing to eight on 12th. An increase to nine on 18th, seven between 23rd and 26th, ten on 27th, six on 28th and then no further reports until 3rd February when one at Stewartby L and six at Harrold CP. A single Stewartby L 15th to 24th February with one at Brogborough L on 19th probably the same. One at Harrold CP 2nd March and one at Brogborough L 11th-12th March. In autumn two Dunstable SW 15th August and one Brogborough L 17th September.

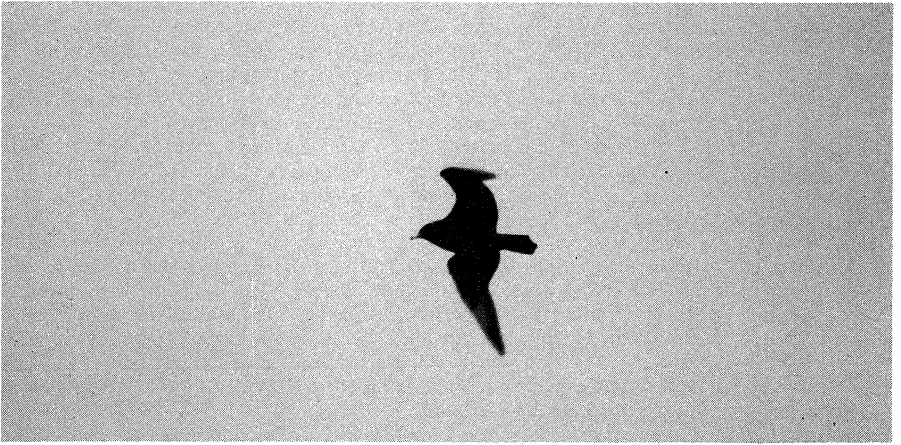
Perhaps as a result of the high winter numbers a pair stayed at a water in the west of the county to breed for the first time in Bedfordshire. The birds first showed on 30th June and aggressive behaviour by the drake towards the observer suggested that the duck was sitting. On 20th July two drakes and a duck were present with one drake still being aggressive. On 17th August three drakes, now going into eclipse plumage, and a duck were seen and at last on 24th August the duck was seen with a single downy young, the males having disappeared. From 7th September onwards the young grew to adult size and both duck and offspring stayed until the end of the year. Elsewhere a pair summered at Stewartby L, but were disturbed by a Mink, one was seen in Luton Hoo on 20th May, and a pair stayed at Barkers Lane from 14th to 19th May with display seen. An individual on R Ouse in Bedford was very tame and was considered to be an escape, and the feral population was present on Blunham L all year.

Hen Harrier *Circus cyaneus* A good year with a female between Haynes and Chicksands on 1st January (WS), single males Luton Hoo 7th January (LE) and near Brogborough L 20th

- January (AT). A female, perhaps the same from 1st January, was seen at South Mills GP on 10th, 16th and 17th February (per IKD). On 8th November a female was seen in Southill Park (WS) and presumably the same Warden Little Wood 24th November and 8th December (DHB).
- Harrier** sp. *Circus* sp. A "ring-tail" harrier was seen in the west of the county 12th June (AJL).
- Sparrowhawk** *Accipiter nisus* Seven pairs definitely bred, two others probably bred and 11 further pairs were present during the summer. At Turvey a female was killed when it chased a Starling into a school window. Recorded from 16 of the 10km squares in the county; the only significant absence is from the north of the county, SP96, TL06 and TL16.
- Buzzard** *Buteo buteo* During November a single in the Warden Little Wood/Old Warden area from 10th with two together on 13th December. One over The Lodge, Sandy 25th November and two in Odell Wood/Park Wood area during December.
- Merlin** *Falco columbarius* Single males Stewartby L 8th February (MJP), The Lodge, Sandy 2nd and 3rd November and again there 23rd December.
- Hobby** *F. subbuteo* No definite breeding records although from the many reports received it is likely that at least eight pairs were present during the summer. Two juveniles were seen with an adult at Harrold CP 20th September. The first record for the year was at The Lodge, Sandy on 13th April, which was very early, the next not until 27th April at Barkers Lane. This last site remains the favourite place for Hobby watching, particularly during evenings in the first half of May. One was seen on 6th May chasing bats. The last record of the year was one over Everton 15th October.
- Red-legged Partridge** *Alectoris rufa* One observer noted this species at 20 localities in the county compared with ten for Grey Partridge. The largest coveys were of 18 at Pulloxhill 13th October, 19 at Millbrook 5th January and 18 near Castle Mills 3rd February. Another observer recorded 32 sightings in the Totternhoe area compared with 13 for Grey Partridge. (Note: **Chucker** have been reported from just over the border at Wheathampstead, Herts, and releases are known to have been made near Southill. Observers are asked to report sightings of this species.)
- Grey Partridge** *Perdix perdix* Most of the records were, as usual, from mid- and south Bedfordshire. Reports were also received from the Keysoe area. The largest covey was of 20 on Whipsnade Downs 30th August.
- Lady Amherst's Pheasant** *Chrysolophus amherstiae* At Charle Wood an estimated six pairs bred, but with few young produced due to a combination of increased disturbance, changes in the habitat and the cold, wet spring. The main population in the county now seems to be at Breakheart Hill where a maximum of 17 were reported. Records also from Maulden Woods (daily maximum five), Luton Hoo (four), Chicksands Wood (one) and Fox Covert (three).
- Water Rail** *Rallus aquaticus* Winter records from Flitwick Moor, Harrold CP, Barkers Lane, Stewartby L, Brogborough L, Oakley Bridge, R Ouse at Kempston, Rushmere, Stevington and Luton Hoo. A maximum of four were located at Flitwick Moor, and were, as usual, present all year. A pair probably bred at Harrold CP, with a juvenile seen there on 21st August.
- Moorhen** *Gallinula chloropus* Maximum counts were in Luton Hoo with 130 on 18th January and 200 on 24th January.
- Coot** *Fulica atra* Notable influx during the hard weather with 215 at Blunham L 8th January, 162 Dunstable SW on 12th, 350 at Chimney Corner CLP same day increasing to 500 on 27th, and at least 1600 Brogborough L on 13th. During autumn numbers increased again at this site with 770 on 17th September, 1400 on 16th November and 1690 on 14th December.
- Oystercatcher** *Haematopus ostralegus* Single Stewartby L 4th March, one heard over Luton at night 26th May and two Millbrook CLP 18th August.
- Little Ringed Plover** *Charadrius dubius* Four pairs bred at one site, with two successfully raising young, whilst at a second site between two and four pairs bred with unknown success. Breeding was attempted at a third site but was frustrated. Birds were present at a total of eight sites in the summer. The first to arrive was at Barkers Lane on 27th March and spring passage reached a peak, with ten at Radwell GP, on 28th April. The last were at the same site on 10th September.

- Ringed Plover** *C. hiaticula* Breeding took place at three sites; at one four pairs were present with one nest found with four eggs; at the second seven pairs were present with four pairs successful; at a third one pair laid four eggs but hatching success unknown. February records from Harrold CP with singles on 4th and 24th and Millbrook CLP with three also on 24th. The main spring passage took place during mid-March with 19 in the Blunham/South Mills area on 16th, ten at Radwell GP on 17th and six at Rookery CLP on 22nd March. Autumn passage was noted at a wide range of sites including 13 at South Mills 19th July, 16 at Radwell GP 18th August with the last at Radwell 8th September and a juvenile at South Mills 17th September.
- Golden Plover** *Pluvialis apricaria* Large gatherings occurred before the onset of the hard weather with a maximum of 1850 on Henlow airfield, 550 on Cardington airfield and 200 on Biggleswade Common. Very scarce after mid-January until the return passage in March. Reports then included 110 Cardington airfield on 3rd, 40 over Stewartby L on 15th and 300 at Radwell GP on 17th. April records from Everton with eight on 1st, Whipsnade Zoo with six on 10th with the last there, seven, on 29th. The first in autumn were two at Thurleigh 20th October, followed by 13 at Whipsnade Zoo 2nd November and then a small movement on 24th with ten near Old Warden, two at South Mills GP and 100 near Kempston. At least 500 were counted on Henlow airfield on 12th December, 200 at Radwell GP 2nd December, 300 there on 22nd and 600 on 29th. Finally 273 were near Cardington on 30th December.
- Grey Plover** *P. squatarola* Single Stewartby L 5th May (AT).
- Lapwing** *Vanellus vanellus* Virtually absent from the county during January and February, although 800 headed south over Barkers Lane on 9th February. In the autumn 700 at Cardington 8th August.
- Knot** *Calidris canutus* Two Stewartby L 19th January (AT). An intriguing but unconfirmed record was of two possibles feeding with Starlings amongst melting snow on Luton VI Form College playing field on 22nd February. One in full summer plumage Rookery CLP 23rd May (MJP).
- Sanderling** *C. alba* Singles Harrold CP and Stewartby L 4th May (LE, DSW, MJP *et al*), Rookery CLP 19th May (AT, JS) and two Stewartby L 23rd May (MJP).
- Little Stint** *C. minuta* Singles South Mills GP 26th August (AG) and Barkers Lane 8th September (DK, MJP *et al*).
- Dunlin** *C. alpina* Seen in every month from January to October. January records from East Hyde, with one from 2nd to 6th, and from Stewartby L with one from 6th to 8th and three from 10th to 13th. In February singles Brogborough L on 17th and Stewartby L on 24th. Passage in March was light with singles at Barkers Lane, South Mills and Harrold CP, and five at Radwell GP on 17th. A stronger movement in April with reports from six localities, mostly singles, but three at Stewartby L 28th to 30th and a peak of ten at Radwell GP on 27th. Another light influx in early May with up to three Barkers Lane, four at Stewartby L and singles Cowslip Meadow in Luton, Radwell GP and Rookery CLP. A late bird was at Harrold CP 18th June.
- A light autumn passage started on 19th July and continued to 19th August, mainly of singles except two Radwell GP 9th-11th August. A single at Brogborough L 7th September and then a further influx in October with singles at five localities.
- Ruff** *Philomachus pugnax* Good sequence of January records from Stewartby L with two from 10th to 13th, four from 19th to 28th and five on 30th, with presumably the same five in Vicarage Farm CLP on 1st February. Two in Chimney Corner CLP 3rd February. In April singles Rookery CLP on 19th, Stewartby L 21st and South Mills 25th. Autumn passage noted from 19th August with two in Rookery CLP, single at Radwell GP increasing to five by 28th and two on 4th September. Two Vicarage Farm CLP 10th-11th September with one staying to 16th, and finally six at Harrold CP 18th October.
- Jack Snipe** *Lymnocyptes minimus* January records from Radwell GP with one on 6th, three in Houghton Regis CHP on 12th, one Stewartby L 12th, East Hyde on 17th and then singles Grovebury Farm Pit 3rd February and Harrold CP 2nd March. At South Mills GP reported from 25th January to 4th April with a maximum of two.

- Snipe** *Gallinago gallinago* Two pairs bred Houghton Regis CHP and drumming was noted in the breeding season from South Mills GP, near The Lodge, Sandy and Vicarage Farm CLP. Winter numbers lower than usual, with many birds moving out during the bad weather. Fenlake held 125 on 6th January, and 160 on 8th February. Evidence of passage at South Mills GP with 100 on 5th March, with 32 remaining on 5th April. There was an early return noted there with three on 17th September.
- Woodcock** *Scolopax rusticola* Roding or summer presence noted at 14 sites. January records from Barkers Lane, Stewartby L, Barton Springs and Harrold CP indicate a hard weather movement. One at East Hyde 20th February and then in November singles Barkers Lane 10th and Whipsnade Zoo on 15th.
- Black-tailed Godwit** *Limosa limosa* One 25th February Dunstable SW (AT).
- Bar-tailed Godwit** *L. lapponica* Singles Stewartby L 5th and 23rd May (AJL, MJP).
- Whimbrel** *Numenius phaeopus* The first in spring was one at South Mills GP 5th April with two there 25th April and two the same day Stewartby L. Three over The Lodge, Sandy 4th May and then 23 over Barkers Lane on 10th must have been impressive. Last in spring were two at Stewartby L 23rd May. In autumn all records were of singles: Harrold CP 29th June and 21st July, Sharnbrook 30th July, The Lodge, Sandy on 13th August, Houghton Regis CHP 5th September and near Totternhoe Knolls 9th September.
- Curlew** *N. arquata* A wide scatter of records, mostly of singles, from every month except June and November. Singles in January at Warden Abbey Farm on 9th and Stewartby L on 13th, and in February two Barkers Lane on 8th with four over Brogborough L the next day. Spring passage lasted between 24th March and 6th May with reports from five sites involving a total of seven birds. In autumn two at Barkers Lane 14th July, singles Radwell GP 18th August, Barkers Lane 4th September and Harrold CP 13th October, six over Barkers Lane 26th October and finally five over Barkers Lane 1st December.
- Redshank** *Tringa totanus* Breeding reports from Harrold CP with two pairs, South Mills GP with three pairs, Stewartby L one pair and Houghton Regis CHP three pairs. Birds present in January at three sites and then in March passage noted at eight sites with peaks of seven at South Mills GP on 3rd, five at Rookery CLP 31st and four at Radwell GP on the same day. Further movements in April with 14 at South Mills GP on 4th and 15 on 5th, five at Stewartby L on 14th and then eight at Barkers Lane 4th May. Away from the breeding sites autumn records very sparse, and there was just one second winter period record — a single at Barkers Lane 6th to 31st December.
- Greenshank** *T. nebularia* Unusual winter record of one at Stewartby L 19th January. Typically spring passage was light with singles Stewartby L 7th April, Harrold CP 4th May and Houghton Regis CHP 20th May. Unusual early summer record with one at Harrold CP 15th June. Autumn passage was very impressive. The first were two over The Lodge, Sandy 7th August, but the main passage occurred between 17th and 21st August, with reports from seven sites. At Radwell GP the first on 17th was joined by a further five on 18th, 17 were seen on 19th, ten were there between 21st and 24th with five then staying until 9th September and four on 19th. 46 which flew over Barkers Lane on 27th August were unprecedented. The last was one at Radwell GP 29th September.
- Green Sandpiper** *T. ochropus* Seen in each month from January to October. Winter records from Tiddenfoot GP, Barkers Lane and Blunham L, all singles. A scatter of spring records, mostly singles, between 18th March to 6th May. There was an early return bird at Willington GP on 30th June and then many reports through to 27th October, with a peak of five at Willington GP 17th September and five, perhaps the same, at Bedford SW 7th October.
- Common Sandpiper** *Actitis hypoleucos* Single 6th January East Hyde. Spring passage lasted from 12th April to 5th June with peaks of eight at Barkers Lane 30th April, six there 16th May and five along R Ivel between Blunham and South Mills GP 2nd May. Autumn passage lasted from 21st July to 24th September with then a late bird at Harrold CP 13th October. Peaks in autumn were six at South Mills GP 1st August and 12 at Radwell GP 17th August. There was an unusual record of one on 13th September walking along the middle of the Harlington to Sharpnose road at 0730 hours.



Pomarine Skua over Stewartby L. November 1985.

(Photo: R. Wing)

- Pomarine Skua** *Stercorarius pomarinus* An immature on 14th November at Stewartby L was only the second county record (the first was in 1879). It was last seen on 18th November having briefly appeared at Brogborough L during its stay. Its occurrence coincided with a large influx of this species in eastern Britain. (MB, LE, AT *et al*).
- Little Gull** *Larus minutus* At Stewartby L four adults 23rd April, with one on 28th April, an immature 30th April staying until 5th May, an adult on 15th May and another immature 16th May. At Barkers Lane an adult 14th May and an immature 16th May. Finally an adult at Stewartby L 15th November. (MJP, LE, AT, DK *et al*)
- Common Gull** *L. canus* Influx noted at Barkers Lane on 8th December when 95 were counted, the highest for this site.
- Lesser Black-backed Gull** *L. fuscus* A pair was seen mating at Brogborough No. 2 Pit 11th May. Autumn passage was noted from 16th July.
- Iceland Gull** *L. glaucoides* A first winter bird at Brogborough rubbish tip on 16th November was only the second county record. It stayed in the area until 30th November (LE, DJO *et al*).
- Glaucous Gull** *L. hyperboreus* A good sequence of records continues the trend since 1983. On 12th January both a first winter and third winter bird were present at Brogborough L (DJO, LE, MJP). Many records were received of a first winter bird in the Brogborough/Stewartby area from 13th January until 20th February. It is likely from the descriptions that two first winter birds were involved. A second winter bird was reported from 22nd to 26th January at Brogborough/Stewartby. A first winter bird at Elstow CLP 22nd February could have been one from Stewartby. A first winter bird also reported from Vicarage Farm CLP 13th March (AT, DHB *et al*).
- Great Black-backed Gull** *L. marinus* A melanistic bird was present at Brogborough rubbish tip 17th January.
- Kittiwake** *Rissa tridactyla* Two Luton Hoo 20th February and two Stewartby L 14th April. A flock of 100 south over Barkers Lane 27th April immediately after a snow storm must have been a remarkable sight. Singles Harrold CP 29th-30th April and 4th May, and R Ouse in Bedford town centre 3rd to 5th May. Three Stewartby L 29th-30th April, two on 1st-3rd May with one remaining on 4th-5th. Lastly one at Stewartby L 3rd June (LE, DSW, DK, MJP, CW *et al*).

- Sandwich Tern** *Sterna sandvicensis* One Stewartby L 7th April (JGJ) and two at Harrold CP same day (GMC), and then singles Radwell GP 21st April (DSW), Stewartby L 6th May (AT), 15th May (LE) and 6th June with two on 7th. (MJP *et al*). A good year for this species.
- Common Tern** *S. hirundo* A pair bred at Harrold CP raising three young, another pair bred near to Radwell GP and a pair at or near Stewartby L raising one young. The first in spring was at Barkers Lane on 4th April and passage lasted until 5th June with peaks of 16 at Barkers Lane 14th May, 17 Stewartby L 23rd May, 30 Barkers Lane and ten Stewartby L 5th June. Autumn passage from 29th July to 8th September with peaks of 11 Barkers Lane 29th-31st July, 20 Radwell GP 11st August, 12 Stewartby L 18th August, and nine Rookery CLP 25th August. A late bird lingered at Barkers Lane until 26th October.
- Arctic Tern** *S. paradisaea* A single at Barkers Lane 13th April was the forerunner of a remarkable influx later in the month. At Stewartby L 17 on 25th April, none on 26th, six on 27th, at least 183 on 28th, 50 to 60 on 29th, three on 30th, none 1st May, 14 on 2nd May, none on 3rd, 31 on 4th, 45 on 5th, seven on 8th and one on 10th. At Barkers Lane two on 27th April, eight on 28th, 126 on 29th, four on 30th, none on 1st May, 15 on 2nd, 84 on 3rd, 20 on 5th and three on 7th. Single Rookery CLP 12th May, two Stewartby 15th-19th May, four on 23rd May and three on 7th June. In autumn one was found in Blunham High Street on 6th August and there were 34 at Barkers Lane 30th August.
- Little Tern** *S. albifrons* One or two at Stewartby L 5th May and one Barkers Lane same day, which could have been from Stewartby. (AT, CW, MJP, DJO). Singles Harrold CP 26th May (DSW) and Stewartby L 27th May (MJP).
- Black Tern** *Chlidonias niger* At Stewartby L single 27th April, four 5th May and single 15th May, single Brogborough L 16th with two on 17th, six same day at Stewartby L and one there 21st-23rd May. In June singles Stewartby L 1st and 12th, and then in autumn singles Radwell GP 28th July, Stewartby L 9th August, three Barkers Lane 13th, one on 30th and an impressive 51 at Stewartby L on the same day.
- Stock Dove** *Columba oenas* Maximum number reported was 106 in Luton Hoo 24th January.
- Collared Dove** *Streptopelia decaocto* Post breeding roosts of 65 Kempston West End, 70 at Stewartby L and 330 Totternhoe, all in October.
- Turtle Dove** *S. turtur* The first in spring were two near Old Warden 20th April and a late migrant was at Radwell GP 29th September. Unseasonal records at Wilden where one, which had associated with a flock of Collared Doves at the end of 1984, stayed until 10th March, and at Barkers Lane with one on 1st December. At The Lodge, Sandy only two pairs bred, continuing the decline since 1981 when 14 pairs bred, and on 200 acres at Old Warden eight pairs bred, having declined from 16 pairs in 1981.
- Ring-necked Parakeet** *Psittacula krameri* Single Pavenham 23rd July.
- Cuckoo** *Cuculus canorus* The first to arrive were on 18th April at Whipsnade Zoo and The Lodge, Sandy, about an average date. The last was one at Barkers Lane 10th September.
- Barn Owl** *Tyto alba* Bred at two sites and probably at a third. In addition winter records from another five sites and summer records from a further two. This indicates a decline from 1984, but as a species remains under-recorded.
- Little Owl** *Athene noctua* Reports from over 40 localities, from all parts of the county, would suggest that the population is at least holding its own if not increasing.
- Long-eared Owl** *Asio otus* A pair bred at the same locality as 1984 raising three young. Winter roosts of four birds in TL03 and two in TL13.
- Short-eared Owl** *A. flammeus* Up to two on Warden Hills from 6th January to 2nd April, singles at Stewartby L between 3rd February and 4th March, near Coronation CLP 10th March, The Lodge, Sandy 5th April and Barton Hills 16th April.
- In December one in Vicarage Farm CLP on 27th and up to five in the Millbrook/Lidlington area from 20th to 31st.
- Swift** *Apus apus* The first, over Clapham Park on 20th April, was early with the next arriving at Barkers Lane on 27th April and the main arrival on 2nd May. Between 5th and 23rd June large numbers gathered over favoured sites including 300 at Barkers Lane on 6th and 300 at Stewartby L on 9th. The last was one at Barkers Lane 22nd September.



Sandwich Tern over Stewartby L. June 1985

(Photo: A. Tomczynski)

Kingfisher *Alcedo atthis* Reported from 16 sites during the winter, particularly during January and February when birds were obviously displaced from their normal haunts by the hard weather. No positive breeding records which suggests that the population suffered a setback, but food carrying was seen at two sites, a nest hole located at a third, and birds were present in the summer at three others. This suggests a summer maximum of six pairs compared with 18 pairs in 1984. A bird found dead by the road at Willington on 23rd July had been ringed at Hounslow, Middlesex on 13th September 1984.

Wryneck *Jynx torquilla* One at The Lodge, Sandy 11th October was being mobbed by Bramblings, Goldcrests and a Nuthatch (IKD).

Lesser Spotted Woodpecker *Dendrocopos minor* Reports from 22 localities, mostly from the Lower Greensand Ridge.

Skylark *Alauda arvensis* Generally scarce during the hard weather in the early part of the year and 500 at Everton on 18th January and 160 near Bohnhurst the next day were indications of hard weather movements.

Sand Martin *Riparia riparia* The first to arrive was at Barkers Lane on 3rd April and the last were singles there and at Stewartby L on 21st September. The recent decline in the British population, caused by the drought in the wintering areas in the Sahel has been reflected in the county and is shown in the table on page 34, which indicates nest holes reported in use.

Swallow *Hirundo rustica* The first arrivals were at Blows Downs 1st April and Stewartby L 3rd April, but the main influx was much later, with 250 at Barkers Lane on 11th May and 300 at Stewartby L on 12th. A roost of up to 400 gathered at Harrold CP during the second half of September, and finally the last to depart was one at The Lodge, Sandy on 4th November.

House Martin *Delichon urbica* Arriving about a week earlier than average, the first was at Barkers Lane on 2nd April. The main influx occurred around the middle of May with 120 at Barkers Lane on 11th, 120 at The Lodge, Sandy on 12th and 200 Blunham L on 14th. The last was one at Wrest Park, Silsoe on 4th November.

	1980	1981	1982	1983	1984	1985
Clophill	7	?	?	?	?	?
Grovebury Farm Pit	200	250	?	120	0	20
Leighton Buzzard Golf Course	?	present	?	?	?	?
Potton	?	present	?	160	80	2
Radwell GP	186	250	350	200	50	0
Shire Hall, Bedford	9	4	present	5	present	5
Tingrith	?	?	?	50	?	?
Turvey	?	?	?	10	?	?
Estimated population	402	506	700	545	135	27

Tree Pipit *Anthus trivialis* The county population seems to be in decline with only 15 singing males reported from eight sites. The first was at The Lodge, Sandy on 9th April, where the breeding population of two pairs was, with 1977, the lowest on record. The last was one at Harrold CP on 7th September.

Meadow Pipit *A. pratensis* Passage numbers were much lower than in recent years, with peak counts at Barkers Lane of 50 on 3rd April and 60 on 10th April.

Rock Pipit *A. spinoletta* Singles 16th-17th March Barkers Lane (DK *et al*), Radwell GP 31st March (DSW), South Mills GP 13th April (LE) and Barkers Lane 7th October (AT). Individuals showing the characteristics of the race, *A. spinoletta spinoletta*, known as the **Water Pipit**, were seen at Barkers Lane 11th April (LE) and Totternhoe 20th May (LSH).

Yellow Wagtail *Motacilla flava* The first were three at Barkers Lane and three at Stewartby L on 2nd April, but the main arrival occurred at the end of April with 24 in Woburn Park on 25th, 40 at South Mills GP 27th, 78 at Barkers Lane same day, 40-50 at Radwell GP 28th and 40 at Stewartby L 29th. The last to depart was one at Radwell GP on 8th October.

Individuals showing characteristics of the race *M. flava flava*, known as the **Blue-headed Wagtail** reported from Barkers Lane 13th-23rd April and 28th April (DK, MJP *et al*) and at Stewartby L 4th May (BN).

Grey Wagtail *M. cinerea* Reported regularly in both winter periods, nearly all of singles, including two records from the centre of Luton and one from Bedford bus station. A pair bred at Luton Hoo, raising four young, and a nest was found at East Hyde with five eggs but which was later found robbed by a predator. Birds were also present at Tempsford Mill, a former breeding site, during May. This represents a decrease from 1984 and would indicate that this species suffered a set back during the hard weather in January and February.

Pied Wagtail *M. alba* 130 were counted at Leighton SW on 1st February and 50 were at East Hyde 10th November. A series of counts at Barkers Lane showed an influx in March with 44 on 18th, and again a passage in July with 53 on 10th and again 53 on 29th October. Good numbers of the continental race, *M. alba alba*, known as the **White Wagtail**, with birds present in Luton Hoo from 27th to 29th March when a maximum of nine were counted, and at Stewartby L with a single 3rd April, and then up to four between 28th April and 4th May. Present at Barkers Lane from 4th to 17th April with a peak of five from 11th to 14th, and a single 3rd May; at Radwell GP irregularly throughout April and also South Mills GP with two on 12th April.

Wren *Troglodytes troglodytes* This species, surprisingly, did not appear to have suffered during the hard winter. The population at The Lodge, Sandy stayed at about the same level as in 1984, and at Old Warden on a 200 acre CBC plot the population actually increased from 47 pairs in 1984 to 49 pairs, the highest since 1975 (89 pairs).

Duncock *Prunella modularis* At The Lodge, Sandy 19 pairs bred which was ten less than in 1984 and the lowest since 1965. In 200 acres near Old Warden pairs reduced from 35 in 1984 to 30.

Robin *Erithacus rubecula* On 200 acres near Old Warden only 21 pairs bred (44 pairs in 1984) which was the lowest since recording began on this site in 1973. At The Lodge, Sandy 40 pairs bred, six less than in 1984.

Nightingale *Luscinia megarhynchos* With 27 singing males reported from eight sites this was the best year since 1980, which was a BTO census year when coverage was more complete. The first was at Marston Thrift on 16th April, about two weeks earlier than average. Single singing males at Clapham Park on 8th May and at Barkers Lane 5th May to 26th May were assumed passage birds and are not included in the total mentioned.

Black Redstart *Phoenicurus ochruros* In April singles Houghton Regis CHP on 3rd, Blows Downs 4th-5th, and then up to three there between 15th and 19th with one remaining until 26th, singles Barton Hills 16th, Whipsnade Zoo 17-18th and Barkers Lane 18th. In autumn one at Whipsnade Zoo 15th to 20th October.

Redstart *P. phoenicurus* Good passage on Blows Downs, with the first very early to arrive on 3rd April and then almost daily into the first week of May with a daily maximum of two. Singles Totternhoe and Southill Station 29th April, male in song Stockgrove Park 2nd May, Marston Thrift 4th May, near Streatley 5th, The Lodge, Sandy 11th, Steppingley Res 14th May, where it remained in song 25th May to 7th June. Despite these good numbers no definite breeding records.

In autumn singles in Luton 19th August and Whipsnade Zoo 29th August.

Whinchat *Saxicola rubetra* Good spring passage with first at Blows Downs 17th April, three 27-29th April with the last on 13th May. Singles Barkers Lane 29th April, Whipsnade Zoo 2nd May, and then a marked influx during 4th-5th May with 12 birds reported from seven sites.

Autumn numbers well down with two Dunstable SW 25th August, singles Great Hayes Wood 29th August and at Totternhoe 3rd to 20th September.

Stonechat *S. torquata* A single Harrold CP 2nd January was the only record.

Wheatear *Oenanthe oenanthe* Two main passage periods in spring with the first 26th March to 5th April. Peak numbers were 12 at Dunstable SW and five Barkers Lane on 30th March and 16 on Blows Downs 3rd April. The second influx was more widespread but involved smaller numbers, lasting from 3rd to 5th May. Autumn passage, which was light, was recorded from 6th August until 24th September.

Ring Ouzel *Turdus torquatus* The first was in Whipsnade Zoo 30th March, with another 10th-14th April and again 25th April. On Blows Downs present between 2nd and 27th April with a peak of three on 20th. Lastly one near Streatley 2nd May.

Blackbird *T. merula* At The Lodge, Sandy only 23 pairs nested, equalling the low of 1974, and at Old Warden on 200 acres pairs dropped to 39 from the 46 in 1984. Two influxes noted in November with 19 at The Lodge, Sandy on 11th and 62 at Barkers Lane on 23rd.

Fieldfare *T. pilaris* Numbers were low at the start of the year with the only flocks of note being 200 at Radwell GP 27th January, 200 Sundon Quarry 13th February, 100 Blows Downs 20th February and 700 Everton 9th March. The last was at Barkers Lane 14th April. In autumn the first to return was one at The Lodge, Sandy on 9th September, but the first big arrival was in October with 55 at Everton on 23rd and 60 at The Lodge, Sandy on 28th. There were 200 at Barkers Lane on 3rd November, 250 there on 7th December and 500 at Harrold CP the next day but the species was generally scarce until the cold weather at the end of December when a more widespread influx included 200 at Stewartby L.

Song Thrush *T. philomelos* At The Lodge, Sandy only 11 pairs bred, the lowest since 1965, and on 200 acres near Old Warden the decline there continued with ten pairs only (15 pairs in 1984 and a peak of 46 pairs in 1975).

Redwing *T. iliacus* Apart from 200 on Blows Downs 2nd February this species was scarce in the hard weather in the early part of the year. At The Lodge, Sandy ten was the maximum count in January and there was a complete absence during February. The last in spring was one on Blows Downs 18th April and one found dead at Kensworth 2nd May. The first in autumn were over Aspley Guise on 12th October, followed on 14th October by reports from Whipsnade Zoo, Biggleswade Common and Everton. Like Fieldfares, remained scarce early on with a maximum at The Lodge, Sandy of just 19, until the cold weather at the end of December when there was 200 at Stewartby L on 27th.

Mistle Thrush *T. viscivorus* Post breeding flocks of 30 at Everton, 35 in Wrest Park, Silsoe and 45 Whipsnade Zoo.

- Grasshopper Warbler** *Locustella naevia* 19 singing males reported from 11 sites, which was a slight increase on 1984. The first were on 18th April at Home Wood, Maulden Woods and New Wavendon Heath.
- Sedge Warbler** *Acrocephalus schoenobaenus* The first was near South Mills GP 4th April, which was about ten days earlier than average, and Barkers Lane on 5th April, where 26 males held territory which showed an increase on 1984 of four pairs. The last was also at Barkers Lane 7th October.
- Reed Warbler** *A. scirpaceus* The first were three at Brogborough L 24th April, the second earliest date recorded. A late migrant was at Harrold CP 29th September. Reports from eight sites in the summer, a total of 41 singing males, with the largest colony at Houghton Regis CHP with ten pairs.
- Lesser Whitethroat** *Sylvia curruca* The first was one at Brogborough L 19th April which was early, and the last was at Harrold CP 16th September.
- Whitethroat** *S. communis* The first were on 19th April at Marston Thrift, Brogborough L and Sewell Cutting. The last was Harrold CP 14th September. Records would indicate a slight recovery in the breeding population.
- Garden Warbler** *S. borin* The first was at Marston Thrift on 17th April which was about two weeks earlier than average, with the next on 2nd May at The Lodge, Sandy. The last was one at Barkers Lane 7th October. A poor breeding season with just eight pairs at The Lodge, Sandy, which is the lowest since 1979, and on 200 acres near Old Warden only three pairs bred, compared with ten pairs in 1984, and reversing a recent trend of growth.
- Blackcap** *S. atricapilla* A surprising number of winter records: Clophill 10th January; Flitwick 6th-9th February, perhaps the same 12th-13th February, Sandy 18th February, Bedford 21st February and Bromham 2nd March staying until 6th April. In the second winter period one at Marston Thrift 8th December. The first probable migrant was on Blows Downs 2nd April and the last at The Lodge, Sandy 12th October. There was a slight decline in the breeding population.
- Wood Warbler** *Phylloscopus sibilatrix* No proof of breeding received although a good number of singing males. The first was at The Lodge 27th April which stayed until 29th April, and another there 10th to 15th May. In Ampthill Park up to three between 30th April and 7th May, singles Stockgrove Park and Twin Bridges, Blunham on 1st May, Wavendon Heath 6th May and Rushmere with two on 28th May. There seemed to be a dearth of females.
- Chiffchaff** *P. collybita* Winter records from The Lodge, Sandy with two on 3rd January and then many reports there of singles up to 7th March and then at the end of the year one at Bedford SW 25th December. The first probable migrant in spring was at Leighton SW 26th March and the last at Barkers Lane 7th October.
- Willow Warbler** *P. trochilus* A sudden and widespread arrival on 3rd April with reports from Warren Wood, Houghton Regis CHP, Barkers Lane, Blows Downs and The Lodge, Sandy. On 200 acres near Old Warden 36 pairs bred, the highest since records began in 1973, whilst in contrast at The Lodge, Sandy pairs dropped to 40, six less than in 1984, but still up on the 35 pairs in 1983.
- Goldcrest** *Regulus regulus* A party of 50-60 was seen in Stockgrove Park 27th January. The breeding population, surprisingly, did not seem to suffer in the winter (cf Wren), with 12 pairs breeding in 200 acres near Old Warden, the highest since recording began there.
- Firecrest** *R. ignicapillus* A male in Ampthill Park 17th April was joined by a second bird on 19th. They were seen up to 2nd July. Elsewhere a male in song at The Lodge, Sandy 8th April and again 4th to 13th June raised hopes that the breeding success of 1984 would be repeated. A male was seen briefly near Old Warden 25th May.
- Spotted Flycatcher** *Muscicapa striata* The first was at Barkers Lane 9th May and the last at Stewartby L 5th October. Indications were that the breeding population was down, with only four pairs at The Lodge, Sandy, where ten pairs had bred in 1984, and a total absence from 200 acres near Old Warden which held a peak of 11 pairs in 1973.
- Pied Flycatcher** *Ficedula hypoleuca* A poor year with only one record, a male at Whipsnade Zoo 5th May (JC, GF).

- Long-tailed Tit** *Aegithalos caudatus* On 200 acres near Old Warden ten pairs bred, the highest since recording began in 1973, and at The Lodge, Sandy a slight increase from two pairs in 1984 to three.
- Marsh Tit** *Parus palustris* The population seems to be maintained at a fairly high level, indicated by eight pairs breeding in 200 acres near Old Warden, and 12 counted around Southill L on one day during November.
- Willow Tit** *P. montanus* Very much a restricted species in the county with winter records from just six sites and summer records from a further eight. No reports from the county north of Marston Thrift, which, with Flitwick Moor and Maulden Woods, seems to be the most favoured locality.
- Coal Tit** *P. ater* Slight reduction in the breeding population at The Lodge, Sandy and near Old Warden.
- Blue Tit** *P. caeruleus* Two conflicting pictures emerged — at The Lodge, Sandy only 19 pairs bred compared with 37 pairs in 1984, whilst near Old Warden 44 pairs bred which was the highest since 1974. A juvenile found dead at Linslade on 15th July had been ringed as a nestling on 15th June at Ringshall Coppice, Ashridge. It had travelled 13 km in 32 days.
- Great Tit** *P. major* Like the previous species two opposing reports — 19 pairs at The Lodge, Sandy compared with 29 pairs in 1984, whilst near Old Warden 25 pairs bred which was the highest since 1973. An untypical flock of 27 was counted at The Lodge, Sandy 17th December.
- Golden Oriole** *Oriolus oriolus* A male was seen in Bedford 10th April (PAD).
- Great Grey Shrike** *Lanius excubitor* One frequented Biggleswade Common and The Lodge, Sandy between 3rd and 14th January. One on Biggleswade Common on 5th March may have been the same, as indeed may one at Oakley on 2nd March (IKD, GMC, DSW, RAH *et al.*).
- Jay** *Garrulus glandarius* A flock of 12 Maulden Woods 24th August.
- Magpie** *Pica pica* Twenty at Elstow CLP 21st August, and a flock of ten Chalton Cross 28th October fairly typical now of numbers to be seen, and the species continues to be abundant particularly in the south and central parts of the county.
- Carriion Crow** *Corvus corone* One showing the characteristics of the race *C. corone corone*, the **Hooded Crow**, was at Brogborough L 15th January and presumably the same at Brogborough rubbish tip 6th February.
- Rose-coloured Starling** *Sturnus roseus* A male near Henlow airfield 22nd to 24th May was only the third county record, and has been accepted by the British Birds Rarities Committee (LE).
- House Sparrow** *Passer domesticus* A leucistic individual was seen at The Lodge, Sandy 18th November.
- Tree Sparrow** *P. montanus* This is becoming a scarce breeding species in the county. At Old Warden on 200 acres only one pair bred compared with a peak of 21 pairs in 1975. Winter flocks were also reduced in size with 50 at South Mills 3rd February the largest reported.
- Chaffinch** *Fringilla coelebs* At Old Warden 40 pairs bred, the highest since recording began at this site in 1973, whereas at The Lodge, Sandy only 24 pairs bred, 11 less than in 1984.
- Brambling** *F. montifringilla* Widely scattered during both winter periods but in very small numbers. During January and February reports from nine localities with a high of 12 near Everton 15th January and ten near Leagrave Marsh 25th January. A few migrants passed through in March and April, mostly singles with the last at The Lodge, Sandy 25th April. In the autumn the first to return was one at The Lodge, Sandy on 11th October mobbing a Wryneck. Reported from eight sites with peaks of nine at Blunham 24th October and ten at Millbrook between 25th and 31st December.
- Greenfinch** *Carduelis chloris* At both The Lodge, Sandy and Old Warden breeding numbers were down, both sites holding only six pairs which at Sandy was five less than in 1984, and at Old Warden the lowest since 1973.
- Goldfinch** *C. carduelis* None known to breed at The Lodge, Sandy for the second successive year, although an influx of 100 was noted there during late April.
- Siskin** *C. spinus* Reported from eight sites in the first winter period with peaks of 60 at Flitwick Moor 24th February, 50 at Woburn L during February, and earlier on 1st January 50 at The Lodge, Sandy where the last was seen 16th April. Interesting summer records from

- Whipsnade Zoo with two between 6th and 10th July, and one or two at The Lodge, Sandy between 9th and 16th July. Two at Harrold CP 26th August, a scatter of records in September and October but no real numbers until November with 40 at Southill L and 100 at Harrold CP both on 24th. In December peaks of 40 Flitwick Moor on 1st, 100 at Leagrave Marsh on 19th, 100 Eversholt L 29th and 40 near Old Warden 30th.
- Linnet** *C. cannabina* Flock of 300 reported from Totternhoe 5th October.
- Redpoll** *C. flammea* The only flocks of note were 70 at Biggleswade Common 3rd January and 180 The Lodge, Sandy 10th April.
- Crossbill** *Loxia curvirostra* At The Lodge, Sandy recorded in seven months of the year. There were at least 40 in early June and regular sightings of up to 18 through July and August. A juvenile was found dead there on 1st July. Single record in October of six birds and in November of one, then in December another influx with a maximum of ten on 7th. Elsewhere 12 were seen over Sandy town on 15th July and other indications of a mid-summer arrival were a small party over Luton Hoo 12th July, 16 at New Wavendon Heath 17th June with the same flock at Aspley Heath 13th July. At Whipsnade Zoo one on 6th April, two on 27th May, three on 5th August and five on 3rd-4th October. A good year.
- Bullfinch** *Pyrrhula pyrrhula* 11 pairs bred in 200 acres near Old Warden, the highest since 1976.
- Hawfinch** *Coccothraustes coccothraustes* An increase in sightings with summer reports from Old Warden, Amptill Park, The Lodge, Sandy, Bush Wood, Luton Hoo, Maulden Woods and Warren Wood, all single birds or single pairs. Present in winter in Wrest Park, Silsoe.
- Yellowhammer** *Emberiza citrinella* Influx during the hard weather noted at Barkers Lane with 100 between 6th and 13th January and then 160 on 19th January. 95 were also counted there on 31st December following a cold spell.
- Reed Bunting** *E. schoeniclus* Considered to be scarcer this year, 25 at The Lodge, Sandy on 19th December was the largest flock reported.
- Corn Bunting** *Miliaria calandra* Recorded in the summer from 16 localities with none from the north or west of the county. During the winter the largest flocks were of at least 100 at Stewartby Turn during January, and at the other end of the year a roost at South Mills of 60.

ESCAPES

- White-fronted Goose** *Anser albifrons* An adult at East Hyde 26th-27th September and one at Harrold CP on 2nd March were considered to be escapes.
- Bar-headed Goose** *A. indicus* Single with Bewick's Swans was seen at Blunham L 26th-27th January and again at Roxton GP on 29th. One also at Harrold CP 9th June.
- Snow Goose** *A. caerulescens* An adult white phase present all year between Millbrook and Brogborough L associating normally with the Canada Geese. An adult blue phase appeared at Brogborough L during the hard weather movements of 12th-14th January and an adult white phase at Chimney Corner CLP also 12th January. An intriguing group of four immature blue phase at Millbrook on 15th February was joined by another on 16th February. They stayed in the area until 4th April.
- Canada Goose** *Branta canadensis* A small individual, perhaps of the race *B. c. hutchinsii* was at Radwell GP 25th August.
- Ruddy Shelduck** *Tadorna ferruginea* One first seen on R Ouse near County Hall, Bedford on 5th June later that day moved to Barkers Lane.
- Bahama Pintail** *Anas bahamensis* One Radwell GP 27th January.
- Goshawk** *Accipiter gentilis* One was lost by a falconer in Dunstable in November and was recaptured in Markyate in March 1986. It had been reported from near Caddington in the interim.
- Helmeted Guineafowl** *Numida meleagris* Two The Lodge, Sandy 18th April.
- Cockatiel** *Nymphicus hollandicus* One Barkers Lane 16th May.

BARRY NIGHTINGALE

BIRD RINGING REPORT

By D.S. Woodhead

A total of 2247 birds were ringed during the year. The details are shown in the list below. This figure and the following recoveries being compiled from data submitted by four ringers in the county. The low total is due mainly to the poor weather which we had during the summer. Ringing can only be carried out successfully under certain conditions and a combination of wind and rain meant that there were few opportunities available during the summer months.

The recoveries listed are just a selection of those received and the majority show long distance movements. The Mute Swan Z30301 was 15 years old when controlled at Welney in Norfolk. Goose recoveries fell into a similar pattern as in previous years. We have yet to have a long distance recovery of the two goose species ringed and it may well prove that most birds only move locally. LO3432 was the first recovery at Stewartby although there is doubtless a great deal of movement between the Harrold/Radwell population and the Stewartby area. There were a number of foreign recoveries reported. Two Pochard (one in Russia and one in Switzerland), and a Tufted Duck in Italy. The rapid movement of the Little Ringed Plover ringed as a pullus at Harrold and recovered in West Germany is notable, and the recovery of the Lapwing in France shows the winter movement that this species undertakes during hard weather. A large number of Black-headed Gulls are ringed both in this country and on the continent. The two recoveries listed are typical.

Ringling studies are not only concerned with long distance migration and in recent years more emphasis is being placed on local population studies including moult, weight, population dynamics and post breeding dispersal. An interesting pattern is emerging in the warbler passage studied at Harrold Country Park. The principal species concerned are Willow Warbler, Blackcap and Garden Warbler. Large numbers of these species pass through the park in July and would go unnoticed if not for the ringing activities. Birds in the local woodland disperse after the breeding season and move into Harrold Country Park to take advantage of increased food availability. Retrap data has shown that Willow Warblers and Blackcap move from Odell Woods down to Harrold between 1-2 weeks after fledging. They then stay at Harrold for 1-2 days before moving south towards the coast. The Chiffchaff recovery shown indicates that birds migrate slowly to the coast, fattening up on the way before embarking on longer journeys. The lack of retraps and number of new birds caught shows the volume of birds moving through and the value of Harrold Country Park to the local populations.

RINGING TOTALS FOR 1985

Mute Swan	2	Meadow Pipit	7	Marsh Tit	3
Greylag Goose	59	Grey Wagtail	1	Willow Tit	21
Canada Goose	16	Pied Wagtail	4	Coal Tit	15
Kestrel	1	Wren	55	Blue Tit	174
Moorhen	14	Duncock	35	Great Tit	125
Little Ringed Plover	6	Robin	71	Nuthatch	1
Ringed Plover	15	Blackbird	94	Treecreeper	12
Lapwing	11	Fieldfare	1	Starling	14
Dunlin	1	Song Thrush	30	House Sparrow	1
Snipe	1	Redwing	2	Chaffinch	67
Common Sandpiper	2	Mistle Thrush	1	Brambling	2
Common Tern	2	Sedge Warbler	49	Greenfinch	23
Woodpigeon	4	Reed Warbler	107	Goldfinch	10
Collared Dove	2	Lesser Whitethroat	16	Linnnet	2
Cuckoo	2	Whitethroat	33	Redpoll	16
Little Owl	1	Garden Warbler	65	Bullfinch	47
Swift	25	Blackcap	79	Yellowhammer	14
Kingfisher	6	Chiffchaff	25	Reed Bunting	140
Great Spotted Woodpecker	1	Willow Warbler	231	Corn Bunting	44
Sand Martin	2	Goldcrest	17		
Swallow	243	Spotted Flycatcher	2		
House Martin	101	Long Tailed Tit	74	TOTAL	2247

Address: 79, The Moor, Carlton, Bedford MK43 7JS

ACKNOWLEDGEMENTS

I would like to thank the following ringers for their prompt submission of records: P. Copestoke, E. Newman, P. Wilkinson, M.A. Woodhead.

RINGING DETAILS						RECOVERY DETAILS				
species	ring number	age code	sex	date	location	date	location	recovery manner	distance km	direction
Mute Swan	Z52326	3		8.9.83	Boveney, Windsor, Berks	9.12.84	East Hyde	V	45	NNE
	Z30301	5	♀	11.7.71	Bedford	12.4.80	Downham, Market, Norfolk	V	80	NE
Greylag Goose	LO3552	4		7.7.84	Harrold GP	20.12.84	Welney, Norfolk	V	63	NE
Canada Goose	LO3432	1		8.7.83	Harrold GP	31.1.85	Warrington, Peterborough, Cambs	+	35	NNE
Pochard	GJ87527	4		19.3.84	Blunham	1.1.86	Stewartby	+	15	SSE
Tufted Duck	Z41108	4		23.3.82	Oberkirch, Switzerland	18.5.84	Lake Ostrovnoye, USSR	+	4000	ENE
	FR01411	4		16.9.81	Blunham	19.3.84	Blunham	V	822	NW
Little Ringed Plover	NC00684	1		3.6.78	Harrold GP	12.2.84	Varese, Italy	X	960	SE
Lapwing	?	1		13.6.83	East Hyde	25.7.78	Rieselfelder, West Germany	V	565	E
Black-headed Gull	223130	1		1.7.84	Daugai, Alytus Lithuania, USSR	1.12.85	St. Gemme La Plaine, Vendae, France	+	599	S
	681817	1		5.6.83	Kjanken, Sande, Vestfold, Norway	11.10.84	Harrold GP	X	1672	SW
Swallow	C265566	3	J	27.8.84	Girtford	15.1.85	Harrold GP	X	1061	SW
	C265433	3	J	15.8.84	Girtford	16.7.85	Oldham, Manchester	X	283	NNW
Song Thrush	RX13554	3	J	17.6.84	Girtford	5.9.84	Aldridge, Staffs	V	122	WNW
Reed Warbler	C266050	3	J	10.8.85	Girtford	23.1.85	Toull, Taunton, Somerset	X	232	WSW
						1.9.85	Le Mesnil St. Denis, Yuelines, France	V	411	SSE
Garden Warbler	B277102	3		15.8.81	Harrold	3.5.85	Foxes Covert, Ketton, Northants	V	44	
Chiffchaff	9H7376	3		20.7.85	Harrold	8.9.85	Beachy Head, Sussex	V	173	SSE
	SK9820	1		28.7.85	West Tofts, Norfolk	10.9.85	Upper Stondon	V	105	SW
Starling	XK05811	2	♂	27.12.80	Carlton	15.5.84	Castricum, Netherlands	X	360	E
Brambling	B950827	6	♀	26.2.84	Walcot, Shropshire,	9.4.84	Luton Hoo	X	177	SE
Reed Bunting	B669806	3	♂	27.2.85	Houghton Regis	26.9.85	Queen Mary Reservoir, Surrey	V	56	SSE
	C358717	4	♂	22.2.85	Weston Turville Reservoir, Bucks	15.6.85	Girtford	V	50	NE

Euring age code: 1 Pullus: nestling or chick
 2 Fully grown, but year of hatching unknown
 3 Hatched during calendar year of ringing (J-juvenile plumage)
 4 Hatched before calendar year but exact year unknown
 5 Hatched during previous calendar year
 6 Hatched before previous calendar year but exact year unknown

Sex: ♂ male
 ♀ female

Recovery Manner: V - Controlled (trapped and released)
 + - Shot or killed
 X - Found dead or dying

Table. Details of selected ringing and recovery records

AMPHIBIANS AND REPTILES

Report of the Recorder

The dismal weather during 1985 led me to believe that my report for the year would be very brief, however I was wrong for some very interesting records turned up, mainly concerning reptiles. I think that if the conditions had been more appealing to humans the number of records would have been quite high. The probable reason for the reptile activity was that the animals were taking every opportunity to bask in an effort to raise their body temperature.

In the spring I led a field meeting at Cople Pits Nature Reserve to look for amphibians. The toads had spawned and most of the adults had left the water. There was also a very small amount of frog spawn. The Reserve is a good place to see Common Lizards in warm weather but none were seen on this cool day until we were leaving when I found one basking on a polythene sack on the grass verge outside the Reserve.

A survey of the reptiles and amphibians at Coronation Pit, Houghton Conquest, was done over several weeks by Mr A. Muir-Howie for the Site Recorder. The late game warden provided some useful information about the populations in recent years. Species recorded here in 1985 were Grass Snake, Common Lizard, Common Frog, Great Crested Newt and Smooth Newt.

Mr R. George commented to Mr V. Arnold that more Grass Snakes had been seen in Melchbourne Park during 1985 than he could remember in previous years. This report gave us a new tetrad record, and of the nine other reported Grass Snake sightings only one was at a previously recorded site. The new sites were at Brickhill, Coronation Pit, Yelden, Riseley, Tempsford, Girtford Pits and at two places on the River Gt. Ouse in Bedford. I do have earlier records from different sites in Brickhill and Riseley but four new tetrads were included here.

Once again Rowney Warren was the location of a sighting of an Adder but this one was in a different area of the wood putting it in the next tetrad (TL 14F). Previous records were from TL 14A. This Adder was seen regularly by several people during the first two weeks of August, with Mr D. Parsons being the first to notify me of it. It was seen basking on a plastic bag by a manhole cover, sometimes in the company of a Slow Worm and a Common Lizard. This is unusual as Adders will take both of these lizards as prey.

I received one other Adder record and this was from a completely new area of the county for these snakes. Mr C. Tack informed me of a large Adder found dead on the road by Landpark Wood, Whipsnade. It was a gravid female carrying 13 young.

The Rowney Warren sighting of a Slow Worm provides a new 10Km record for this species and I was also told of one found on the picnic area at Bromham Mill. The Slow Worm colony at Whipsnade is still doing well with young being seen.

Apart from the Common Lizard seen at Cople Pits, Mr G. Hooper saw one close by at Willington and I was told of a possible colony in a garden at Bromham. This needs confirmation as they could be newts.

Records for amphibians were rather sparse. A few people reported breeding activity in their garden ponds and I heard of a couple of large toad migrations in the spring.

I was informed of a breeding site of Great Crested Newts at Cranfield which was new to my records. This site is in an area of proposed development but the builders are aware of the nature of the site and say that they will leave the pond intact. I also learnt of a number of Great Crested Newts found in a garden at Bromham from Mr A. Martin. Records of all wild sites of Great Crested Newts in Bedfordshire have been submitted to the national Great Crested Newt survey.

1985 marks the end of the current National Recording Scheme of Herptiles which has built up a general picture of their distribution using 10Km squares. Bedfordshire records are fully up to date in Monks Wood's records and the British Herptile Atlas is now being prepared for publication. In future schemes it is proposed to keep much more detailed records hopefully based on the 1Km square grid or, failing that, on tetrads (4Km squares).

At county level I hope to build up a much more accurate picture of herptile distribution. To start with I am commencing a garden pond survey, as the garden pond is a very important habitat and breeding ground for amphibians but obviously one to which I have no access.

Another item of note for 1985 was the First Seminar of Herptile Recorders which was held in October at the Zoological Society of London's Meeting Rooms at Regent's Park. A report of this meeting was in the winter edition of *The Muntjac*. A second meeting is planned for 1986 and will be open to anyone interested in herpetology.

I wish to extend my sincere thanks to everyone who braved the cold in 1985 and gathered records for me.

HELEN M. MUIR-HOWIE

SLUGS AND SNAILS

Report of the Recorder

During 1985 much field work was carried out to raise the standard of recording in some under recorded areas. Much of the far north of the county still needs many visits to bring the distribution patterns up to standard.

Work has begun on the general lay-out for an atlas of the Mollusca and Mr D. Guntrip has begun to produce drawings with the aid of a microscope for the freshwater species. He is concentrating on drawing all the freshwater species first as there is no really modern book which adequately covers this group and this, hopefully, will fill a gap in the book market.

In the Journals for 1981 and 1982 (*Bedf. Nat.* 36 39; *Bedf. Nat.* 37 38) I reported new "exotic" finds for the county in garden centres and nurseries. My interest in these man-made habitats continues. On Sunday 15th September 1985 Mr D. Guntrip and I attended the open day at Stockwood Park Nurseries, Luton. Living among the flint gravel outside, in areas where plants in pots are kept in readiness for planting in parks etc., we found several specimens of a very small mollusc. This was later confirmed as being *Toltecia pusilla* (Low 1831). This mollusc has a Mediterranean distribution pattern, living along the coast and among the mountain slopes.

It is rare to find a new mollusc for v.c. 30 Bedford but to find a mollusc new to Britain is even more unusual and in this case we did both. Congratulations to Mr Guntrip for finding the first specimen. Subsequently we searched other similar habitats in garden centres and nurseries and found three other sites. They are at the Co-op Garden Centre, Luton (TL02V), Willington Garden Centre (TL14 E) and Bickerdyke's Nursery, Sandy (TL14 U). We also visited Frost's Garden Centre, Woburn Sands, Buckinghamshire with Dr A.J. Rundle and found it living in a similar habitat.

Naturally, while looking for *Toltecia pusilla*, we recorded all the other molluscs we could find. At Bickerdyke's Nursery, TL14 U, I found a small slug living in a deep fissure in a log in one of the garden beds among Ivy and heathers. I realised that this slug, although immature, was not one of our British species. I took it home and reared it to maturity. As soon as it had laid eggs (showing it was now mature) the animal was dissected by Dr D. Holyoak, Nottingham University who confirmed that it was indeed a very pale specimen of *Limax valentianus* Ferrusac 1821. This is the first English record for this slug living in the open (a fairly common inhabitant of hot-houses in Botanic Gardens). Two other outdoor sites are known, one in a Dublin garden and one in a Belfast garden.

Last year in the Journal for 1984 (*Bedf. Nat.* 39 37) I asked members to collect bags of flood debris. I am indebted to Miss R. Brind for one such contribution from Cardington Mill. The debris when sorted yielded 36 species. Please continue to collect any flood debris that you may find.

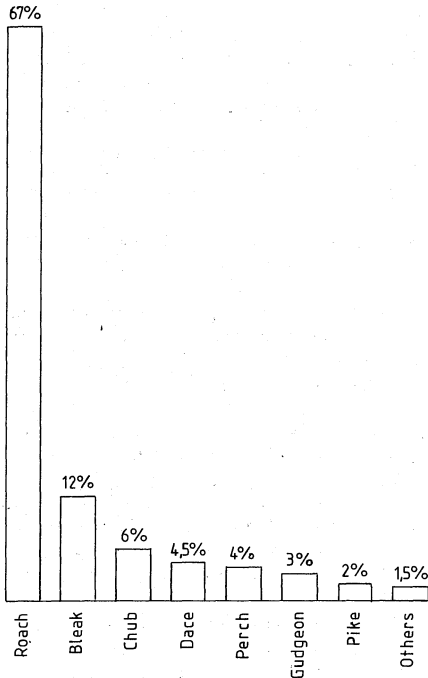
I would like to thank anyone who has given me any help during 1985 and will be pleased to identify any molluscs for members. Every single specimen counts towards our more complete knowledge of our county.

E. BERYL RANDS

FISH

Report of the Recorder

Again, the Anglian Water Authority kindly supplied us with reports of detailed fishery surveys carried out in 1985. One concerned the River Ivel and its tributaries, but I shall not refer to this in detail as these locations were well covered in the 1983 Fish Report (*Bedf. Nat.* 38 39-41). The other was the important survey of the upstream section of the Great Ouse from Turvey to Bedford, and this we shall be looking at closely. However, I was able to extract no less than 57 new county tetrad records from both reports.



Comparative abundance of species. R. Great Ouse — Turvey to Bedford.

upstream stretch, certain obvious differences can be seen, making the following general observations per species appropriate:

Roach The most numerically abundant species at both locations, although comparatively slightly less numerous in the downstream section with a c.a. (comparative abundance) score of 51%, against c.a. 67% in the upstream stretch.

Bleak Far more abundant in the upstream stretch, coming second place in the c.a. stakes with a score of 12%, compared with a modest joint 4th place in downstream section with a c.a. score of 5%.

Chub Again, much more abundant in the upstream stretch, coming 3rd place with a c.a. score of 6%, against a low 7th place in the downstream section with a c.a. score of 1%.

Dace Holding the same position at both locations, with a clear 4th place in the upstream section and joint 4th in the downstream stretch, with c.a. scores of 4.5% and 5% respectively.

The graph shows the comparative abundance per species, represented as a percentage of the total number of fish taken from the upstream section of the Ouse. As in most of our linear waters — except for the minor Rivers Flit, Hiz and Hit — Roach are the most numerically abundant species accounting for 67% of the total, followed by Bleak (12%), Chub (6%), Dace (4.5%), Perch (4%), Gudgeon (3%) and Pike (2%). As has now become normal practice, the “others” mentioned are those species whose individual scores came to less than 1% of the total. In this case — and in order of numerical abundance — they are: Common Bream (0.5%), Barbel (0.4%), Eel (0.2%), Ruffe (0.1%), Silver Bream (0.1%), Tench (0.1%) and Roach/Bream Hybrids (0.1%).

Each species contribution by weight to the mean biomass shows, as usual, a different picture to the figures for comparative abundance. The results for the upstream section of the Ouse are: Roach (40%), Chub (24%), Pike (15%), Barbel (4%), Perch (4%), Tench (3%), Common Bream (3%), Bleak (2%), Dace (2%), Eels (2%) and Gudgeon (1%).

The 1983 Fish Report speculated on whether or not the survey results for the upstream section of the Ouse would show any significant differences between this and the ichthyofauna of the downstream stretch. If you compare the graph showing the comparative abundance results for the downstream section (*Bedf. Nat.* 38 40, Fig. 1) with the graph in this report for the

- Perch** Slightly more numerous in the upstream section, coming 5th place in the c.a. stakes with a score of 4%, against joint 6th place in the downstream stretch with a c.a. score of 2%.
- Gudgeon** Far more numerous in the downstream stretch, coming second place in the c.a. stakes with a score of 22%, against 6th place in the upstream stretch with a c.a. score of only 3%.
- Pike** Holding roughly the same position at both locations, coming a joint 6th place in the downstream stretch and a clear 7th place in the upstream section, with a c.a. score of 2% at both sites.
- Ruffe** Considerably more numerous in the downstream section, coming 3rd place in the c.a. stakes with a score of 8%, against a very modest 11th place in the upstream stretch with very low c.a. score of 0.1%.
- Common Bream** Significantly more abundant in the downstream stretch, coming 5th place in the c.a. stakes with a score of 3%, against 8th place in the upstream section with a score of 0.5%.
- Eels, Tench and Silver Bream** held roughly the same positions at both locations, and in neither survey did their individual scores exceed 1% of the total. However, in the case of Silver Bream it is significant to note that they seem to be slightly more abundant in the downstream section with a c.a. score of 0.46%, against 0.1% in the upstream stretch.

The 1983 Fish Report also noted the fact that specimens of Zander, European Catfish and Barbel had not been discovered during the AWA's survey of the downstream section of the Ouse, and speculated upon whether or not any of these species (all known to exist in the Great Ouse) would turn up in the survey of the upstream stretch. Sadly, I have to report that neither Zander nor European Catfish turned up during the survey, and we can only conclude that these species exist in very low numbers or are highly localised.

However, the survey discovered Barbel at four of the thirteen sampling sites which fell within the boundaries of Bedfordshire, and also provided us with two new county tetrad records for this species. It is also significant to note that Barbel came a very respectable 9th place in the comparative abundance stakes, and that their contribution of 4% to the mean biomass was equalled only by Perch and exceeded only by Pike, Chub and Roach. As for breeding success and growth rates, the report had the following comments to make: "Nine different year classes were recorded showing consistent spawning success albeit at a low level. The limited data available suggests that growth is moderate to fast." The report also goes on to predict that angling for Barbel should be good over the next few seasons "in areas where they flourish" — which, at present, would seem to be certain sites in that section of the Ouse upstream of Bedford. (Incidentally, for the benefit of those who may not have seen the 1983 Fish Report, it would be appropriate for me to clarify the fact that Bedford town itself is the central point from which we refer to either the "upstream" or "downstream" sections of the Ouse.)

It is now a whole decade since I was appointed as the Society's Fish Recorder (although compared to many of the BNHS stalwarts, I am still a mere green-around-the-gills novice) and this is my 10th Annual Fish Report. The work has given me a great deal of enjoyment and satisfaction, although I confess to being disappointed by the small percentage of members who have submitted fish records over the years. On the other hand, one must recognise the fact that fish are not the most straightforward things to identify in the field, so this says a great deal for the sterling work put in by those who have supplied records. However, recently I have become concerned by the possibility that people may feel that as we now have access to detailed fishery surveys supplied by the AWA, any information which they can give would be of little use to us. Let me state that this is most emphatically not the case. For example, 1985 produced an excellent total of 73 new county tetrad records for the 20 species listed below — 22% of these records being supplied by the following three individual members, to whom I must express my sincere thanks:

D.W. Guntrip, A. Muir-Howie and B.M. Inns. Also, I must express my gratitude to D.R.H. Price of the AWA.

Pike *Esox lucius* — 5 tetrads. 95MT, 04G, 05B, 14Y.

Perch *Perca fluviatilis* — 5 tetrads. 95MT, 04G, 05B, 13E.

Roach *Rutilus rutilus* — 5 tetrads. 95M, 04J, 05B, 13PY.

Rudd *Scardinius erythrophthalmus* — 3 tetrads. 13P, 14U, 15K.
Dace *Leuciscus leuciscus* — 7 tetrads. 95G, 04IJ, 05ABG, 15K.
Chub *Leuciscus cephalus* — 5 tetrads. 95Z, 04IJ, 05B, 13Z.
Gudgeon *Gobio gobio* — 5 tetrads. 95M, 04I, 05B, 13PX.
Bleak *Alburnus alburnus* — 7 tetrads. 95MTZ, 04IJ, 05BG.
Common Bream *Abramis brama* — 2 tetrads. 95M, 05G.
Silver Bream *Blicca bjoerkna* — 2 tetrads. 04J, 05E.
Tench *Tinca tinca* — 1 tetrad. 95M.
Barbel *Barbus barbus* — 2 tetrads. 95GT.
Carp *Cyprinus carpio* — 2 tetrads. 13E, 14U.
Crucian Carp *Carassius carassius* — 2 tetrads. 14UY.
Eel *Anguilla anguilla* — 4 tetrads. 95GT, 05B, 14U.
Bullhead *Cottus gobio* — 4 tetrads. 92R, 02P, 05BG.
3-spined Stickleback *Gasterosteus aculeatus* — 3 tetrads. 92LWX.
10-spined Stickleback *Pungitius pungitius* — 5 tetrads. 92LRWX, 02I.
Stone Loach *Noemacheilus barbatulus* — 2 tetrads. 92RX.
Ruffe *Gymnocephalus cernua* — 2 tetrads. 04J, 15K.

TONY PETERKIN

SPIDERS (Araneae)

Report of the Recorder

Eleven uncommon and rare species were added to the county list during 1985. Most were taken by "continuous" methods, such as pitfall trapping, at selected sites. Other techniques, e.g. the Bignell tray (an umbrella is easier and cheaper!), were used in areas well-worked and gave, for example, the uncommon *Araneus inconspicuus* from a bramble patch at Old Warden Tunnel, Nature Reserve (OWT, NR) and the rare *Philodromus collinus* from conifers at Rowney Warren.

A mature male of the very rare *Centromerus incultus* found in a pitfall at OWT, NR was destroyed in the post when sent to the national expert for checking; the accompanying specimens of *P. collinus* survived. Nevertheless, *C. incultus* is noted for the record.

Whilst examining a disused, yet still damp, farm sewer point on St. Ann's Hill, Luton, several females of *Nesticus cellulanus* were found with their egg-sacs. For anyone who wants to see some of our larger spiders such as *Tegenaria* spp. or *Amaurobius* spp., this is the habitat to examine. Care is needed as the powerful, sloe-bodied *Amaurobius ferox* can give a painful nip, more startling than harmful.

A revised list of British Spiders, which has the latest additions and name changes, has been published (Merret. P., Locket. G.H. and Millidge. A.F. A check list of British spiders. *Bull. Br. arachnol. Soc.* 1985 6(9) 381-403). A future annual report will have to include a rewritten check list for Bedfordshire spiders.

ADDITIONS TO THE COUNTY LIST

Family: Thomisidae

Xysticus erraticus (Blackwall)

Philodromus collinus C.L. Koch

Family Agelenidae

Cryphoeca silvicola (C.L. Koch)

Family: Nesticidae

Nesticus cellulanus (Clerck)

Family: Araneidae

Araneus inconspicuus (Simon)

Family: Linyphiidae

Ceratinella scabrosa (O.P.-Cambridge)

Pocadicnemis pumila (Blackwall)

Erigonella ignobilis (O.P.-Cambridge)

Porrhomma egeria Simon

Centromerus expertus (O.P.-Cambridge)

C. incultus Falconer

T.J. THOMAS

THE SPIDERS AND HARVESTMEN OF OLD WARDEN TUNNEL NATURE RESERVE PART IV. COMPARISON OF THE THREE TRAPPING SITES

By T.J. Thomas

INTRODUCTION

This is the fourth report in the series on the pitfall trapping experiment (Thomas 1983) at Old Warden Tunnel, Nature Reserve (OWT. NR). The three test sites, using the results so far obtained, are compared and contrasted in order to assess any effect that the management regime may have had upon their spider and harvestmen fauna. Because of the vandalism that had occurred (Thomas 1985) any comments and conclusions drawn must be treated with care. The tables and references follow on from the previous papers.

PLANT STRUCTURE AND ARACHNID FAUNA

Spiders and harvestmen are carnivores, generally catholic in their tastes, neither plant dependent nor plant specific. Nevertheless, a plant community will have some effect upon the arachnid fauna, in that structural differences (see e.g. Duffey 1962, Duffey *et al* 1974) would offer ranges of cover, shelter, micro-climate i.e. humidity and temperature, and impedance to the inherent mobility of the invertebrate.

Cover will come from the habit of the vegetation, in its height and degree of overhang, as well as from the gaps between the plant clumps. Shelter within will be governed by the closeness of growth giving a range of interstices which, apart from providing retreats, would impose a restriction upon the arachnid's mobility. The ambient conditions (Cloudsley-Thompson 1969), especially at ground level, will depend upon these plant structures and are very important for many invertebrates, particularly harvestmen which are sensitive to humidity changes (Todd 1949). In addition, the temperature, which can affect the humidity of a site, is very dependent on the aspect of that site (Geiger 1965).

As pitfalls capture mainly cursorial creatures then any differences between the plant structures of the trapping areas affecting the above factors, e.g. by the mowing of Area B and provided no major modification had occurred in the sites by the setting of the traps, may be shown in the spider and harvestmen fauna of those three sites.

PLANT STRUCTURES IN THE THREE TRAPPING AREAS

The characters of the three selected sites, apart from their differing aspects (Table 2), are determined by the abundant plants which are the grasses, *Arrhenatherum elatius* and *Brachypodium pinnatum* in Area A, *Bromus erectus* in Area B, and *B. pinnatum* in Area C (Table 1). One result of their dominance is shown in the number of plant species, which are for the Areas A, B and C, 28, 27 and 17 respectively (Table 1). The cover and shelter given by these grasses is each quite different, especially visually, this being most marked in Area C. Closer examination of this site showed that the *B. pinnatum* grew in close tufts with long leaf blades forming dense overhanging mats (most noticeable in winter) beneath which were large patches of bare or mossy earth (cf. Duffey 1962). This habit of *B. pinnatum* is very much diluted in Area A by the presence of the equally abundant *A. elatius*, there being few earth patches or any dense overlay of leaves. The close growth in this site may give a greater range of interstices than Area C, providing a wider variety of shelters and retreats. In contrast, the management of Area B, where the dominant grass is *B. erectus*, exposed many small patches of earth amongst, as well as around, the more open plant clumps giving much less cover and shelter and probably a more variable, drier microclimate. The denser or closer growth on the other two sites would tend to maintain steadier ambient conditions.

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The range of interstices amongst the plants, as well as the gaps between the clumps, would tend to restrict movement of the arachnids, even deterring some from entering the areas. On the other hand, the extreme openness of Area B would encourage movement through the need to seek shelter.

THE CONSISTENCY OF THE PITFALL TRAPPING RESULTS

Pitfall trapping, although frequently used as a collecting technique, has been criticised by various authors (e.g. Southwood 1978). In particular, Duffey *et al* (1974) state that "... pitfall trapping is ... unreliable for comparison between treated areas ... comparison of different areas ... is difficult and quantitative comparison of areas managed in different ways is quite impossible ...". This may be so, but OWT. NR is surrounded by arable lands and is, virtually, an island of wildlife communities and populations. Provided that no radical alterations take place within the reserve, then any changes that occur will take place slowly, maintaining a relatively constant flora and fauna. Thus, any collecting method systematically applied to such a place as OWT. NR should consistently take those creatures that are "capturable" without any implication that such results are a measure of trapping efficiency (e.g. Curtis 1980) or of the community and population under investigation. Are the results of the present experiment consistent?

The proportions, as percentages, of the spider and harvestmen families for each trapping year are given in Table 5. The application of Friedman's Test (Russell Langley 1968) proved no

Year	1979	1980	1981	1982	1983	1984	1985
	%	%	%	%	%	%	%
Spiders							
Dysderidae	1.4	1.5	0.2	0.6	0.4	0.4	0.2
Gnaphosidae	3.2	3.3	1.8	0.7	1.4	1.2	1.4
Clubionidae	11.2	11.6	10.3	8.0	7.0	7.5	5.0
Thomisidae	1.2	1.5	1.1	1.6	1.7	2.4	1.7
Salticidae	0.1	1.0	0.8	0.4	0.6	0.7	0.2
Zoridae	1.1	1.4	2.1	2.2	1.5	2.5	1.6
Lycosidae	54.9	49.9	29.9	44.2	40.3	36.3	41.1
Pisauridae	1.2	1.5	0.3	0.3	1.3	1.2	1.1
Agelenidae	1.5	0.7	2.1	0.8	2.5	2.0	1.7
Mimetidae	0.3	0.3	0.4	0.5	0.7	0.4	0.1
Theridiidae	1.2	1.2	1.7	2.1	1.7	1.7	1.2
Tetragnathidae	0.1	1.7	1.2	2.0	2.6	1.7	1.6
Araneidae	0.1	0.5	0	0	0	0	0
Linyphiidae	22.8	24.0	48.3	36.7	38.4	42.1	42.9
Harvestmen							
Trogulidae	0	0	0	0.3	0.2	0.2	1.3
Nemastomatidae	1.1	4.6	5.4	4.0	4.5	2.6	6.5
Phalangidae	98.9	91.5	92.2	91.1	94.5	94.1	83.9
s.j. *	0	3.9	2.4	4.8	1.1	3.5	8.4
Spiders:	(1979-1983)		$\chi^2 = 5.2$	($P_{10\%} 10.64$)			} NS
	(1979-1985)		$\chi^2 = 3.1$	($P_{10\%} 10.64$)			
Harvestmen:	(1979-1983)		$\chi^2 = 1.2$	($P_{10\%} 10.64$)			} NS
	(1979-1985)		$\chi^2 = 3.45$	($P_{10\%} 10.64$)			

* - not assignable to any family

NS - significant difference not proven.

Table 5. Spider and Harvestmen families recorded in each year of the survey

significant differences between the years for either of the two arachnid orders, implying that the trapping had been consistent throughout. Therefore, any variations in the trapped arachnid fauna between the three sites is most likely due to the differences, some of which are caused by management, in the plant structures.

COMPARISON OF THE TRAPPING SITES

All the results are noted for the record: 1977 and 1978 were when the traps were originally set (Thomas 1983); vandalism forced a change in 1983 (Thomas 1985).

The number of species and individuals captured. The totals of individual spiders show little or no differences between the areas (Table 6), whereas for the harvestmen Area B had two to fourteen times fewer captures. For both orders the numbers of species were slightly lower for the same site. Overall, the results indicated that of the three sites, Area B was quite different.

Area	Spiders						Harvestmen					
	A		B		C		A		B		C	
	Sp.	Ind.	Sp.	Ind.	Sp.	Ind.	Sp.	Ind.	Sp.	Ind.	Sp.	Ind.
Year												
1977	6	15	5	9	8	18	3	8	4	5	3	4
1978	27	213	24	166	19	81	9	218	6	124	7	481
1979	35	218	29	236	36	270	8	228	6	192	6	840
1980	28	229	33	283	37	270	7	181	5	54	7	746
1981	36	242	24	191	30	212	5	343	5	127	6	384
1982	41	325	34	258	42	413	8	830	5	116	8	669
1983	40	312	36	212	35	208	8	737	7	167	9	848
1984	37	290	36	302	40	171	6	216	5	61	8	276
1985	39	446	39	342	36	220	7	101	3	30	6	164

Table 6. The numbers (species - sp.; individuals - ind.) of spiders and harvestmen captured

The distribution of the species. If the management regime affected the arachnid fauna then perhaps some species may be confined to or excluded from one or two of the areas.

Of the spiders, 15 species were found only in Area A, 14 in Area B and 9 in Area C. The total individuals for these 38 species accounted for less than 1% of all the 1979-1985 captures. Such small numbers are probably unimportant when attempting to assess the effects of management (see Duffey 1962). In any two areas, AB, AC and BC had 9, 12 and 2 species respectively. Again, as these were only 3% of all captures, they are not significant.

No species of harvestmen were confined to any one area, and the two species found only in two of the sites were 2% of all takes and so were unlikely to be important.

The distribution of the dominant species. Duffey (1962) states that variations in the physiognomy of a plant community may be reflected in changes in the "dominant" species of spiders which, perhaps, would apply to the harvestmen as well. The "dominant" or "abundant" species in this experiment have already been defined (Thomas 1984, 1985).

Nine species, six spiders and three harvestmen, accounted for 48.5% and 84.2% of their respective total captures (Table 7). The results showed that the spiders *Trochosa terricola* and *Alopecosa pulverulenta* were evenly distributed between the three sites. Two of the other "dominant" spiders, *Pardosa nigriceps* and *Agroeca inopina*, had greater variations in their distributions. In the case of the former, which was taken mainly in Area C, the plant structure, with the open spaces beneath the *B. pinnatum* mat, had been suitable for this very active, climbing species. Surprisingly, in spite of its apparent suitability, Area A had the fewest numbers of *P. nigriceps*. It may be here that shade, i.e. aspect, is the deciding factor as the activity of many spiders is temperature dependent (Pearson and White 1964). The openness of Area B, with its lack

Area	A			B			C		
	Mean of total captures %			Mean Captures per year					
Spiders									
<i>Trochosa terricola</i>	12.8	41	31	28					
<i>Lepthyphantes tenuis</i>	9.0	35	18	19					
<i>Alopecosa pulverulenta</i>	7.6	15	23	18					
<i>Pardosa nigriceps</i>	7.3	6	11	26					
<i>Agroeca inopina</i>	6.7	14	28	11					
<i>Bathyphantes gracilis</i>	5.1	26	4	11					
Harvestmen									
<i>Oligolophus tridens</i>	46.5	171	32	301					
<i>Platybunus triangularis</i>	32.5	118	30	152					
<i>Oligolophus agrestis</i>	5.2	14	14	41					

Table 7. Captures of the "dominant" species

of cover and shelter, would favour and not impede the less active *A. inopina*.

Lepthyphantes tenuis and *Bathyphantes gracilis* have to be recognised as special cases as the pitfalls had modified the habitats (Thomas 1984) allowing these two spiders to build their webs inside the traps which had provided extra shelter and web construction points. These species were shown to be mainly winter-active (Thomas 1984) showing the need for shelter and web points, all of which are provided by Area A. This is borne out by this trapping site having the largest numbers of these two spiders. In contrast, the openness and relative bareness of Area B and the spaces beneath the dense grass mat of Area C would account for their fewer captures.

Therefore, the numbers of "dominant" spiders captured indicated preferences for different areas without showing that the managed Area B was especially unusual. This suggests that spiders, either as an order or a species, are not likely indicators for demonstrating differences between managed grasslands (Duffey *et al* (1984) point out that plant structures are important to different spiders for quite different and distinct reasons, e.g. hunting and aeronauting).

Area B had the least captures, in numbers and in species, of harvestmen. Probably the main factor for the presence or absence of this group in a site will be the humidity of that site, especially at ground level. Indirectly, the aspect of the area would determine the temperature thus affecting the humidity. It follows that the management of Area B which, in removing the cover, would radically affect the microclimate, probably creating drier conditions, enhanced by the south-western aspect of the site, makes this area unsuitable for harvestmen. Therefore, in contrast to spiders, harvestmen may be useful in showing up the differences between grasslands.

STATISTICAL EXAMINATION OF THE TRAPPING RESULTS

Despite the problems associated with the continuity of the experiment being spoiled by occasional vandalism, the results were put to two statistical tests, Friedman's Test, which compared the number of species over the seven years of the survey, and Wilcoxon's Sum of Ranks Test which compared the trapping areas (Russell Langley 1968).

No significant differences were proven between the three areas for the numbers of spiders implying that these all came from the same population i.e. the "capturable" spiders (Table 8). The harvestmen numbers were found to be significantly different for Area B when compared to Areas A and C. A similar pattern occurred with the species where again the spiders were proved not to be significantly different between the areas, and the harvestmen showed that Area B was significantly different.

Amongst the six "dominant" spider species there were no significant differences between the areas for *T. terricola* and *A. pulverulenta* (Table 9) whereas the other four species showed significant differences: Area A was favoured by *L. tenuis* and *B. gracilis*, Area B by *A. inopina* and Area C by *P. nigriceps*. These results showed that, despite the structural variations between the sites, the "dominant" spiders did not all prefer one exclusive area.

	Spiders		Harvestmen	
Wilcoxon's Sum of Ranks Test				
Individuals				
area A versus B	R = 46		R = 32	P _{1%} 32(S)
area B versus C	R = 47.5	P _{10%} 39(NS)	R = 30	P _{1%} 32(S)
area A versus C	R = 41		R = 42	P _{10%} 39(NS)
Species				
area A versus B	R = 37.0	P _{5%} 36(NS)	R = 34.5	P _{5%} 36(PS)
area B versus C	R = 38	P _{5%} 36(NS)	R = 31.5	P _{1%} 32(NS)
area A versus C	R = 53.5	P _{10%} 39(NS)	R = 51.5	P _{10%} 39(NS)
Friedman's Test				
Individuals				
1979-1983	$\chi^2 = 0.4$	P _{10%} 5.0(NS)	$\chi^2 = 8.4$	P _{1%} 8.3(S)
1979-1985	$\chi^2 = 0.3$		$\chi^2 = 13.3$	P _{0.1%} 11.4(S)
Species				
1979-1983	$\chi^2 = 5.2$	P _{10%} 5.1(NS)	$\chi^2 = 9.7$	P _{0.1%} 9.9(S)
1979-1985	$\chi^2 = 4.5$	P _{10%} 5.0(NS)	$\chi^2 = 12.6$	P _{0.1%} 11.4(S)

NS - significant difference not proven PS - probable significant difference
S - significant difference

Table 8. Summary of statistical data for all species.

Test	Wilcoxon's run of Ranks			Friedman's χ^2
	A v B	A v C	B v C	
Spiders				
<i>Trochosa terricola</i>	41.5 (NS)	39 (NS)	51.5 (NS)	4.3 P _{10%} 5.0 (NS)
<i>Lepthyphantes tenuis</i>	31 (S)	38 (NS)	48.5 (NS)	10.8 P _{1%} 8.7 (S)
<i>Alopecosa pulverulenta</i>	46 (NS)	54 (NS)	50 (NS)	1.9 P _{10%} 5.0 (NS)
<i>Pardosa nigriceps</i>	30 (S)	30.5 (S)	41 (NS)	12.3 P _{0.1%} 11.4 (S)
<i>Agroeca inopina</i>	28 (S)	46.5 (NS)	30 (S)	11.1 P _{1%} 8.7 (S)
<i>Bathyphantes gracilis</i>	28 (S)	32 (S)	34.5 (PS)	12.3 P _{0.1%} 11.4 (S)
Harvestmen				
<i>Oligolophus tridens</i>	34.5 (PS)	43 (NS)	30 (S)	9.7 P _{1%} 8.7 (S)
<i>Platybunus triangularis</i>	34.5 (PS)	45 (NS)	31 (S)	21.3 P _{1%} 8.7 (S)
<i>Oligolophus agrestis</i>	50.5 (NS)	47 (NS)	46.5 (NS)	3.7 P _{10%} 5.0 (NS)

NS - significant difference not proven PS - probable significant difference
S - significant difference.

Table 9. Summary of statistical data for "dominant" species

Of the three "dominant" harvestmen species only two, *O. tridens* and *P. triangularis*, showed any significant differences between the areas, each species being poorly represented in Area B. Therefore this site is unsuitable for harvestmen either in numbers or in species.

Overall the statistical evaluation of the trapping results indicated that Area B was dissimilar to the other two in terms of harvestmen. Spiders were shown to be unsuitable for marking differences between sites.

CONCLUSIONS

The pitfall trapping experiment in selected areas at OWT. NR had three objectives: to find new species of spiders and harvestmen for the Reserve; to establish the activities, i.e. life styles, of the "dominant" species; and to see if any differences between the arachnid fauna of each site were due to the management scheme which was designed to maintain a hay meadow flora on one of those sites. The results for the first two objectives have been reported upon (Thomas 1984, 1985).

Throughout the trapping the yearly proportions of spider and harvestmen families in the captures were consistent. Thus, despite criticisms of this collecting technique being used to compare grassland areas, it was considered not unreasonable to use the results in order to assess the effect of the management upon the arachnid fauna of one of those sites.

No significant differences were found between the three areas in their numbers and species of spiders. Although the "dominant" species, in the main, had their own distributions amongst the areas, none really pointed out any effect of the management on Area B. Therefore spiders, either in numbers or species, are not likely to be useful in assessing any effect of management on grasslands such as those at OWT. NR. On the other hand, using harvestmen for such a purpose is possible, for Area B was always poorer in captures of this order. The lack of cover and shelter, with the probably greater variations in microclimate amplified by the south-western aspect of this area, would make for conditions that are unsuitable for the humidity-sensitive harvestmen.

The pitfall trapping experiment has shown that the management regime of the grassland in the Cutting section at OWT. NR had had a significant effect on the numbers and species of harvestmen, but not on the spiders.

ACKNOWLEDGEMENTS

I wish to express my appreciation of those who helped in various ways: John Green, manager of OWT. NR, Jennie Green, John Priest and son, all of whom helped in the setting of the traps; John and Chris Dony for the survey of the flora; and the Beds and Hunts Wildlife Trust (formerly the Beds and Hunts Naturalists' Trust Ltd) for permission to carry out the experiment, which is continuing. And to the unknown who left a love letter in one of the traps and whose offer was not taken up, regretfully, owing to lack of time.

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BUGS (Hemiptera-Heteroptera)

Report of the Recorder

A very satisfying feature of the year concerned a rather inconspicuous water-surface bug, *Mesovelia furcata*, which was known only from Ampthill Park lake until this year. However, having discovered that this bug is to be found on rafts of algae in late summer I conducted a systematic search of flooded quarries in the county and established that it is actually widely distributed in quite large numbers. At Henlow, a raft of algae about two metres by one, held hundreds!

A surprising find in spring was a specimen of *Agnocoris reclairei*, a supposedly fenland bug of willows, at Toddington on 5th April 1985. This was in roadside litter on the parish boundary beside the Milton Bryan road. The few previous county records have been along the Ouse or Ivel valleys.

The year is notable in that I can report additional species for the county recorded by another Hemipterist. A visit to Dunstable Downs in August by Walter Le Quesne yielded one species, *Orthops basalıs*, which was a not unexpected addition to the list, and one which came as a surprise, *Deraeocoris scutellarıs*. He also visited Flitwick Moor and was able to add this to the small list of sites for *Anthocoris limbatus* in the county.

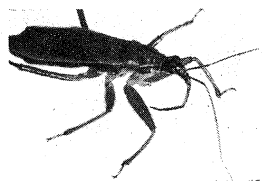
ADDITIONS TO THE BEDFORDSHIRE LIST

Lasiosomus enervis (Herrich-Schaffer) — on 13th April 1985 a single individual was found in a grass tussock at the margin of a sand quarry near Fox Corner, Heath and Reach. There are few recent British records of this bug, and all records together probably do not reach double figures.

Deraeocoris scutellarıs (Fabricius) — a single specimen was found on Dunstable Downs by W. Le Quesne on 5th August 1983. This is a very local species which has been found in only about a dozen counties in Britain.

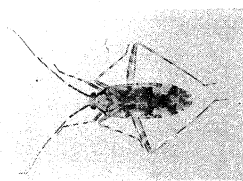
Orthops basalıs (Costa) — this was found on Dunstable Downs by W. Le Quesne on 5th August 1983. This species had not been recognised in Britain at the time of Southwood and Leston's book but my own fieldwork suggests it is widespread and, in places, common in Britain.

B.S. NAU



Nabıs flavomarginatus - female
Heath and Reach, July 1982.
(Photo: B.S. Nau)

Phytocoris tılıae - female
Potsgrove, August 1982.
(Photo: B.S. Nau)



MICRO-MOTHS (Lepidoptera)

Report of the Recorder

The county list totalled 570 species at the beginning of the year, and my report records the addition of fifty species during the year.

Most of the new species are the result of fieldwork, with only ten of the records coming from light-trap captures. Some twenty species have been recorded from the immature stages including leaf-miners and case-bearing larvae.

During the year we have studied the moths feeding on birch, recording fifteen new species. From conifer plantations we have added six species. The old railway cuttings at Sewell and Old Warden, together with the road cutting at Thurleigh, have produced six new species whose larvae feed in the rootstocks of various Compositae.

The autumn is a peak in the season for recording the smaller moths, particularly for the leaf-mining larvae. We had two excellent days of recording guided by A.M. Emmet, author of the current books on the leaf-mining families. We visited Flitwick Moor and Cooper's Hill, Ampthill on 28th September, and King's Wood (Heath and Reach) on 9th October. On these two days we recorded 108 species of micro-lepidoptera. During late October and early November we visited most of the under-recorded 10Km squares, with useful records obtained at Whipsnade, Luton Hoo, Pegsdon Hills, Salford, Bushmead and Potton Wood.

The species added to the county list are:

Eriocraniidae This year we have studied the leaf-mines on birches at Sutton Fen, Marston Thrift and King's Wood (Heath and Reach). All six birch-feeding species were recorded;

Eriocrania unimaculella

E. sparmannella

E. salopiella

E. haworthi

E. sangii

E. semipurpurella

Nepticulidae Two scarce species were recorded, each by the finding of a single vacated leaf-mine.

Stigmella ulmariae on meadowsweet at Stockgrove Country Park

Stigmella paradoxa on hawthorn at Pegsdon Hills.

Incurvariidae Vacated leaf-mines on birch;

Phylloporia bistrigella at Flitwick Moor

Heliozela hammoniella at King's Wood, Heath and Reach.

Imagines netted;

Lampronia rubiella at Coppice Wood, Melchbourne

Nemophora metallica at Dunstable Downs

Adela fibulella at Great Early Grove, Renhold

Psychidae

Narycia monilifera is shown recorded for Bedfordshire in MBGBI Volume 2. (No details available)

Tineidae

Nemapogon granella at Bedford (TL 04J)

Gracilariidae

Caloptilia robustella larval spinning on oak at Flitwick Moor

Parornix fagivora larvae on beech at Luton Hoo

Larvae in leaf-mines;

Phyllonorycter lantanella on wayfaring tree at Pegsdon Hills

P. klemanella on alder at Felmersham Nature Reserve

P. platanoidella on Norway maple at Pegsdon Hills

Choreutidae

Choreutis sehestediana flying at Felmersham Nature Reserve

Coleophoridae

Larval cases:

- Coleophora milvipennis* on birch at King's Wood (Heath and Reach)
- C. binderella* on birch at Flitwick Moor
- C. ardeaepennella* on oak at Putnoe Wood
- C. saxicolella* on fat-hen at Flitwick Moor
- C. taeniipennella* on rush at Felmersham Nature Reserve

Elachistidae

- Stephensia brunnichella* flying at Thurleigh road cutting

Gelechiidae

- Chrysoesthia sexguttella* vacated mine on fat-hen at Flitwick Moor
- Gelechia turpella* in m.v. trap at Sharnbrook
- Oegoconia deauratella* at Sharnbrook (1979). A paper by D.J.L. Agassiz (1982) separates three species. This specimen, and one from Cranfield in 1985, are of this species. Previous records of *O. quadripuncta* for which no specimens exist are unsound and therefore deleted from the county list.

Stathmopodidae

- Stathmopoda pedella* at Flitwick Moor

Momphidae

- Mompha subbistrigella* at Stotfold

Cochylidae

- Aethes tesserana* at Sewell cutting
- Cochylis flaviciliana* one good specimen of this scarce species in a light trap at Houghton Regis.

Olethreutinae Most of these species have been caught by netting amongst the foodplants;

- Epinotia bilunana* -birch at Rowney Warren
- E. nanana* - spruce at Marston Thrift
- E. rubiginosana* - pine at Stanford Wood
- E. trigonella* - birch at Rowney Warren
- E. maculana* - aspen at Marston Thrift
- Epiblema costipunctana* - ragwort at Thurleigh road cutting
- Clavigesta purdeyi* - pine at Rowney Warren
- Dichrorampha alpinana* -oxeye daisy at Old Warden Tunnel
- D. plumbagana* - yarrow at Sewell cutting
- D. sequana* - yarrow at Sewell cutting
- D. acuminatana* - oxeye daisy at Thurleigh road cutting
- D. plumbana* - oxeye daisy at Marston Thrift

Pyralidae

- Sitochroa palealis* at Marston Thrift
- Eurhodope marmorea* at Potton Wood
- Oncocera formosa* at Maulden Wood
- Assara terebrella* at Maulden

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ACKNOWLEDGEMENTS

Terry Hollingworth has sent me comprehensive records of his work during the year. Maitland Emmet has very patiently passed on to us some of his expertise in this study of larvae and leaf-mines. Vic Arnold and Adrian Riley have provided useful specimens for identification.

I would like to record my thanks to all the above for their contributions to this year's report.

DAVID MANNING

MACRO-MOTHS (Lepidoptera)

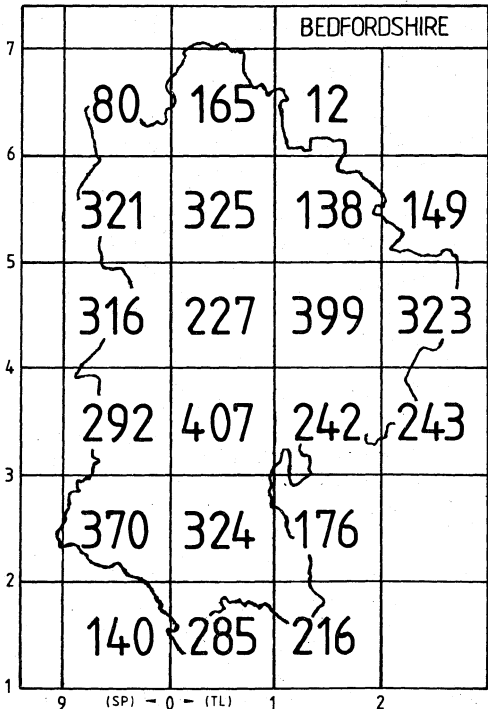
Report of the Recorder

The cold and wet spring and summer of 1985 were not very good for moths or for fieldwork. Despite this, a certain amount of fieldwork was done, and a look at the map for species recorded on a 10Km square basis (Fig. 1) shows an improvement over 1984. The weather affected recording in two main ways; the number of evenings when moth trapping could be done was lower than usual, and the actual number of moths seen was also lower than in previous years. The number of Hawk moths seen, for instance, was well below average.

During 1985 a concentrated effort was made to visit some of the under recorded areas of the county. Visits were made to Bison Hill, Whipsnade, in the south, and, thanks to the Hon. H. de B. Lawson Johnston, permission was given to run a moth trap in Coppice Wood, Melchbourne, in the north of Bedfordshire. The other sites that have been worked in the past were not neglected, and something of interest turned up at all of them.

As usual a number of other people working in the county sent me records, which I am always grateful to receive. Records received for the first time came from G. Higgs for Aspley Heath and Aspley Guise, Mr and Mrs E. G. Bowskill from Stotfold and C. Baker from Studham. A. Riley provided help with the identification of some of the critical species, and also produced an interesting list from the Houghton Regis area. T. S. Hollingworth finished his research work during 1985 at Cranfield and produced a number of interesting lists from various sites in the county.

Because the main work on moths is done at night, we tend to see other species of wildlife — these can range from Woodcock to Nightjars, Foxes to Deer and invertebrates other than moths. During 1985, we found Glow Worms *Lampyrus noctiluca* at Melchbourne on 12th July, Maulden Woods on 23rd July, and at Totternhoe Knolls at least 70 were



Number of species recorded in each 10Km square — as at 31.12.85.

counted on 7th August. On 24th July, at Luton Hoo, two Hornets *Vespa crabro* came to light, at the same site where they had been seen for the last two years.

SPECIES LIST

The following list contains new species and comments on species of particular interest where required. Species marked * are new county records. All numbers and English names as per *A Recorder's Log Book or Label List of British Butterflies and Moths* by J.D. Bradley and D.S. Fletcher.

- 16 **Gold Swift** A common moth, found in wooded areas where its foodplant, Bracken, grows. Recorded from a variety of sites in 1985 but not in 1984.
- 171 **Narrow-bordered 5-spot Burnet** Normally found on downlands and grassy places. Both 1984 and 1985 were good years for this day flying species.
- 1633 **Small Eggar** A further colony of this species was found by Mr A. Smith at Yelnow Lane, north of Odell Great Wood, feeding on Blackthorn on 29th June 1985.
- 1638 **Fox Moth** Two larvae were found on Pegsdon Hills on 21st October 1985 by the recorder. This species had not been recorded from the county since 1978.
- 1654 **Figure of Eighty** Reported from a number of sites including Coppice Wood, Melchbourne, Maulden Woods and Marston Thrift during 1985. Possibly becoming more common.
- 1677 **Birch Mocha** This species has not been recorded since 1975, when it was found in a Rothamsted trap at The Lodge, Sandy. It should still be with us in suitable locations.
- 1750 **Water Carpet** An uncommon Bedfordshire moth, taken at light by the recorder at Bison Hill, Whipsnade on 16th and 17th May 1985 and at Coppice Wood, Melchbourne on 25th May 1985.
- 1755 **The Chevron** Although this moth has been recorded on a regular basis from a Rothamsted trap at Cockayne Hatley, it appears to be uncommon in the majority of the county.
- 1762 **Dark Marbled Carpet** A moth that is normally found in woodlands — 1985 produced more records than for several years.
- 1768 **Grey Pine Carpet** Found all over the county on various species of conifer. Double-brooded, flying from May-July and September-October.
- 1771 **Juniper Carpet** Recorded at Clifton on 8th November 1985 by A.R. Outen and at two sites in Stotfold by Mr and Mrs Bowskill on 12th October 1985 and G. Castle on 17th October 1985.
- 1790 **The Tissue** At light, Marston Thrift by R. Passley and Aspley Guise by G. Higgs. Has only been recorded in the county a few times over the last few years.
- 1828 **Satyr Pug** One at light on 27th June 1985, Kings Wood, Heath and Reach, by the recorder. Identification confirmed by A. Riley of Rothamsted. Only the second recent county record.
- 1862 **Double-striped Pug** A common pug found each year in a variety of habitats — may have been misidentified in the past.
- 1864 **The Streak** An autumnal moth that occurs most years in Maulden Woods. Probably overlooked and fairly common on the greensand.
- 1865 **Broom-tip** A very scarce insect in Bedfordshire that, until it was recorded by J. Barnwell from Aspley Heath in 1985, had not been reported for seven years.
- 1912 **August Thorn** Recorded by R.B. Stephenson from his garden at Bromham. Never recorded from any site in large numbers.
- 1913 **Canary-shouldered Thorn** This very attractive insect was recorded from more sites this year than for many previous years.
- 1914 **Dusky Thorn** Has been recorded from a variety of sites over the last few years. Likes woodlands here its foodplant, Ash, is found.
- 1936 **Waved Umber** A moth that is widespread over the county, but never recorded in great numbers. Found in 1985 at Bison Hill, Whipsnade and Coppice Wood, Melchbourne.
- 1943 **Great Oak Beauty** This species was last recorded in 1975 from a Rothamsted trap at Old Warden. It should still be with us in some of our oak woods.

- 2029 **Brown-tail** At light, Aspley Heath by J. Barnwell and Pavenham by R. Passley. Although this moth has occurred over the last five years, no caterpillars have been reported.
- 2047 **Scarce Footman** Recorded every year but never from many sites, or in large numbers.
- 2061 **Buff Ermine** A common moth found all over the county. 1985 was a very good year for this species.
- 2063 **Muslin Moth** Recorded every year from different parts of the county, but never common. Cranfield, 22nd May by T.S. Hollingworth.
- 2081 **White-line Dart** A moth that has not been recorded since 1980. A species that prefers sandy soils and has probably gone unrecorded.
- 2091 **Dark Sword-grass** One at light, 10th September 1985 at Coppice Wood, Melchbourne by the recorder. The last year this species was common was 1983.
- 2122 **Purple Clay** A moth that is normally associated with woodlands. It is recorded most years, but not usually in large numbers.
- 2138 **Green Arches** A very uncommon Bedfordshire species. At light by D.V. Manning at Sharnbrook and by the recorder at Melchbourne; both in July.
- 2163 **Broom Moth** Now considered to be a common moth in the county, being found in reasonable numbers each year.
- 2197 **Southern Wainscot** At light, Flitwick Moor, 31st July 1985, by the recorder and T.S. Hollingworth. Last recorded from a Rothamsted trap at the Lodge, Sandy in 1971. The identity was confirmed by A. Riley of Rothamsted.
- 2214 **Chamomile Shark** Recorded by T.S. Hollingworth, both as a larvae and imago at Cranfield and Marston Thrift. An uncommon Bedfordshire moth.
- 2216 **The Shark** At light, Pavenham by R. Passley. This is the most common of the "Sharks", but it has become scarce over the last few years.
- 2240* **Blair's Shoulder-knot** First county record, 18th October 1985, Manor Close, Clifton by A.R. Outen. Has spread north since 1951 when the first British specimen was recorded. The larvae feed on the leaves and flowers of cupressus sp.
- 2243 **Early Grey** A common, well distributed Bedfordshire species.
- 2270 **Lunar Underwing** A common autumnal species that can be found all over the county.
- 2273 **Pink-barred Sallow** One of the most attractive of the autumn flying moths, but one that appears to be scarce. At light, Aspley Guise by G. Higgs and Marston Thrift by R. Passley.
- 2279 **The Sycamore** An uncommon moth, but 1985 appeared to be a good year for this species. Normally reported in the larval state.
- 2317 **White-spotted Pinion** At light on 10th September 1985, Coppice Wood, Melchbourne, by the recorder. Due to the loss of the foodplant of this species — elm, this species is considered to be a rare Bedfordshire moth; last recorded in 1977.
- 2334 **Rustic Shoulder-knot** 1985 was a very good year for this moth, which can occur in large numbers. Well distributed throughout the county.
- 2375 **Large Wainscot** At light, Clifton, by A.R. Outen on 11th October 1985. An uncommon and local moth.
- 2381 **The Uncertain** A common moth found throughout the county.
- 2389 **Pale Mottled Willow** 1985 was a good year for this species.
- 2449 **Dark Spectacle** A moth that has not been recorded in the county for the last ten years, when it was taken by I. Woiwod at St. Neots Road, Sandy. Possibly still with us at a low density.

ACKNOWLEDGEMENTS

My sincere thanks go to the following for help and assistance:

C. Baker, J.B. Barnwell, Mr and Mrs E.G. Bowskill, G. Castle, R. Collings, G.Dawes, L. Field, D. Green, J.Green, G. Higgs, T.S. Hollingworth, B.M. Inns, Hon. H. de B. Lawson Johnston, D.V. Manning, A.J. Martin, A.R. Outen, D. Parsons, R. Passley, R.C. Revels, A. Riley, A. Smith, B.R. Squires, R.B. Stephenson, Mrs J. Walford, H. Winter, I. Woiwod and Mr and Mrs Young of Luton Hoo Estates.

BUTTERFLIES (Lepidoptera)

Report of the Recorder

Looking through my diary of sightings and weather observations for 1985 makes very dull reading. There seem to be far too many entries stating that it was either raining or dull or the wind was northerly or a combination of all three!

The first butterfly entry was a sighting of Red Admiral by Vic Arnold early in March during a short fine spell, but the weather closed in again until the end of that month. The next mild spell with southerly winds did manage to bring in a few Painted Ladies to the county by the middle of April and they were soon seen with Small Tortoiseshell and Peacocks but once more this situation was not to last. It was not until mid-May that many more butterflies were seen with Small Whites and Small Tortoiseshell flying with some early Orange Tip males. All seemed set for an interesting year, but then the weather settled into a pattern of rain, sun, and more rain.

The pattern seemed to favour the insects more than the recorders but even so large numbers of Holly Blue, Green Hairstreak and Dingy Skipper were seen. Many observers noted that this weather pattern appeared to prolong the flying season of many of the species, with the easily

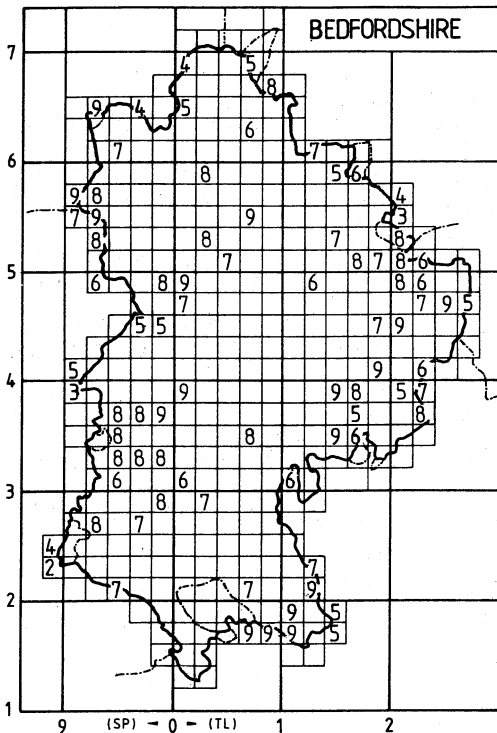
recognised Orange Tip on the wing for 6 to 7 weeks instead of a more normal 5 week season. A bilateral gynandromorph variety of this species (half male, half female) was seen at Colmworth House by Mr Warburton on 7th June. This is indeed a rare sight but unfortunately it got away before anyone else had the pleasure of seeing it.

July continued to be dull and wet but on the few finer days many Wall Brown, Peacock and Meadow Brown were seen trying to make the most of the short respite to continue their existence.

The lack of opportunity to carry out field work was reported by practically everyone who sent in records and while the number of contributors remained high the actual number of sightings reported was very low compared to a normal year. Nevertheless there were a few silver linings to this otherwise dull year.

Sightings of White Letter Hairstreak were higher than usual and resulted in site records from at least two new spots. This endangered species seems to have halted its decline and could even be on the increase. The Black Hairstreak had a good season in its newly discovered site but does not appear to have spread to other areas as yet, but on the 12 July Mark Bates reported seeing many Dark Green.

Fritillaries flying over Noon Hill. This must be the best news of the year as much conservation work has been carried out there and if these are the rewards then they are very high indeed. It is obvious that the butterfly has not just turned up as a result of the scrub clearance but, due to this activity, interest in the site has been regenerated and this new site for this species is the result. This species used to be our rarest butterfly but as this is the third site from which it is



Tetrads with less than 10 species recorded — as at 31.12.85.

recorded it must now leave the top of that list and be replaced by the Black Hairstreak with only one site to its credit.

It would be true to say that 1985 is best forgotten as a serious census year for the Bedfordshire Butterfly survey and as if to emphasise the whole disaster I noted a Small White attempting to pupate on the glass of my front door on Christmas Day. Unfortunately it never completed the operation as it fell prey to a sharp eyed Blue Tit later in the day.

Once more my thanks must go to the 31 people who sent me records and to say please do not be too despondent with 1985. Next year has got to be better — it could not be worse.

ALAN MARTIN

GRASSHOPPERS AND CRICKETS (Orthoptera/Saltatoria)

Report of the Recorder

1985 has produced a slight increase in records over last year, but only for the commoner species.

An Oak Bush-cricket was found on an apricot tree by Richard Revels. This was a new tetrad record (TL24 B) and also a first for this species of tree. Barry Stephenson found an Oak Bush-cricket on his kitchen window on the 21st November at about 8.00a.m. This is a very late record especially as we were having a cold spell of weather. The previous published late record was 20th October 1977 at Toddington.

A Lesser Marsh Grasshopper found at Sharnbrook Mill (TL05 E) had a green body and brown wings. In Bedfordshire this is unusual as there is little colour variation. Specimens are usually of the brown form.

Grasshopper nymphs, or instars, are difficult to identify to species but Vic Arnold saw some on the 16th May. The previously published first date was 24th May 1981.

The following records are additions this year to the maps published in the Journal for 1977 (*Bedf. Nat.* 32 25-30).

Oak Bush-cricket *Meconema thalassinum* — SP92L, SP92Q, TL24B

Speckled Bush-cricket *Leptophyes punctatissima* — SP92G

Dark Bush-cricket *Pholidoptera griseoaptera* — SP95H, SP95I

Common Field Grasshopper *Chorthippus brunneus* — SP92B, SP95N, SP95Q, TL13M

Meadow Grasshopper *Chorthippus parallelus* — SP92C, SP93F, SP95I, SP95N

Lesser Marsh Grasshopper *Chorthippus albomarginatus* — SP95S, SP95X, TL05E.

CORRECTION

In my report last year the captions on the two photographs need reversing to be correct.

ACKNOWLEDGEMENTS

I would like to thank V. Arnold, Mrs B. Rands, R. Revels and B. Stephenson for their records.

D.G. RANDS

WOODLICE, CENTIPEDES AND MILLIPEDES (Isopoda, Chilopoda and Diplopoda)

Report of the Recorder

Although very little recording of these groups was carried out during 1985, two records obtained during a visit to the Woburn Park Garden Centre (SP958334) on 2nd November are worth noting. The first is of five females of the centipede *Clinopodes linearis* which were found under black polythene pots resting on gravel. This represents a new vice-county record for this rare species and now leaves only three species of centipede likely to be added to the county list (see Rundle, 1985). The other record is of several specimens of the millipede *Cylindroiulus nitidus* found in the same habitat as the above as well as one specimen from within a heated plant house. This is the second record of the species for Bedfordshire.

The Recorder would like to thank the staff of the Woburn Park Garden Centre for permission to collect. Thanks also go to Mr D.G. and Mrs E.B. Rands and Mr D.W. Guntrip who helped with the fieldwork.

REFERENCE

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A.J. RUNDLE

A RECORD OF *METOECUS PARADOXUS* (L.) FOR BEDFORDSHIRE

by V.W. Arnold

On the 22nd October, 1985, a search was being made for leaf mining micro lepidoptera at the old disused railway track at East Hyde. D. V. Manning, T.S. Hollingworth and I were searching the foliage of birch trees, when I found an insect that none of us were familiar with.

A visit was made to Rothamsted Experimental Station at Harpenden where the specimen was identified as a female beetle of the genus *Metoecus*. This beetle is sometimes referred to as the Wasp's-nest Beetle, after its habit of living as a parasite in the underground nests of the Common Wasp *Vespula vulgaris*.

According to Dr B. Nau, this beetle was last recorded from the county at Leighton Buzzard, in 1905. It is interesting to note that the last Hertfordshire record for this species was in 1924, by B.S. Williams, at Harpenden.

The specimen has been presented to Dr B. Nau for his collection of Bedfordshire Coleoptera.

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CHECKLIST OF BEDFORDSHIRE COLEOPTERA

(4) CERAMBYCIDAE TO SCOLYTIDAE

by B.S. Nau

ABBREVIATIONS

Br — Brown	G — Gimmingham	EBR — Rands
RB — Brind	J — Jarvis	R — Roche
Cr — Crawshay	L&V Laurence & Verdcourt	V — VCH (Fowler)
D — Day	M67, etc — Morris	V82 — Verdcourt
	N — Nau	

The numerical subscripts denote the year of publication where this is necessary for clarity. The reference may be found in *A checklist and bibliography of Coleoptera in Bedfordshire*, by B.S. Nau published in the Journal for 1982, (*Bedf. Nat.* 37 50-54).

This part completes the main list. The final part, next year, is intended to include additional references, addenda and errata.

NUMBER OF SPECIES

Chrysomeloidea:		Curculionoidea:	
Cerambycidae	28	Anthribidae	2
Bruchidae	5	Attelabidae	8
Chrysomelidae	111	Apionidae	42
		Curculionidae	138
		Scolytidae	11
		TOTAL	345

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CHRYSOMELOIDEA

CERAMBYCIDAE

Arhopalus rusticus(L.)	N	S.melanura(L.)	J, L&V, J50, V52, N
Asemum striatum(L.)	V, V52	S.quadrifasciata(L.)	L&V
Tetropium gabrieli Weise	Cr, D, N	Molorchus minor(L.)	R, V52
Rhagium bifasciatum Fabricius	V, V52, L&V	Aromia moschata(L.)	J44a, V45, V52
R.inquisitor(L.)	V	Phymatodes alni(L.)	J50, V52
R.mordax(Degeer)	V52	P.testaceus(L.)	R44, V52
Stenochorus meridianus(L.)	V, D, L&V, V52, N	Clytus arietus(L.)	V, L&V, V52, N
Grammoptera ruficornis(Fabricius)	V, D, V52, N	Anaglyptus mysticus(L.)	J, V52, N
Alosterna tabacicolor(Degeer)	D, V52	Pogonocherus hispidulus(P&M)	N
Leptura livida Fabricius	L&V, J50, V52	P.hispidus(L.)	N
Strangalia aurentata(Fabricius)	N	Leiopus nebulosus(L.)	L&V, J50, V52, N
S.maculata(Poda)	V, L&V, V52	Agapanthia villosoviridescens(D)	R43, J44, V49, V52, N
		Saperda carcharias(L.)	R44
		S.populnea(L.)	L&V, J50
		Phytoecia cylindrica(L.)	R43, J44
		Tetrops praeusta(L.)	D

BRUCHIDAE

<i>Bruchus rufimanus</i> Boheman	V, D, V52, N	<i>G. viridula</i> (Degeer)	R44, V52, N, Br	<i>A. nonstriata</i> (Goeze)	J50
<i>B. rufipes</i> Herbst	J, V52	<i>Phaedon armoraciae</i> (L.)	V, V52, N	<i>Longitarsus jacobaeae</i> (Waterhouse)	N
<i>Bruchidius ater</i> (Marsham)	V52	<i>P. cochleariae</i> (Fabricius)	V	<i>L. luridus</i> (Scopoli)	R44
<i>B. cistii</i> (Fabricius)	R44	<i>P. tumidulus</i> (Germar)	V, N	<i>L. melanocephalus</i> (Degeer)	V
<i>Callosobruchus chinensis</i> (L.)	V	<i>Hydrothassa glabra</i> (Herbst)	J50, V52	<i>L. oblitteratus</i> (Rosenhauer)	R
		<i>H. marginella</i> (L.)	V, B	<i>L. ochroleucus</i> (Marsham)	R
CHRYSOMELIDAE		<i>Prasocuris juncki</i> (Brahm)	J	<i>Altica lythri</i> Aube	R44, V52, N
<i>Donacia clavipes</i> Fabricius	J	<i>P. phellandrii</i> (L.)	V	<i>A. oleracea</i> (L.)	V, V52, N, Br
<i>D. impressa</i> Paykull	V, J50	<i>Plagiodera versicolora</i> (Laicharting)	J50, V52	<i>A. palustris</i> Weise	J50, V52
<i>D. semicuprea</i> Fabricius	V, D, Br	<i>Chrysomela populi</i> L.	J50, V52	<i>A. pusilla</i> Duftschmid	R44, V52
<i>D. simplex</i> Fabricius	V, V52	<i>C. tremula</i> Fabricius	J50, V52	<i>Hermaphysa mercurialis</i> (Fabricius)	J, N
<i>D. versicoloreae</i> (Brahm)	J50	<i>Phytodecta decemnotata</i> (Marsham)	V52	<i>Batophila rubi</i> (Paykull)	R
<i>D. vulgaris</i> Zschach	J50, V52	<i>P. olivacea</i> (Forster)	V, V52, N	<i>Lythraia salicariae</i> (Paykull)	Br
<i>Plateumaris affinis</i> (Kunze)	J, V52	<i>P. viminalis</i> (L.)	J	<i>Ochrosia ventralis</i> (Illiger)	N
<i>P. braccata</i> (Scopoli)	J	<i>Phyllodecta laticollis</i> Suffrian	J50, N	<i>Crepidodera ferruginea</i> (Scopoli)	V, V52
<i>P. sericea</i> (L.)	V, D, N	<i>P. vitellinae</i> (L.)	V, V52	<i>C. transversa</i> (Marsham)	V, N
<i>Orsodacne lineola</i> (Panzer)	J	<i>P. vulgatissima</i> (L.)	N	<i>Derocrepis rufipes</i> (L.)	R
<i>Zeugophora subspinosa</i> (Fabricius)	J50, N	<i>Galerucella californiensis</i> (L.)	N	<i>Hippuriphila modeeri</i> (L.)	Br
<i>Lema cyanella</i> (L.)	R44, V52	<i>G. grisescens</i> (Joannis)	V52, N	<i>Chalcoides aurata</i> (Marsham)	V
<i>Oulema lichenis</i> Voet	V, V52	<i>G. lineola</i> (Fabricius)	R, V52, N	<i>C. aurea</i> (Fourcroy)	R, J, V52, N
<i>O. melanopa</i> (L.)	J, V52, N, Br	<i>G. sagittariae</i> (Gyllenhal)	J50	<i>C. fulvicornis</i> (Fabricius)	J50, V52, N
<i>Crioceris asparagi</i> (L.)	V, N	<i>G. tenella</i> (L.)	V	<i>C. nitidula</i> (L.)	V52
<i>Clytra quadripunctata</i> (L.)	J50	<i>Galeruca tanacetii</i> (L.)	N	<i>C. plutus</i> (Latreille)	R44
<i>Cryptcephalus aureolus</i> Suffrian	V, V52, N	<i>Lochmea capraea</i> (L.)	V	<i>Podagrica fuscicornis</i> (L.)	J
<i>C. frontalis</i> Marsham	D	<i>L. crataegi</i> (Forster)	J, N	<i>Mantura matthewsi</i> (Curtis)	R
<i>C. fulvus</i> Goeze	J, V52	<i>L. suturalis</i> (Thomson)	V, N	<i>M. rustica</i> (L.)	R
<i>C. labiatus</i> (L.)	V, V52	<i>Luperus flavipes</i> (L.)	J50, V52, N	<i>Chaetocnema concinna</i> (Marsham)	V, V52, N
<i>C. pusillus</i> Fabricius	J50, V52	<i>L. longicornis</i> (Fabricius)	V	<i>C. hortensis</i> (Fourcroy)	R
<i>Timarcha goettingensis</i> (L.)	V52, Br	<i>Sermylissa halensis</i> (L.)	R, V52, Br	<i>Sphaeroderma rubidum</i> (Graells)	J, N
<i>T. tenebricosa</i> (Fabricius)	V52, N, Br	<i>Phyllotreta atra</i> (Fabricius)	R44, V52	<i>S. testaceum</i> (Fabricius)	V
<i>Leptinotarsa decemlineata</i> Say	G48	<i>P. cruciferae</i> (Goeze)	R	<i>Apteropoda orbiculata</i> (Marsham)	R
<i>Chrysolina oricalcia</i> (Muller)	D	<i>P. exclamatoris</i> (Thunberg)	V	<i>Psylliodes affinis</i> (Paykull)	J, N
<i>C. polita</i> (L.)	V, V52, N	<i>P. nemorum</i> (L.)	V, V52	<i>P. chrysocephala</i> (L.)	V, N
<i>C. sanguinolenta</i> (L.)	R44, V52	<i>P. nodicornis</i> (Marsham)	R44, V52, N	<i>P. cuprea</i> (Koch)	R
<i>C. staphylea</i> (L.)	V, V52, N	<i>P. ochripes</i> (Curtis)	J	<i>P. nappi</i> (Fabricius)	J50
<i>C. varians</i> (Schaller)	J50	<i>P. undulata</i> Kutschera	V, N	<i>P. picina</i> (Marsham)	R44
<i>C. violacea</i> (Muller)	N	<i>P. vittula</i> Redtenbacher	V52	<i>Cassida flaveola</i> Thunberg	V
<i>Gastrophysa polygoni</i> (L.)	V, V52, Br	<i>Aphthona euphorbiae</i> (Schrank)	J	<i>C. nobilis</i> L.	N
		<i>A. melancholica</i> Weise	J50, N	<i>C. rubiginosa</i> Muller	J, V52, N

<i>C.vibex</i> L.	J,V52,N	<i>A.hookeri</i> Kirby	D,V52	<i>Trachyphloeus alternans</i> Gyllenhal	R
<i>C.viridis</i> L.	V,V52	<i>A.ebeninum</i> Kirby	R	<i>T.aristatus</i> (Gyllenhal)	R
		<i>A.striatum</i> (Marsham)	R	<i>T.asperatus</i> Boheman	R
		<i>A.aethiops</i> Herbst	V,D	<i>T.spinimanus</i> Germar	R
		<i>A.pisi</i> (Fabricius)	R	<i>Phyllobius argentatus</i> (L.)	V,V52
		<i>A.loti</i> Kirby	M67	<i>P.calcaratus</i> (Fabricius)	Br
		<i>A.meliloti</i> Kirby	J50,V52	<i>P.maculicornis</i> Germar	V,V52
		<i>A.ononis</i> Kirby	R	<i>P.oblongus</i> (L.)	V,V52,Br
		<i>A.platalea</i> Germar	R	<i>P.pomaceus</i> Gyllenhal	V,V52
		<i>A.reflexus</i> Gyllenhal	R,V52	<i>P.pyri</i> (L.)	V,V52,N
		<i>A.tenuis</i> Kirby	R	<i>P.roboretanus</i> Gredler	V52
		<i>A.viciae</i> (Paykull)	V,V52	<i>P.viridiaeris</i> (Laicharting)	V,R,V52,Br
		<i>A.virens</i> Herbst	V	<i>P.viridicollis</i> (Fabricius)	R
		<i>A.vorax</i> Herbst	V,D,R,V52	<i>Polydrusus cervinus</i> (L.)	V
		<i>A.waltoni</i> Stephens	R	<i>P.pterygomalis</i> Boheman	J50
		<i>A.craccae</i> (L.)	R,V52	<i>P.undatus</i> (Fabricius)	V,V52
		<i>A.pomonae</i> (Fabricius)	V,D,V52	<i>Barypeithes araneiformis</i> (Schrank)	V
		<i>A.subulatum</i> Kirby	D	<i>B.pellucidus</i> (Boheman)	J50,N
		<i>A.apricans</i> Herbst	V	<i>Sciaphilus asperatus</i> (Bonsdorff)	V,V52
		<i>A.assimile</i> Kirby	J50,V52	<i>Brachyomus echinatus</i> (Bonsdorff)	R
		<i>A.dichroum</i> Bedel	R,V52	<i>Strophosomus capitatus</i> (Degeer)	V,V52
		<i>A.dissimile</i> Germar	V52	<i>S.faber</i> (Herbst)	R,V52
		<i>A.filirostre</i> Kirby	R	<i>S.melanogrammus</i> (Forster)	V,V52
		<i>A.nigritarse</i> Kirby	J50,V52	<i>S.sus</i> Stephens	V,V52
		<i>A.ononicola</i> Bach	R44	<i>Cneorhinus plumbeus</i> (Marsham)	J50
		<i>A.trifolii</i> (L.)	R,Br	<i>Liophloeus tessulatus</i> (Muller)	D
		<i>A.varipes</i> Germar	Br	<i>Barynotus moerens</i> (Fabricius)	R,V52
		<i>Nanophyes marmoratus</i> (Goeze)	J50	<i>B.obscurus</i> (Fabricius)	V
				<i>Tropiphorus elevatus</i> (Herbst)	J50,V52
		CURCULIONIDAE		<i>Tanymecus palliatus</i> (Fabricius)	J50
		<i>Otiorynchus clavipes</i> (Bonsdorff)	V52,N	<i>Sitona griseus</i> (Fabricius)	V
		<i>O.ligneus</i> (Olivier)	V	<i>S.hispidulus</i> (Fabricius)	R,V52
		<i>O.ovatus</i> (L.)	J50,V52	<i>S.humeralis</i> Stephens	V,V52
		<i>O.raucus</i> (Fabricius)	R	<i>S.lepidus</i> Gyllenhal	J50,V52
		<i>O.rugostriatus</i> (Goeze)	J50	<i>S.lineatus</i> (L.)	V,V52
		<i>O.scaber</i> (L.)	J50,V52	<i>S.macularius</i> (Marsham)	R
		<i>O.singularis</i> (L.)	V,V52		
		<i>O.sulcatus</i> (Fabricius)	V,N		
CURCULIONOIDEA					
ANTHRIBIDAE					
<i>Anthrribus resinosus</i> (Scopoli)	EBR				
<i>Brachytarsus fasciatus</i> (Forster)	J				
ATTELABIDAE					
<i>Attelabus nitens</i> (Scopoli)	V,V52				
<i>Apoderus coryli</i> (L.)	V,V52				
<i>Rhynchites aequatus</i> (L.)	D,R,V52,N				
<i>R.caeruleus</i> (Degeer)	Br				
<i>R.germanicus</i> Herbst	V,D				
<i>R.nanus</i> (Paykull)	J50,V52				
<i>Byctiscus betulae</i> (L.)	V52				
<i>Deporaus betulae</i> (L.)	V,Br				
APIONIDAE					
<i>Apion hydrolapathi</i> (Marsham)	V,D				
<i>A.violaceum</i> Kirby	V				
<i>A.aeneum</i> (Fabricius)	V				
<i>A.radiolus</i> (Marsham)	D				
<i>A.urticarium</i> (Herbst)	J50,V52				
<i>A.ulicis</i> (Forster)	R,N				
<i>A.cruentum</i> Walton	R				
<i>A.fruentarium</i> (Paykull)	V,J50,V52,N				
<i>A.miniatum</i> Germar	V,D,V52				
<i>A.rubens</i> Stephens	V52				
<i>A.atomarium</i> Kirby	R				
<i>A.seniculus</i> Kirby	R44				
<i>A.carduorum</i>	V				
<i>A.onopordi</i> Kirby	D,R,V52				

Hypera arator(L.) R44,N
 H.fuscocinerea(Marsham) R
 H.nigrirostris(Fabricius) V,V52,N
 H.plantaginis(Degeer) R44
 H.postica(Gyllenhal) R,V52
 H.punctata(Fabricius) R
 H.rumicis(L.) V,V52
 H.venusta(Fabricius) R44
 Cionus alauda(Herbst) V,V52,N
 C.hortulanus(Fourcroy) J,V52,N
 C.scrophulariae(L.) R44,N
 Cleopus pulchellus(Herbst) J,V52
 Alophus triguttatus(Fabricius) R
 Hylobius abietus(L.) J50,N
 Leiosoma deflexum(Panzer) V
 Pissodes castaneus(Degeer) J50
 Magdalis armigera(Fourcroy) D,R44
 M.barbicornis(Latreille) J50
 M.carbonaria(L.) J50,V52
 M.cerasi(L.) J50,V52
 M.ruficornis(L.) V,D
 Anoplus plantaris(Naezin) V
 Euophryum confine(Broun) J50
 Pentarthrum huttoni Wollaston N
 Cossonus parallelipedus(Herbst) D,R,B-
 Rhyncoelus lignarius(Marsham) D
 Sitophilus granarius(L.) V
 Cryptorhynchus lapathi(L.) J
 Bagous cylindrus(Paykull) V
 Dorytomus dejeani Faust N
 D.longimanus(Forster) V,D
 D.taeniatus(Fabricius) V,V52
 D.tortrix(L.) J50,V52
 D.tremulae(Fabricius) J
 Notaris acridulus(L.) V
 Thyrogene festucae(Herbst) J50
 Grypus equestris(Fabricius) V,V52
 Orthochaetes setiger(Beck) R
 Coeliodes dryados(Gmelin) J50,V52

C.rubicundus(Herbst) V,V52
 Stenocarus umbrinus(Gyllenhal) R
 Cidnorhinus quadrimaculatus(L.) V,V52
 Ceuthorrhynchidius troglodytes(Fabricius) V,V52
 Ceuthorrhynchus assimilis(Paykull) V
 C.cochleariae(Gyllenhal) R
 C.contractus(Marsham) V
 C.erysimi(Fabricius) R44
 C.floralis(Paykull) V
 C.litura(Fabricius) V,V52
 C.marginatus(Paykull) V
 C.pictitarsus Gyllenhal D
 C.pleurostigma(Marsham) V52
 C.pollinarius(Forster) V,V52,B-
 C.pyrrhorhynchus(Marsham) N
 C.quadridentis(Panzer) V,RB
 C.timidus Weise R
 C.trimaculatus(Fabricius) R
 C.turbatus(Fabricius) M82
 Rhinoncus castor(Fabricius) N
 R.inconspicuus(Herbst) R
 R.pericarpus(L.) V
 Phytobius quadrituberculatus(Fabricius) R
 Amalus scortillum(Herbst) J
 Amalorrhynchus melanarius(Stephens) V
 Poophagus sisymbrii(Fabricius) V,N
 Orobitis cyaneus(L.) J
 Baris picicornis(Marsham) J
 Anthonomus pedicularius(L.) R
 A.pomorum(L.) V
 A.rubi(Herbst) R,V52
 A.ulmi(Degeer) V,D
 Curculio glandium Marsham N
 C.nucum L. R44,V52
 C.pyrrhoceras Marsham R
 C.rubidus(Gyllenhal) V52
 C.salicivorus Paykull R
 C.venosus(Gravenhorst) R,V52,N
 C.villosus Fabricius J50

Tychius schneideri(Herbst) J
 Miccotrogus picirostris(Fabricius) V,D
 Miarus campanulae(L.) R,M67
 M.graminis(Gyllenhal) R
 M.plantarum(Germar) J
 Mecinus pyraeter(Herbst) R
 Gymnetron antirrhini(Paykull) R44
 G.labile(Herbst) D
 G.pascuorum(Gyllenhal) V,D
 Rhynchaenus alni(L.) V,D,V52,B,N
 R.fagi(L.) N
 R.pratensis(Germar) D,R
 R.quercus(L.) V,B,N
 R.rusci(Herbst) V
 R.salicis(L.) V,V52
 Ramphus pulicarius(Herbst) R,V52

SCOLYTIDAE

Scolytus multistriatus(Marsham) V,N
 S.scolytus(Fabricius) V,V52,N
 Hylesinus crenatus(Fabricius) J50
 H.oleiperda(Fabricius) R44
 Leperisimus varius(Fabricius) J,V52
 Acrantus vittatus(Fabricius) R
 Hylastes angustatus(Herbst) J50
 H.ater(Fabricius) V,V52,N
 H.opacus(Erichson) J50
 Tomicus piniperda(L.) V
 Dryocoetinus villosus(Fabricius) V,V52

A PROVISIONAL SURVEY OF BEDFORDSHIRE DANDELIONS

(Genus *Taraxacum*, Family COMPOSITAE)

By A.J. Rundle⁽¹⁾ and C.M. Dony⁽²⁾

Although dandelions are very common and can be found almost everywhere they are a difficult group to study. Firstly most, if not all, British species are apomictic (i.e. they produce fertile fruit without pollination) and as is typical of such plants there are many groups of closely similar species. Another difficulty is that their leaves vary in shape depending upon the season in which they are produced, usually being relatively intricate in the winter and spring but becoming simpler and less divided in the summer, although sometimes the reverse may be true. It is the winter/spring leaf shape that is used for identification and as this coincides in part with the main period of flowering collecting has to be limited to a short period in spring (mostly April and May, but in mild years may include part of March). Material has to be carefully selected in the field and shaded, over-exposed, trampled and grazed plants are generally best ignored. Finally, material has to be pressed with care so as to display all the features necessary for identification and dried quickly in order to preserve all important colour. With all these problems it is hardly surprising that dandelions remain an understudied group although the authors must admit that they find them an intriguing and attractive subject for study.

Despite the fact that dandelions have been studied intensely in Scandinavia for much of this century they have been much neglected in this country. There was a certain amount of interest in the genus between 1920 and 1934 when the Swedish taraxacologist H. Dahlstedt published a series of communications in the Reports of the Botanical Exchange Club of the British Isles, mostly under the umbrella of "Plant Notes". Here he described 52 new species based on British material supplied to him by G.C. Druce and H.H. Johnston. At the same time material supplied from Orkney and the Shetlands by Johnston formed the basis for descriptions of 8 species by Dahlstedt and were published in the Transactions of the Botanical Society of Edinburgh or in Johnston's private publications. After Dahlstedt's death in 1934 there followed a long period of neglect which was eventually broken in 1972 by the publication of Richards' *Taraxacum* Flora. This marked a major advance and forms the base-line for current research. Richards listed 132 species (8 of which were new) and summarised the vice-county distribution of each. This publication rekindled an interest in the genus which continues to grow. Twenty-one new species have been added since 1972: Richards (1981) described 11 species, Sahlin (1983) 1 species and Richards and Haworth (1984) 9 species. In addition to these new species many previously described continental species have also been recorded from the British Isles. As is to be expected in an underworked group such as this some previously recorded species have had to be deleted for various reasons. In this case these are generally either erroneously recorded foreign species or species whose type specimens are now considered to be inadequate for species recognition. Bearing in mind these adjustments the total for Britain and Ireland now stands at 244 species according to Haworth & Rundle (1986 MS.).

Very little has been written about Bedfordshire dandelions. Dahlstedt (1929) described two new species based on Bedfordshire specimens collected and sent to him by G.C. Druce: *T. argutum* from Heath and *T. glauciniforme* also from Heath as well as from Brickhill, Bucks. Dahlstedt (1930) also recorded *T. glaucinum* based on another Druce specimen from Heath and Reach. In 1932 Dahlstedt described *T. pannulatiforme*, *T. recurvilobum* and *T. tanyphyllum* as new. These were based in part on material collected from the lawn of the Bedfordshire botanist E. Macalister Hall at Clifton and was sent to Dahlstedt by Druce. Little (1936) recorded the very rare *T. palustre* from Southill, a record which was referred to by Dony (1953) who added two new localities ('Cow Common', Totternhoe and 'Cainhoe', Clophill). Two plants collected by Dony from the former in 1946 and housed in the Luton Museum Herbarium (specimen no. 423) are certainly of this species. *T. raunkiaeri* and *T. duplidentifrons* were added to the list (Anonymous, 1938) based on material identified by another Swedish taraxacologist G.E. Haglund and were collected by E.M. Macalister Hall from "Herts: Dunstable" — certainly from within the present administrative county of

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Bedfordshire, although the vice-county must remain in doubt. Richards (1972) refers to seven species as occurring in vice-county 30 (Bedford): he repeats *T. argutum* and *T. glauciniforme*; refers to *T. palustre* as presumed extinct; and adds *T. fulviforme*, *T. oxoniense*, *T. lingulatum* and *T. porrectidens*. Pankhurst & Richards (1981 MS.) in their unpublished "Polyclave for *Taraxacum* in Great Britain" list twelve species for the vice-county; in addition to the seven species listed by Richards above and repeating the records for *T. tanyphyllum* and *T. raunkiaeri* they add the following: *T. cyanolepis*, *T. hamatiforme* and *T. hamiferum*. According to Haworth & Rundle (1986 MS.) three of these previously recorded species should be deleted from the list. The type specimen of *T. recurvilobum* is now considered to be unidentifiable, *T. porrectidens* is considered to be based on useless summer material and *T. duplidentifrons* is considered to be synonymous with *T. raunkiaeri*.

Thus, excluding species or records no longer recognised as valid, only thirteen species had been recorded for the county at the beginning of our survey.

This paper gives the results of fieldwork carried out in the county between 1981 and 1985 by the authors and also includes records obtained by Mrs M. V. Marsden in 1981 and Mrs E. B. Rands in 1984. All records given here are based on herbarium specimens which have been identified or verified by C. C. Haworth (the national referee for the genus for the Botanical Society of the British Isles) and in many cases also by A. J. Richards. Some particularly puzzling specimens have been submitted to Hans Øllgaard in Denmark. Only those records which are considered to be reliable are included and all specimens of doubtful identity or which have yet to be satisfactorily identified have been excluded. Also excluded are records of three as yet undescribed species. Even with these fairly considerable omissions we are still able to list 65 species here. Four previously recorded species have yet to be refound: *T. cyanolepis*, *T. glaucinum*, *T. pannulatiforme* and *T. tanyphyllum*, although the first of these has been found about 100 yards outside the boundary!

The list presented below follows the order of species given in Haworth & Rundle (1986 MS.) which includes the new sectional classification of Richards (1985). Brief comments are given as to their habitat preferences in the county, when known, and any other points of interest. 10 km. square records are given and these are backed up by reference to catalogue numbers of herbarium specimens (when more than one specimen exists for a square only that of the most typical specimen is given). Numbers of the form "T0157" were mostly collected by A. J. R. and are in the author's possession, numbers of the form "18/82" were collected by C. M. D. and are to be deposited in the Herbarium of the Luton Museum and number "MM21/82" was collected by Mrs Marsden and is in her own herbarium. Finally, the number of tetrads (2 km. x 2 km. squares) for each species is also given although it must be admitted that such a labour intensive group as this hardly lends itself to serious tetrad bashing!

Section ERYTHROSPERMA

- T. argutum* Dahlstedt, 1929 Species originally described from Bedfordshire material. Our two records come from wooded Chalk downland on Sharpenhoe Clappers and fairly short open grassland next to footpath near Sandy Lodge. (2 tetrads).
TL03 (60/82); TL14 (T0157).
- T. brachyglossum* (Dahlstedt, 1905) Raunkiaer, 1906 A common species occurring on roadside verges and open grassland, especially where sandy. (6 tetrads).
SP96 (18/82); TL03 (31/84); TL14 (T0007); TL24 (T0161).
- T. canulum* Haglund, 1940 On sandy roadside verge near Steppingley and by side of sandy track leading to Sandy Lodge. (2 tetrads).
TL03 (T0311); TL14 (76/82).
- T. fulviforme* Dahlstedt, 1923 Originally recorded in Richards (1972). We have only one definite site to date — on a sandy roadside verge near Woburn. (1 tetrad).
SP93 (T0362).
- T. glauciniforme* Dahlstedt, 1929 (Fig. 1) Species originally described partly from Bedfordshire material. We have one record from a sandy roadside verge and three from gardens. (3 tetrads).
SP93 (49/85); TL02 (T0411); TL03 (T0314).
- T. lacistophyllum* (Dahlstedt, 1905) Raunkiaer, 1906 Our third most common dandelion, although it has probably been more selectively collected than most other species due to its

distinctive and attractive leaves (Fig. 2). Found on roadside verges and open grassland, especially where sandy. (12 tetrads).
 SP92 (T0201); SP93 (81/82); SP95 (23/85); TL02 (30/82); TL03 (T0303); TL05 (20/85);
 TL14 (T0158); TL15 (T0183).

T. oxoniense Dahlstedt, 1923 Originally recorded in Richards (1972). Another common species; occurring mostly on open calcareous grassland, especially Chalk downland. (9 tetrads).
 SP95 (22/85); TL02 (9/85); TL03 (T0316); TL13 (118/83); TL14 (39/84).

T. proximum (Dahlstedt, 1905) Raunkiaer, 1906 One record from a sandy roadside verge near Steppingley. (1 tetrad).
 TL03 (T0317).

T. rubicundum (Dahlstedt, 1905) Dahlstedt, 1906 On Chalk downland, Sharpenhoe. (1 tetrad).
 TL02 (54/84).

T. simile Raunkiaer, 1906 On sandy roadside bank, Pinfold. (1 tetrad).
 SP93 (51/85).

Section PALUSTRIA

T. palustre (Lyons, 1763) Symons, 1798 Several plants in damp meadow at Sewell, adjacent to that in which it was found in 1946 by J.G. Dony (see above). (1 tetrad).
 SP92 (12/86).

T. anglicum Dahlstedt, 1920 In damp pastures next to the River Great Ouse, Bedford. (2 tetrads).
 TL04 (10/84); TL05 (26/85).

Section NAEVOSA

T. euryphyllum (Dahlstedt, 1911) M.P. Christiansen, 1934 Dandelions in this section characteristically have hairy leaves with a spotted upper surface (Fig. 3). Mostly in old natural

Figure 1

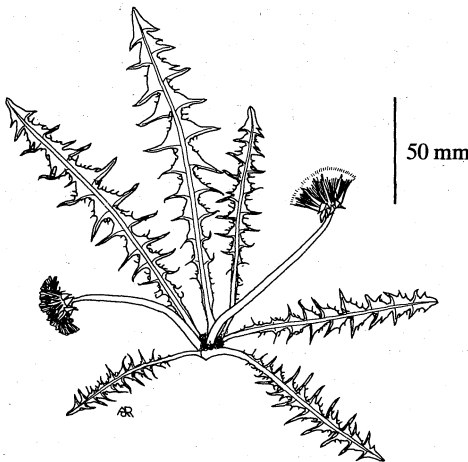


Figure 2

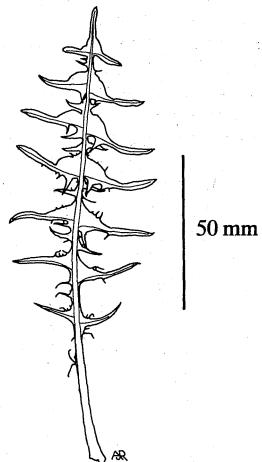


Figure 1. *T. glauciniforme*. Sandy roadside verge next to pine plantation, 3/4 mile S.S.W. of Steppingley (TL005341). 12.5.1984. Specimen no. T0314.

Figure 2. *T. lacustrophyllum*. Leaf of plant from sandy roadside (A418) bank, just N.E. of Fox Corner, just N. of Heath and Reach (SP928291). 20.4.1984. Specimen no. T0201.

meadows, but also found on two roadside verges and in one marsh. (6 tetrads).
SP92 (T0438); SP93 (52/85); TL02 (T0282); TL03 (T0320).

Section **CELTICA**

- T. adamii* Claire, 1891 Two records from old meadows and two from churchyards. (4 tetrads).
SP92 (5/82); TL03 (T0290); TL14 (T0168); TL24 (T0162).
- T. haemata* Haglund, 1937 In damp pastures. (3 tetrads).
TL02 (19/84); TL05 (48/84); TL15 (13/84).
- T. nordstedtii* Dahlstedt, 1911 Mostly in damp pastures grazed by cattle. (5 tetrads).
SP91 (23/84); SP92 (T0430); TL02 (53/84); TL03 (127/83).
- T. raunkiaeri* Wiinstedt, 1934 Originally recorded in 1938. Occurs on roadside verges and in old pastures. (5 tetrads).
SP95 (3/85); SP96 (17/82); TL03 (T0302); TL04 (11/84).
- T. subbracteatum* A.J. Richards, 1984 Most records from old meadows and open grassland with only one from a roadside verge. (7 tetrads).
SP92 (T0434); SP93 (106/83); TL02 (23/82); TL03 (T0135); TL14 (T0009).
- T. tamesense* A.J. Richards, 1972 In damp grazed pasture, Bedford. (1 tetrad).
TL05 (51/84).

Section **HAMATA**

- T. alienum* Dahlstedt, 1927 On sandy roadside verge just N. of Sandy Warren. (1 tetrad).
TL14 (T0160).
- T. atactum* Sahlén & van Soest, 1970 One record from a damp pasture and two from roadside verges. (3 tetrads).
SP92 (95/83); SP93 (T0205).
- T. boeckmanii* Borgvall, 1959 Mostly from roadside verges. (6 tetrads).
TL02 (30/84); TL03 (40/84); TL04 (122/83); TL11 (T0152); TL14 (T0278); TL15 (24/85).
- T. bracteatum* Dahlstedt, 1925 Four records from natural meadows and one from a roadside verge. (5 tetrads).
SP92 (T0437); SP93 (109/83); TL02 (T0276); TL03 (112/83).
- T. hamatiforme* Dahlstedt, 1918 Originally recorded in Pankhurst & Richards (1981 MS.). Mostly from damp meadows with only one from a roadside verge. (7 tetrads).
SP93 (25/84); TL01 (T0104); TL03 (T0284); TL04 (126/83); TL05 (121/83).
- T. hamatum* Raunkiaer, 1906 Two records from roadside verges, one from rough open grassland and one from a marsh. (4 tetrads).
SP92 (T0107); SP95 (5/85); TL01 (103/83); TL02 (21/84).
- T. hamiferum* Dahlstedt, 1929 Originally recorded in Pankhurst & Richards (1981 MS.). Both records from wet meadows. (2 tetrads).
TL02 (3/84); TL03 (T0132).
- T. lamprophyllum* M.P. Christiansen, 1936 From rough grassland and a roadside verge. (2 tetrads).
SP92 (99/83); TL03 (T0225).
- T. marklundii* Palmgren, 1910 All records from wet meadows and open grassland. (4 tetrads).
SP92 (T0439); SP95 (1/85); TL03 (T0228); TL14 (T0119).
- T. pseudohamatum* Dahlstedt, 1932 This is much the commonest dandelion in lowland Britain and is also one of the earliest to flower. It occurs in most habitats but is especially common on roadside verges. (25 tetrads).
SP91 (T0120); SP92 (T0106); SP93 (107/83); SP95 (T0079); SP96 (T0081); TL01 (104/83); TL02 (42/85); TL03 (T0128); TL05 (T0084); TL11 (T0231); TL13 (T0074); TL14 (T0076); TL24 (T0078); TL25 (T0077).
- T. quadrans* H. Øllgaard, 1978 This is quite a common, early flowering species found almost exclusively on roadside verges. (6 tetrads).
SP93 (T0218); TL03 (T0226); TL04 (T0224); TL06 (T0083).
- T. subditivum* Hagendijk, van Soest & Zevenbergen, 1973 (Fig. 4) There are very few British records of this species. On roadside verge near Sandy. (1 tetrad).
TL14 (T0167).

Figure 3

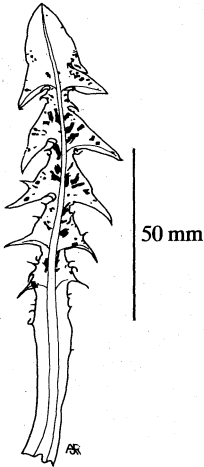


Figure 4

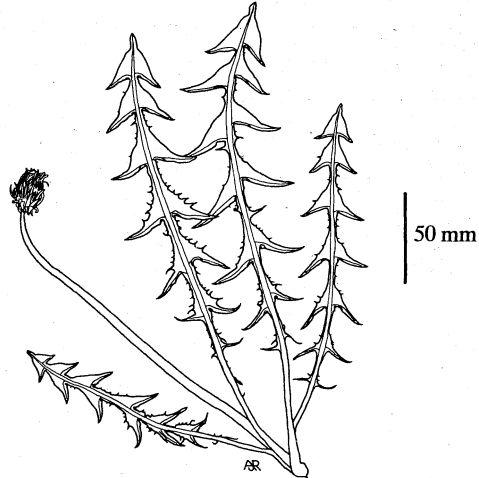


Figure 3. *T. euryphyllum*. Leaf of plant from damp meadow, 3/4 mile W. of Westoning (TL021328). 12.5.1984. Specimen no. T0320.

Figure 4. *T. subditivum*. Roadside verge, 1/4 mile S.S.W. of Sandy Railway Station (TL177483). 7.5.1983. Specimen no. T0167.

Section VULGARIA

- T. alatum* H. Lindberg fil., 1908 A common species. Six records from open grassland and meadows and one from a roadside verge. (7 tetrads).
TL01 (T0099); TL02 (T0274); TL03 (T0291); TL05 (17/85); TL11 (T0153).
- T. ancistrolobum* Dahlstedt, 1925 An easily identified species with dark green, shining leaves of a distinctive shape (Fig. 5). Fairly common in a large wet meadow next to the River Great Ouse at Fenlake, Bedford. (1 tetrad).
TL04 (T0423).
- T. cophocentrum* Dahlstedt, 1929 One record from the churchyard at Barton. (1 tetrad).
TL03 (T0126)
- T. croceiflorum* Dahlstedt, 1910 This is a common species in Britain although we only have four records of it: three from roadside verges and one from a natural meadow. (4 tetrads).
TL02 (T0271); TL03 (T0147); TL04 (T0214); TL15 (T0181).
- T. diastematicum* Marklund, 1940 (Fig. 6) First British record (specimen identified by H. Øllgaard. Water meadow next to the River Great Ouse, Stevington. (1 tetrad).
SP95 (T0136).
- T. ekmani* Dahlstedt, 1911 This is also a common species but we have only two records to date— from a water meadow next to the River Great Ouse, Stevington and from the churchyard at Old Warden. (2 tetrads).
SP95 (T0139); TL14 (T0169).
- T. expallidiforme* Dahlstedt, 1910 Our second most common dandelion. Like *T. pseudohamatum* above it occurs in most habitats, but is especially common on roadside verges. (13 tetrads).
SP93 (105/83); SP95 (4/85); SP96 (T0080); TL03 (T0304); TL04 (T0213); TL12 (T0173); TL14 (T0163).
- T. fasciatum* Dahlstedt, 1906 On roadside verge near Maulden. (1 tetrad).
TL03 (T0146).

Figure 5

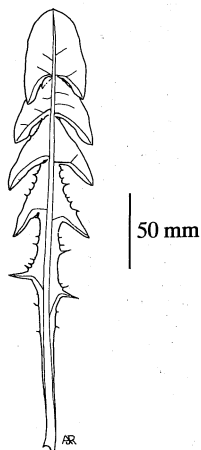


Figure 6

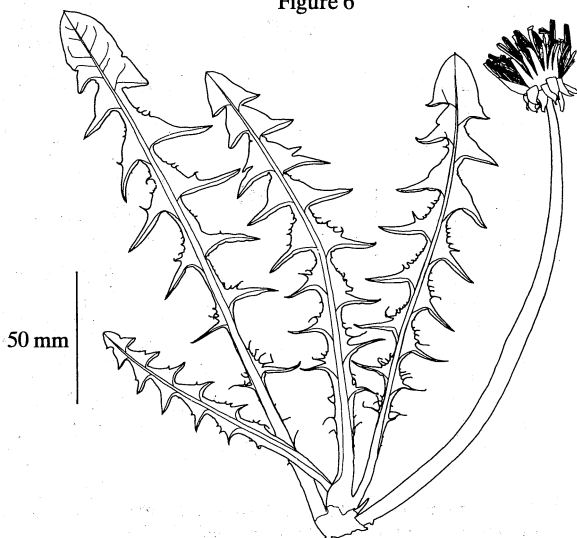


Figure 5. *T. ancistrolobum*. Leaf of plant from large meadow between road and River Great Ouse, Fenlake, Bedford (about TL064491). 12.5.1985. Specimen no. T0423.

Figure 6. *T. diastematicum*. Water meadow between St. Mary the Virgin Church and the River Great Ouse, just N. of Stevington (SP991537). 1.5.1983. Specimen no. T0136.

- T. hemicyclum* Haglund, 1942 This is a very distinctive species characterised by the square end-lobes to the outer leaves (Fig. 7). One of our records come from a natural meadow at Bidwell and the other from a roadside verge at Clophill. (2 tetrads).
TL02 (T0272); TL03 (T0301).
- T. incisum* H. Øllgaard, 1972 On roadside verge, Clifton. (1 tetrad).
TL14 (T0075).
- T. insigne* M.P. Christiansen & K. Wiinstedt, 1934 One record from the churchyard at Barton and one from side of a ditch at Biggleswade Common. (2 tetrads).
TL03 (T0127); TL14 (T0414).
- T. interveniens* Haglund, 1937 Next to River Ouzel near Leighton Buzzard and in large wet meadow next to River Great Ouse, Fenlake. (2 tetrads).
SP92 (T0011); TL04 (T0421).
- T. lacinosifrons* M.P. Christiansen & K. Wiinstedt, 1934 On sandy roadside verge near Liddington. (1 tetrad).
SP93 (T0204).
- T. laeticolor* Dahlstedt, 1906 On roadside verge near Millbrook. (1 tetrad).
TL03 (T0227).
- T. latisetum* H. Lindberg fil., 1908 One record from a disused railway line and two from roadside verges. (3 tetrads).
SP94 (T0221); TL15 (T0184); TL16 (T0187).
- T. leucopodum* Haglund, 1943 On roadside verge, Bletsoe. (1 tetrad).
TL05 (T0085).
- T. linguatum* M.P. Christiansen & K. Wiinstedt, 1934 In old natural meadow, Bidwell. (1 tetrad).
TL02 (T0273).
- T. lingulatum* Marklund, 1926 Originally recorded in Richards (1972). This is a common species

Figure 7

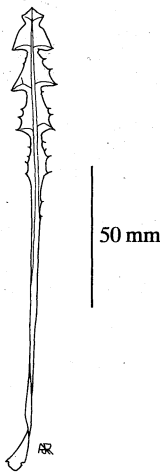


Figure 8

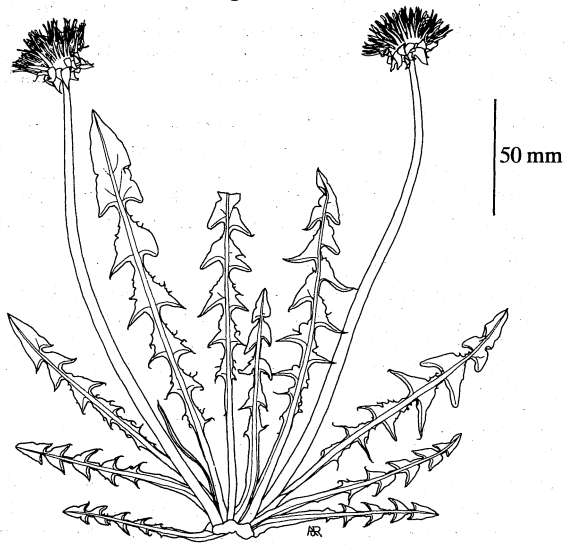


Figure 7. *T. hemicyclum*. Leaf of plant from roadside verge, 1 mile S. of Clophill (TL083364). 12.5.1984. Specimen no. T0301.

Figure 8. *T. macranthoides*. Old natural meadow, Hand Post Meadow, Red Cow Farm, just N.N.W. of Bidwell (TL011251). 5.5.1984. Specimen no. T0275.

which occurs in a wide variety of habitats in Bedfordshire. (6 tetrads).

SP91 (T0003); TL02 (T0175); TL03 (T0419); TL14 (71/82).

T. macranthoides Haglund, 1943 (Fig. 8) Second British record. A well-grown plant was found in an old natural meadow at Bidwell. (1 tetrad).

TL02 (T0275).

T. oblongatum Dahlstedt, 1930 Occurs in a wide variety of habitats. (5 tetrads).

SP93 (T0207); SP94 (T0121); TL02 (T0265); TL03 (T0189); TL04 (T0208).

T. pachymerum Haglund, 1946 Roadside verge at Northill. (1 tetrad).

TL14 (T0216).

T. pannucium Dahlstedt, 1925 In damp meadow next to River Great Ouse at Fenlake, Bedford. (1 tetrad).

TL04 (T0425).

T. piceatum Dahlstedt, 1910 In water meadow next to River Great Ouse, Stevington. (1 tetrad).

SP95 (T0140).

T. polyodon Dahlstedt, 1910 A common species. Seven records from roadside verges and two from meadows. (9 tetrads).

SP93 (T0361); TL03 (T0234); TL05 (T0252); TL11 (T0232); TL14 (T0159).

T. rhamphodes Haglund, 1935 From crack between wall and pavement, Luton. (1 tetrad).

TL02 (MM 21/82).

T. sagittipotens Dahlstedt & R. Ohlsen, 1934 From roadside verges at Tingrith and Westoning. (2 tetrads).

TL03 (T0318).

T. scotiniforme Dahlstedt, 1936 On open commonland, Studham Common. (1 tetrad).

TL01 (T0105).

- T. sellandii* Dahlstedt, 1925 A common species: four records from roadside verges, one from grassland and one from the bank of the River Great Ouse. (6 tetrads).
TL01 (T0101); TL04 (T0179); TL05 (T0086); TL11 (T0151); TL12 (T0174); TL14 (T0210).
- T. stereodes* Lange, 1938 On bank of disused railway, Stevington Country Walk. (1 tetrad).
TL05 (T0142).
- T. sublaeticolor* Dahlstedt, 1925 In wet meadows and a marsh. (6 tetrads).
SP92 (42/84); SP95 (T0138); TL04 (124/83); TL05 (21/85); TL15 (27/85).
- T. subundulatum* Dahlstedt, 1923 Also in wet meadows and a marsh. (6 tetrads).
SP92 (T0433); SP95 (19/85); TL02 (T0270); TL04 (125/83).
- T. trilobatum* Palmgren, 1910 On open grassland at Chiltern Green and a roadside verge at Haynes. (2 tetrads).
TL11 (64/82); TL14 (T0209).
- T. undulatiflorum* M.P. Christiansen, 1936 Three records from roadside verges, two from open grassland and one from waste ground. (6 tetrads).
SP92 (T0241); TL01 (T0102); TL02 (T0269); TL03 (T0279).
- T. vastisectum* Marklund, 1938 From roadside verges at Maulden and Great Barford. (2 tetrads).
TL03 (T0144); TL15 (T0182).

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FLOWERING PLANTS, FERNS AND FERN ALLIES (Spermatophyta and Pteridophyta)

Report of the Recorder

1985 was a rewarding year for plant recording in the county, during which a noteworthy native species was added to the flora. Dwarf Gorse *Ulex minor* which flowers in September and October has long been known in Hertfordshire, being a special feature of Nomansland Common but not considered to extend its range northwards. It was, however, found by my wife and me in company with C.R. Boon on a remote remnant of heath near to Heath and Reach, where it has every appearance of being native. Another noteworthy addition was Least Duckweed *Lemna minuscula*, the smallest vascular plant species likely to appear in the county. This is a recent introduction into Britain which has been expected to arrive in Bedfordshire sooner or later. My wife and I found it in an old moat at Hatch.

Additions continue to be made to the alien flora with one new wool alien species — the first for two years — *Medicago scutellata*, found at Flitwick by two visitors, C.G. Hanson and B.S. Wurzell. My wife and I added *Amaranthus cruentus*, a bird seed alien, and *Solanum laciniatum*, both from Sundon landfill site.

Two other introduced species not recorded for many years were found in new sites: Few-flowered Leek *Allium paradoxum* on a roadside near Woburn where it may become permanent, and Pink Purslane *Montia sibirica* in Amptill Churchyard, where it is well established and found jointly with C.R. Boon.

During the year there has been an excellent example of cause of change in the flora of the county. Broad-leaved Spurge *Euphorbia platyphyllos* was not an uncommon weed of clay soils 40 years ago but has rarely been seen in recent years. This year, when the tarmac of a runway of a wartime airfield was broken up prior to ploughing, the spurge appeared in quantity, its seeds having remained dormant below the surface for more than 40 years. There can be little doubt that its original introduction was with impure grain seed and its non-appearance in recent years has been due to the use of more pure seed.

I have been grateful again to members who have drawn my attention to plants of interest and trust that others will not hesitate to do so.

JOHN G. DONY



Dwarf Gorse at Heath and Reach. September 1985
(Photo: C.R. Boon)

MOSESSE AND LIVERWORTS (Bryophyta)

Report of the Recorder

1985 was another year of successful recording and a further four species were added to the county list. I had long been expecting *Cinclidotus mucronatus* to turn up. This species most often occurs on rocks, walls and tree bases about the flood zone of streams and rivers. I had searched the Ouse for it unsuccessfully but on tree roots by the stream at Kempston Wood I found it to be present in some quantity.

Last year I reported *Scleropodium cespitosum* from V.C.24 [Beds admin] but during 1985 I also found this in V.C.30 on tree roots by the River Ouse near Bromham. On a visit to Forty Acre Wood with Marcus Yeo we found *Platygyrium repens* as a welcome addition to the county list. This species is rare in Britain being recorded for only eleven vice-counties. It forms glossy green, often coppery tinged, mats or patches on tree bark and produces propagiferous branchlets at the branch tips. Marcus Yeo also added *Brachythecium populeum*, a slender member of the genus with rather crowded narrow leaves tapering to long filiform points, from a small wood near Cross End, Thurleigh and also found *Fontinalis antipyretica* var. *gigantea* from a stream N.W. of Wilden as a new variety to the county list.

A number of other species of note were also found during the year. *Climacium dendroides* was only previously known in recent times in the county from rather scrappy material I found at Stockgrove Park. However at Home Wood, Northill, I found a magnificent colony of this plant, with its tree like growths up to 12cm tall, growing together with a great quantity of *Rhytidiadelphus triquetrus* which is by no means common in Bedfordshire. At Thurleigh road cutting I found small quantities of *Barbula reflexa* and *Campylium elodes*. There were no records of either of these species since 1953 as was the case with *Amblystegium varium* which I found by the River Ouse at Willington.

Unfortunately last year's record by M. Yeo of *Amblystegium humile* from Odell Gravel Pits must be deleted. The National Recorder has examined voucher material of this species from all over the country and has decided that many of the records, including the Bedfordshire one, are actually stunted specimens of *Drepanocladus aduncus*.

My thanks to Mr and Mrs G. Hooper, Mr R. Revels, Dr H. Whitehouse, and Mr M. Yeo for supplying records this year.

ALAN R. OUTEN

LICHENS

Report of the Recorder

Churchyards still provide the most important habitats for saxicolous lichens in the county. A recent visit to Sutton churchyard (grid. ref. TL 219475) provided a total of 45 lichen species, three of which were new to the county. This church has a mixture of calcareous and siliceous gravestones and two interesting walls, one a red brick, east facing wall at the back of the church, the other an ironstone wall facing the road. These walls, gravestones, and the church itself, all support a great variety of lichen species and lichen assemblages.

Of the species recorded the following were the most interesting:

Acarospora fuscata Found growing on top of sandstone headstones. Also noted in Potton churchyard and Woburn Abbey.

Buellia sp. *Buellia canescens* and *Buellia alboatra* were both found growing on the brick wall, along with another *Buellia* sp. which is being investigated and may be either *B. aethalea* or *B. stellulata*, either of these would be new to the county.

Caloplaca teicholyta Found growing on church wall and calcareous gravestones; often in association with *Caloplaca aurantia*.

Lecania erysibe f. *sorediata* New to the county. This form of *Lecania erysibe* is a pollution tolerant sorediate form which has small, greenish soralia scattered over the surface of the grey thallus.

Lecidea sp. *Lecidea stigmatea* found growing on mortar in the walls and *Lecidea tumida* on sandstone gravestones.

Leproplaca chrysodeta New to the county, growing in crevices of walls.

Verrucaria sp. *Verrucaria glaucina*, *V. hochsteteri*, *V. muralis*, *V. nigrescens*, *V. sphinctrina* and *V. viridula* all found growing on calcareous substrates.

I would like to thank C.J.B. Hitch for his help in determining critical material.

FRANCES B.M. DAVIES

FUNGI

Report of the Recorder

The recorder is grateful to Alan Outen for the notification of the following new county records, all from Flitwick Moor, 23 October 1985. The specimens were collected by Alan in company with P.D. Orton and Miss Margaret Holden.

Entoloma sphagnetii, *Lactarius obscuratus*, *L. pubescens*, *Naucoria alnetorum*, *N. scolecina*, *Russula luteotacta*, *Leccinum varicolor*, and *Cheilymenia coprinaria*.

DEREK A. REID

THE FUNGUS FORAY

The venue of the 1985 fungus foray, held on October 27th, included two nearby areas of mixed deciduous woodland at Studham, i.e. Ravensdell Wood and Mansgrove Wood, and the Society is most grateful to Mrs C. Horton for allowing us access to these woods. In all about 30 members set off under the leadership of Dr D.A. Reid but it soon became clear that, in common with the remainder of southern England, fungi were going to be scarce following the dry autumn.

Both woodlands sported a considerable undergrowth, which is not conducive to production of larger gill-bearing fungi, and in general such fungi were poorly represented. Nevertheless 114 species of fungi were found, of which 11 were new to the county and a gathering of *Hymenochaete corrugata* confirmed old records of this species from Bedfordshire, although the forma *conglutinans* was gathered in 1972. The latter unites branches which are in contact, and subject to chafing by wind, with a rusty brown mycelial growth. It is also interesting to note the finding of the Dog Phallus *Mutinus caninus*, since records indicate that it is of very sporadic occurrence in the county. It was first reported in recent times at Maulden Wood in 1974 and had not been refound until this year.

Of the novelties the most striking was a single large specimen of *Pholiota adiposa* growing in a ride in Mansgrove Wood. It is a bright golden yellow fungus densely set with dark rusty-brown, reflexed, glutinous scales on the sticky cap and also on the stem. Often confused with the common *P. aurivella*, it can be recognized by having an altogether more regularly dark scaly appearance, smaller brown spores 5-7 x 3-4 μm , and growing in clusters at the base of trunks. *P. aurivella* has far less conspicuous, irregularly disposed scales, which may be washed off the cap in damp weather, lacks brown reflexed scales on the stem, has spores measuring 7-9 x 5-6 μm , and occurs on fallen trunks or high up in the canopy of leaves and branches.

Inocybe fibrosoides was probably the most uncommon species collected. It is one of the most robust members of the genus with a pure white, marginately bulbous stem, up to 7 cm high and 11 mm wide; a pale brown, campanulate cap; clay-coloured gills; prominently knobby brown spores; and thick-walled, apically encrusted cystidia.

Melanoleuca adstringens shows all the usual features of the genus such as the presence of harpoon-type cystidia, and spores with amyloid ornament, in addition to having a moist greasy cap and crowded sinuate gills. The distinctive features of the species are gills with a salmon-pink tint, in combination with an olive-grey cap. *Russula barlae* is a member of the *R. xerampelina*-complex, all of which have a strong crab-like smell, a green reaction with Iron alum when rubbed on the stem, and an ochre spore-print. *R. barlae*, which grows in association with oak, is recognized by its

yellowish straw-coloured cap with a rosy tint to the margin.

An unusual but easily overlooked species is *Mycena longiseta*; a tiny agaric in which the grey cap, 3-7 mm diam., and stem are covered by very elongated, pointed, thick-walled hairs, easily visible under a X 10 lens. The fruitbody is attached to fragments of wood, etc., by a small disc at the base of the stem, hence its placement in the section Basipedes of the genus *Mycena*, along with such familiar species as *M. stylobates* and *M. bulbosa*. Like these species it has non-amylloid spores and broad cylindrical cheilocystidia, which often have a long narrow apical protrusion.

Of the non gill-bearing Basidiomycetes, *Phanerochaete filamentosa* is a rare ochraceous, loosely resupinate fungus on wood, with well developed fringing rhizomorphs. Microscopically it can be seen to have thick-walled, conical, encrusted cystidia; small elliptic, hyaline spores with a range of 4-5 x 2-3 μm ; and hyphae lacking clamp-connexions.

Scutellinia cervorum is an attractive red cup-fungus, with discs up to 7 mm diam., fringed with black, eyelash-like hairs which are best seen under a lens. It is very similar to the common *S. scutellata*, differing slightly in microscopic detail. This particular collection, growing on the cut ends of stacked conifer logs, was a great attraction to the photographers in the party. *Taphrina cerasi* produces conspicuous symptoms on cherry, causing large candelabra-like, pendulous 'Witches Brooms' or galled twigs in the crown of the tree. The two *Erysiphe* species are both common mildews on their respective hosts and must surely have been repeatedly overlooked in the county hitherto. The same may be said of *Puccinia calcitrapae* — a common rust on *Centaurea nigra*.

Agaricus campestris; *Bolbitius vitellinus*; *Clitocybe bicolor*; *C. flaccida*; *C. nebularis*; *C. odora*; *Collybia confluens*; *C. fusipes*; *C. peronata*; *Coprinus atramentarius*; *C. comatus*; *C. disseminatus*; *C. lagopus*; *C. plicatilis*; *C. silvaticus*; *Crepidotus variabilis*; *Entoloma rhodopolium*; *Flammulina velutipes*; *Galerina hypnorum*; *Gymnopilus hybridus*; *Hebeloma sacchariolum*; *Hypholoma fasciculare*; *Inocybe fastigiata*; **I. fibrosoides*; *I. maculata*; *Laccaria amethystea*; *L. laccata*; *Lactarius circellatus*; *L. quietus*; *L. subdulcis*; *L. vietus*; *Lepiota cristata*; *Lepista nuda*; **Melanoleuca adstringens*; *Mycena epipterygia*; *M. galericulata*; *M. galopus*; **M. longiseta*; *M. oortiana*; *M. sanguinolenta*; *Panaeolina foenicisii*; **Pholiota adiposa*; *P. gummosa*; *P. squarrosa*; *Pluteus cervinus*; *P. salicinus*; *Psathyrella candolleana*; *P. hydrophila*; *P. squamosa*; *Psilocybe semilanceata*; **Russula barlae*; *R. fragilis*; *R. mairei*; *R. ochroleuca*; *Stropharia aeruginosa*; *S. coronilla*; *S. squamosa*; *Tricholomopsis rutilans*; *Tubaria furfuracea*;

Boletus chrysenteron;

Antrodia mollis; *Bjerkandera adusta*; *B. fumosa*; *Clavulina cinerea*; *Coriolus versicolor*; *Daedalea quercina*; *Daedaleopsis confragosa*; *Fistulina hepatica*; *Heterobasidion annosum*; †*Hymenochaete corrugata*; *Laetiporus sulphureus*; *Leptotritum semipileatus*; *Merulius tremellosus*; *Peniophora lycii*; *P. quercina*; **Phanerochaete filamentosa*; *Phlebia rufa*; *Polyporus squamosus*; *Pseudotrametes gibbosa*; *Schizopora paradoxa*; *Serpula mollusca*; *Skeletocutis amorphus*; *Stereum hirsutum*; *S. rameale* [= *S. sulphuratum*]; *S. rugosum*;

Calocera viscosa; *Dacrymyces stillatus*;

**Puccinia calcitrapae* [= *P. centaureae*] on *Centaurea nigra*;

Lycoperdon foetidum; *L. perlatum*; *L. pyriforme*; *Mutinus caninus*; *Phallus impudicus*;

Coryne sarcoides; *Dasyscyphus virgineus*; *Rhytisma acerinum*; **Scutellinia cervorum*;

**Taphrina cerasi*;

Daldinia concentrica; *Diatrype disciformis*; *D. stigma*; *Erysiphe communis* — on *Circaea lutetiana*; **E. heraclei* — on *Heracleum*; *Hypoxylon fragiforme*; *H. fuscum*; *Microsphaera quercina*; *Nectria cinnabarina*; *Uncinula aceris* — on *Acer campestris*; *Xylaria hypoxylon*; *X. polymorpha*;

Spinellus fusiger

Penicillium clavaraeforme;

Arcyria denudata; *Stemonitis fusca*;

* New county record

† Confirmation of existing record

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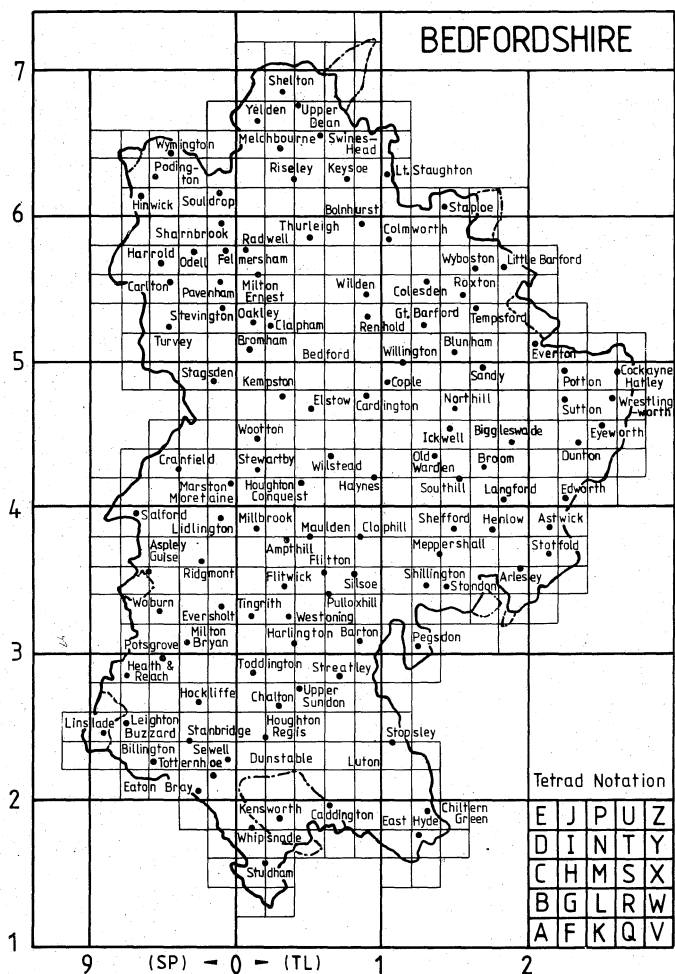
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Tetrad map of Bedfordshire showing the main towns and villages

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