

The Bedfordshire Naturalist

THE JOURNAL OF THE
BEDFORDSHIRE
NATURAL HISTORY SOCIETY
FOR THE YEAR
1982
No. 37

PUBLISHED BY THE
BEDFORDSHIRE NATURAL HISTORY SOCIETY

September 1983

BEDFORDSHIRE NATURAL HISTORY SOCIETY 1983

Chairman:

Mr D GREEN, Red Cow Farm Cottage, Bidwell, Dunstable, Beds LU5 6JP

Honorary Secretary:

Mrs M. J. SHERIDAN, 28 Chestnut Hill, Linslade, Leighton Buzzard, Beds LU7 7TR

Honorary Treasurer:

Mr M. R. CHANDLER, 19 Hillside Close, Shillington, Hitchin, Herts SG5 3NN

Honorary Programme Secretary:

Mr J. P. KNOWLES, 6 Townfield Road, Flitwick, Bedford MK45 1JE

Honorary Librarian and Membership Secretary:

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

Honorary Editor (*Bedfordshire Naturalist*):

Mr C. R. BOON, 7 Duck End Lane, Maulden, Bedford MK45 2DL

Council (in addition to the above):

Mr W. J. Drayton
Mr S. Halton
Dr N. F. Janes

Dr B. S. Nau
Mr B. J. Nightingale
Mr D. J. Odell
Mr M. J. Palmer

Mr N. Pollard
Mr D. G. Rands
Mr R. V. A. Wagstaff

Honorary Editor (*Muntjac*):

Mr R. V. A. Wagstaff, 3 The Lawns, Everton, Sandy, Beds SG19 2HB

Committees appointed by Council:

Finance:

Mr M. Chandler (Sec.)
Mr D. Green

Mrs M. Sheridan
Mr R. Stephenson

Dr B. Nau
Mr M. Williams

Membership:

Miss R. Brind
Mr J. Burchmore
Mr M. Chandler
Mr P. Clarke
Mr W. Drayton

Mr D. Green
Mr S. Halton
Mrs R. Hayman
Mr J. Knowles
Mr N. Pollard

Mr D. Rands
Mrs M. Sheridan
Mr M. Sheridan
Mr R. Stephenson (Sec.)
Mr R. Wagstaff

Scientific:

Mr D. Anderson
Mr C. Boon
Mrs F. Davies

Dr N. Janes
Mr J. Knowles
Mr A. Livett
Dr B. Nau (Sec.)

Mr B. Nightingale
Mr D. Odell
Mr M. Williams

THE BEDFORDSHIRE NATURALIST

No. 37 (1982)

Edited by C. R. BOON

CONTENTS

Officers of the Society	cover ii
Report of the Council	2
Editorial	3
Proceedings	3
Report of the Treasurer	5
Statement of Accounts	6
Meteorology — Report of the Recorder	8
Mammals — Report of the Recorder	9
A Summary of Divers, Grebes, Swans, Geese and Ducks in Bedfordshire 1946-1982 — P. Smith.	12
Birds — Report of the Recorder	23
A Summary of the Wading Birds Recorded in Bedfordshire 1946-1981 — Addendum	34
Bird Ringing Report — D. S. Woodhead	35
Fish — Report of the Recorder	37
Slugs and Snails — Report of the Recorder	38
The Spiders and Harvestmen of Old Warden Tunnel Nature Reserve. Part I: The Experimental Procedures and the Flora — T. J. Thomas.	39
Spiders — Report of the Recorder	43
Grasshoppers and Crickets — Report of the Recorder	43
Dragonflies — Report of the Recorder	44
Hoverflies — Report of the Recorder	44
Bugs — Report of the Recorder	45
Moths — Report of the Recorder	46
Butterflies — Report of the Recorder.	48
A Checklist and Bibliography of Coleoptera in Bedfordshire — B. S. Nau	50
Checklist of Bedfordshire Coleoptera: (1) Carabidae to Histeridae	52
Flowering Plants, Ferns and Fern Allies — Report of the Recorder.	55
Lichens — Report of the Recorder	56
Mosses and Liverworts — Report of the Recorder.	57
The Fungus Foray — D. A. Reid	57
Fungi — Report of the Recorder	59
Sites — Report of the Recorder	60
Recorders	cover iii
Tetrad Map of Bedfordshire	cover iv

REPORT OF THE COUNCIL

The Council are pleased to report that the total membership figure for 1982 is 460. Although this shows a fall of 17 from last year's record total of 477, it is nevertheless a perfectly healthy figure and gives no present cause for concern.

The recruitment of many of our new members can be attributed to various Society exhibitions around the county. The annual Library Exhibition in Bedford, organised by Mr A. Martin in September, was particularly successful. This comprised largely of photographs taken by Society members and a G.P.O. display of the Protection of Wildlife commemorative stamps. The Society are grateful to the G.P.O. for the loan of this display. An exhibition of members' drawings and paintings, organised by Mr S. Halton, was held at Leighton Buzzard Library in July and proved to be very popular, resulting in several new members. In November the Society were invited to take part in a Conservation Fair, organised by the East Bedfordshire R.S.P.B. Group, at the Harpur Suite, Bedford. This was a great success and resulted in yet more new members for the Society. These new members help to offset those who leave, thus maintaining a reasonably balanced membership figure.

Some years ago a cabinet of entomological specimens belonging to the late Ray Palmer was donated to the Society. In order that this collection of specimens might be more accessible and of benefit to as many people as possible the Council decided that the Society should transfer the cabinet to Bedford Museum as a gift. It was given on condition that the Museum maintained it in reasonable order, made it accessible in the same way as their other collections, and that, if at any time they felt unable to maintain the collection, it would be returned to the Society at no charge. The cabinet is now in the Natural History section of the Museum under the care of Rosemary Brind, the Natural History Officer. Anyone wishing to go and see this collection will be most welcome.

It is with regret that Council are losing three of their valued members this year. Mrs Muir-Howie, Mr Arnold and Mr Martin have all stated their wish to stand down and the remaining Council members would like to take this opportunity of expressing their thanks to these people for their important contributions during their years of service on this Committee.

The Council are once again grateful to the Honorary Editor, Mr Boon, for his work in preparing the *Bedfordshire Naturalist* for publication, culminating in yet another first class edition. They are also grateful to Mr Wagstaff for continuing to edit the *Muntjac* newsletter and to Mrs Wagstaff for typing the stencils for this.

The Council would like to thank the Recorders who devote time and effort to producing valuable records. It is hoped that as many members as possible will pass on records to the appropriate Recorders.

Finally, the Council would like to thank all members who support the Society by attending lectures and field meetings and hope that they will continue to benefit from and enjoy their membership.

MARY SHERIDAN

	1979	1980	1981	1982
Ordinary members	298	326	363	354
Associate members	60	57	62	58
Student members	44	30	32	28
Corporate members	9	10	11	11
Life members	5	5	5	5
Honorary members	4	4	4	4
	420	432	477	460

Table. Membership of the Society over the last four years

EDITORIAL

The old programme on the right is from a forerunner of our Society which was formed in 1888 and has been loaned by David Anderson. The date is not known but must be before 1930 when J. Hanson (see chat on flowers) died. The programme, when compared to our Proceedings printed below, shows quite a difference – we have no longer the archaeological influence and are now a society which encourages scientific study. Hopefully we cater for the wide spectrum of interests from the general to the specialist, the latter being shown by the Reports of the Recorders.

One of the duties of a Recorder is to produce an annual report for the Journal and I would encourage all Recorders to send in contributions – there must be some items of interest in all fields of study. Future members who wish to take an interest in certain branches of the local flora or fauna will look to earlier issues of the Journal for information and in some areas they will be disappointed.

I had a good response to last year's request for references but I am sure that there must be more but even a negative response is of interest showing there is room for more study. I hope to publish the lists in the next issue.

BEDFORD NATURAL HISTORY AND ARCHAEOLOGICAL SOCIETY.

Programme.

- Feb. 14.—“Continental Travel Notes and Pictures.” By Mr. J. R. Cormack.
Illustrated with Lantern Slides.
- „ 28.—“Southwell Minster.”
By Rev. Percy G. Langdon, M.A.
Illustrated with Lantern Slides.
- Mar. 14.—“Mendel and Mimicry.”
By Mr. R. Wolfenden.
Exhibition of Arundel Prints.
By Mr. F. Fossett.
- „ 28.—“Natural History Lore & Legend.”
By Miss Southwell.
“A Chat on Some Spring Flowers.”
By Mr. J. Hamson.
- Apr. 11.—“Folklore and Scenery of North Wales.” By Mr. G. H. Stowbridge.
Illustrated with Lantern Slides.
- „ 25.—“The Moon.”
By Mr. J. Arnold Whitechurch.
Illustrated with Lantern Slides.
- May 11.—Committee Meeting to arrange Summer Programme.

Meetings at Bedford General
Library, at 7.45 p.m.

N.B. No further notice will be given of the
above Meetings.

PROCEEDINGS

Indoor Meetings

- 461st Ordinary Meeting 7th January, Bedford. “Birds through other people's eyes” by Mr N. Hammond (RSPB Head of Publications). Chair: Mr J. P. Knowles.
- 462nd Ordinary Meeting 14th January, Luton. “Mammals in Bedfordshire” by Mr D. Anderson. Chair: Mr J. G. Dony.
- 463rd Ordinary Meeting 19th January, Dunstable. Four short talks. Mr V. Arnold – Entomological books; Mr J. Knowles – Bird camouflage; Mr D. Rands – Harvest mice; Mrs M. Sheridan – Shuttleworth.
- 464th Ordinary Meeting 2nd February, Leighton Buzzard. The Chairman's evening. “A look at the Camargue” by Mr D. Green.
- 465th Ordinary Meeting 17th February, Bedford. “Colour in the countryside” by Mr D. G. Rands. Chair: Mrs M. J. Sheridan.
- 466th Ordinary Meeting 23rd February, Dunstable. “Bedfordshire Woodlands” by Dr J. G. Dony. Chair: Dr B. S. Nau.
- 467th Ordinary Meeting 4th March, Bedford. A natural history quiz. Chair: Mr A. J. Martin.
- 468th Ordinary Meeting 9th March, Leighton Buzzard. “A personal A-Z of the Bedfordshire countryside” by Mr J. P. Knowles. Chair: Mrs M. Sheridan.
- 469th Ordinary Meeting 16th March, Dunstable. “British wild orchids” by Mr A. R. Outen. Chair: Mr D. G. Rands.

Annual General Meeting 24th March, Bedford.

470th Ordinary Meeting 30th March, Flitwick. Exhibition of members' slides, black and white photographs and drawings.

471st Ordinary Meeting 6th October, Bedford. Members' evening. Chair: Mr R. B. Stephenson.

472nd Ordinary Meeting 14th October, Luton. "Some problems of a railway flora" by Dr J. G. Dony. Chair: Mr C. R. Boon.

473rd Ordinary Meeting 26th October, Dunstable. "A birdwatcher's year" by Mr P. J. Wilkinson. Chair: Dr B. S. Nau.

474th Ordinary Meeting 28th October, Flitwick, "The problems and joys of the Year of the Butterfly" by Mr A. J. Martin and Mr R. Revels. Chair: Mr V. W. Arnold.

475th Ordinary Meeting 3rd November, Bedford. "An unusual view of natural history" by Mr M. H. Miller. Chair: Mrs E. B. Rands.

476th Ordinary Meeting 9th November, Leighton Buzzard. "An introduction to grasshoppers and crickets" by Mr D. G. Rands. Chair: Mr M. Sheridan.

477th Ordinary Meeting 18th November, Luton. "Spring in the French Alps" by Mr M. Chandler. Chair: Mr J. P. Knowles.

478th Ordinary Meeting 23rd November, Dunstable. Members' evening. Chair: Mr W. J. Drayton.

479th Ordinary Meeting 30th November, Henlow. "Enjoying natural history" by Mrs E. B. Rands. Chair: Mr D. Green.

480th Ordinary Meeting 1st December, Bedford. Films by Mr W. Champkin. Chair: Mr R. B. Stephenson.

481st Ordinary Meeting 21st December, Dunstable. "A showing of Alf Ford's slides" introduced by Mr A. R. Outen.

Field Meetings

24th January	Willen Lake, Milton Keynes. Wintering wildfowl. Leader: Mr A. B. Tomczynski.
31st January	Tring Reservoirs. Winter birds. Leader: Mr R. V. A. Wagstaff.
21st February	Eye Brook Reservoir, Leics. Leader: Mr B. J. Nightingale.
28th March	Flitwick Moor. Identification of amphibians. Leader: Mrs H. Muir-Howie.
4th April	Barkers Lane Gravel Pits. Spring migrants. Leader: Mr D. J. Odell.
17/18th April	Peak District. To look for Mountain Hares with the Sorby N.H.S.
25th April	Minsmere, Suffolk. Coach trip. Leader: Mr D. J. Odell.
1st May	Stevington Country Park. Dawn chorus. Leader: Mr J. P. Knowles.
2nd May	Amphill Park. Dawn chorus. Leader: Mr J. P. Knowles.
9th May	Maulden Woods. To study various aspects of the forest. Leaders: several.
19th May	Northill. Bird sounds of the evening. Leader: Mr B. J. Nightingale.
21st May	Sutton Fen. Moth trapping. Leaders: Mr V. W. Arnold and Mr C. Banks.
23rd May	Wicken Fen N.R., Ely. Leader: Mr J. P. Knowles.
26th May	Milton Bryan. Evening walk along a green lane. Leader: Mr. D. Green.
30th May	Flitwick Manor Park. Leader: Dr J. G. Dony.
5th June	Dunstable Downs. Leader: Mr W. J. Drayton.
13th June	Selbourne, Hampshire. Coach trip. Leader: Mrs E. B. Rands.
16th June	Bromham Churchyard. Study of Lichens. Leader: Mrs F. B. M. Davies.
18/20th June	Yorkshire Dales. Weekend trip. Leader: Mr V. W. Arnold.
22nd June	Coopers Hill, Amphill. Plant recording. Leader: Mr C. R. Boon.
26/27th June	Maulden Woods. Annual all-night meeting.
4th July	Lower Alders, Campton. Leaders: Mr J. Niles, Mr V. W. Arnold and Mr K. Webb.

7th July	Great Barford. Evening walk. Leader: Mr D. J. Odell.
11th July	Henlow Scout Camp. Natural history survey. Leaders: Mr and Mrs D. G. Rands and Dr B. S. Nau.
13th July	Barton Hills. Evening walk. Leader: Mr M. C. Williams.
18th July	Village Pond, Toddington. One day course on fresh water mollusca. Joint meeting with the Conchological Society. Leaders: Mrs E. B. Rands and Dr A. J. Rundle.
1st August	Felmersham Nature Reserve. Freshwater life. Leader: Dr B. S. Nau.
15th August	Bromham to Stevington. Leader: Mrs H. Muir-Howie.
18th August	Sundon Hills. Evening walk. Leader: Mr A. B. Tomczynski.
5th September	Shire Oak. Identification of grasshoppers and crickets. Leader: Mr D. G. Rands.
10th September	Flitwick Moor. Moth trapping. Leaders: Mr V. W. Arnold and Mr R. Bradshaw.
12th September	Oxford Botanical Gardens. Car trip. Leader: Dr A. J. Rundle.
19th September	Shuttleworth College. One day course on a variety of natural history subjects.
2nd October	Bricket Wood, Herts. Fungus foray, joint meeting with Herts N.H.S. Leader: Mr A. R. Outen.
17th October	Westonbirt Arboretum, Gloucs. Car trip. Leaders: Mr and Mrs M. Sheridan.
24th October	Bedford Park. Leader: Miss R. Brind.
31st October	Rushmere Park, Heath and Reach. Fungus foray, by kind permission of Mr R. A. Brough. Leader: Dr D. A. Reid.
7th November	Maulden Woods. Plant galls. Leader: Mrs E. B. Rands.

REPORT OF THE TREASURER

Looking first at our current income and expenditure, it will be seen that we made a slight loss on the year of £51 which means that we will need to continue to check our expenditure for the current year, but in view of the excess of income over expenditure for 1981 do not need to consider an increase in subscriptions for the time being. Following on the reduction in our total membership, subscription income was down slightly, but this was balanced by a general reduction in expenditure, except for the Journal which remains our major single item.

The report of the Council has already mentioned the disposal of the display cabinets, which no longer appear in the Balance Sheet. In addition the microscope, given to the Society some years ago, had not been used by members for some time and so the Council decided to sell this — it realised a nett price of £204.00 against a Balance Sheet written-down value of £15.00.

Members will remember that money was collected for a memorial to Alf Ford and originally a seat in a suitable place was considered to be most suitable. However having seen so much vandalism recently Mrs Phyllis Ford felt that the money should be used for something more permanent and the total fund of £165.00 has been given to the Society to help cover the cost of a suitable colour plate for the book on the Natural History of Bedfordshire now being prepared by the Society. This figure appears under the income section of our Publication Account.

In addition to the interest received in our Deposit Accounts there is an amount of £1153 as repaid income tax, which is deducted at source.

A further £1000 has been invested, at 14¼% with Southend-on-Sea for two years.

The high figure of £775.00 for current liabilities is mainly for the printing bill for the Journal as this was received at the very end of the year.

The final figures, for our total assets, show a healthy increase for the year of just over £3000.

INCOME AND EXPENDITURE ACCOUNT FOR YEAR ENDED 31st DECEMBER 1982

INCOME – Current Accounts

1981 £		1982 £
1362	Subscriptions	1203
156	Sales	69
28	Surplus on meetings	53
—	Donations	13
1546		1338

EXPENDITURE – Current Accounts

1981 £		1982 £
—	ADMINISTRATION	—
—	Officers' Expenses	—
15	Postage	21
—	Sundries	17
25	Insurance	28
10	Auditors Honorarium	10
50		76
—	MEETINGS	—
155	Hire of Halls	153
12	Lecturers and Films	—
168	Programmes	148
7	Expenses	13
342		314
—	SCIENTIFIC	—
623	Journal	769
13	Subscriptions	—
—	Recorders' Expenses	6
17	Sundries	8
—	Site Recording	3
653		786
—	PUBLICITY	—
94	Newsletter	142
166	Application Forms	—
42	Advertising	50
302		192
—	EQUIPMENT PURCHASE	—
36	Repairs	2
36		2
—	DEPRECIATION	—
29	of equipment @ 10% on cost	19
29		19
135	Excess of Income over Expenditure	51
1546		1338

1981			1982
	PUBLICATIONS ACCOUNT		
148	Brought forward		155
	Income: Sales	309	
	A. Ford Memorial	165	
599	Transfer from Grants Account	129	603
592	Expenditure		—
155			758
	GRANTS ACCOUNT		
129	Brought forward		129
—	Transferred to Publications Account		129
129			NIL
	DEPOSIT ACCOUNTS — Interest		
257	City of Nottingham Bonds		827
219	East Staffs Co. Co. Bonds		219
94	Redbridge Borough Bonds		93
—	Southend-on-Sea B.C. Bonds		64
99	Bank Deposit Account		199
—	Income Tax repaid		1153
669			2555

	1981	Disposal	Balance
	Balance Sheet Value	Price	
Microscope	15	204	189
Specimen Display Cabinets (donated to Bedford Museum)	90	Nil	— 90

99

1981 **BALANCE SHEET AS AT 31st DECEMBER 1982** 1982

FIXED ASSETS		COST		DEPRECIATION		
				Total	Year	
35	Books and Journals					35
10	O.S. Maps					10
8	Bird Song Records					8
15	Display Boards					15
15	Microscope —					—
3	Tools					3
2	Old Screen					2
18	New Screen	20	4	2		16
24	Slide Projector	60	42	6		18
44	Duplicator and Stand	110	77	11		33
90	Specimen Display Cabinets		—	—		—
264						140

	CURRENT ASSETS		
415	Bank Account		481
1269	Deposit Account		4200
68	Cash in Hand		54
3000	City of Nottingham Bonds 13% to 30.6.85		3000
3000	City of Nottingham Bonds 13¼% to 30.6.87		3000
2500	East Staffs D.C. Bonds 12½% to 10.9.84		2500
1000	Redbridge Borough Bonds 13¼% to 5.8.86		1000
—	Southend-on-Sea B.C. Bonds 14¼% to 9.8.84		1000
11279			15235

	CURRENT LIABILITIES		
22	Creditors		775
£11,521	TOTAL		£14,600

M. R. CHANDLER
Honorary Treasurer

P. J. HIGGINS A. M. SMITH
Honorary Auditors

METEOROLOGY

Report of the Recorder

THE WEATHER OF 1982

Although January started mild and wet, the cold weather that had been a notable feature of the preceding December soon returned. The cold spell lasted from the 6th to the 15th of the month, with the temperature continuously below freezing for eight days, starting on the 7th of January. The main snowfall occurred on the 8th, with snow falling all day and night, followed by further light to moderate snow most of the next day. Although snow was lying at depths of up to 9 inches, Bedfordshire escaped the heaviest falls. In the days following the snow there were some exceptionally cold nights, with severe frost, particularly the 10th (-16.6°C , 2°F), the 11th (-15°C , 5°F), the 14th and 15th (both -17.2°C , 1°F). These are my own figures for Barton. Elsewhere temperatures of -15.9°C were recorded at Thurleigh, -18.0°C at Silsoe and -16.6°C from Sandy. After this exceptional weather, the remainder of the month was quiet, with a few days of rain and temperatures mostly a little above normal.

The mild weather continued for the first two weeks of February with day time temperatures as high as 13.3°C (56°F) on the 9th of the month. The second half of the month was dominated by an anticyclone over Europe giving easterly or south easterly winds. Temperatures were rather low with some night frosts and some sleet or snow, but no really exceptional weather.

March 1982 was not untypical with some strong winds and heavy showers including hail and occasionally sleet or snow. The month was generally mild with a particularly warm and sunny spell from the 22nd to the 27th of the month when the temperature rose above 60°F (15.6°C) on three consecutive days, the warmest being the 26th (17.7°C , 64°F).

April was the driest month of the whole year. Most of the little rain that did fall occurred in the first ten days and thereafter hardly any rain fell at all. This was caused by a large anticyclone situated over or near to the British Isles, with winds mostly from an easterly direction. Fortunately, temperatures were generally very close to normal with only slight frost on a number of nights mid-month.

The first week of May brought cold northerly winds with some heavy showers including hail and snow on some days. After this unseasonable start the weather became very much warmer, particularly mid-month and again in the last few days when the temperature reached 25.6°C (78°F) before some very heavy thundery showers.

The warm weather continued in the first week of June, with temperatures up to 28°C (83°F) but also with heavy thunder storms. For the remainder of the month temperatures were near to normal but it was often wet. Indeed June was the second wettest month in the whole year. There were also more thunderstorms in the last week of the month.

Fortunately, July's weather was much more as summer should be with many warm, dry and sunny days. The highest temperatures occurred in the second and last weeks of the month with temperatures up to or above 80°F (26.7°C). The warm weather continued for the first week of August but evening thunderstorms became common and frequent. The rest of the month was generally unsettled with rain at times and rather cool.

The first half of September was generally warm and sunny but after a high of 81°F (27.2°C) on the 18th, the remainder of the month was cool with rain on most days, some of which was quite heavy. Tornadoes even occurred in some parts of the country during this period.

October was quite definitely the wettest month of the year. It was also cool and cloudy much of the time. This was true for most of the country and October 1982 was one of the wettest Octobers this century. By the last week, the soil was waterlogged with much evidence of surface water lying on fields everywhere. Perhaps one consequence of the unsettled weather was the late arrival of the first frosts at the end of October and these were only slight. November was also quite wet, but generally rather mild so that the only cold weather was in the last

four days. November often brings a spell of dry, frosty and cold days but this was not the case in 1982. Similar weather continued throughout much of December, though it was often colder with several nights of frost, and snow on three days.

Overall, 1982 was definitely a wet year, but apart from January, both night and day temperatures were a little above average. I have again included the weather record for Silsoe kindly supplied by Mrs R. Taylor of the National Institute of Agricultural Engineering. I would also like to thank the Anglian Water Authority, Lee Valley Water Company and the RSPB at Sandy who have also supplied me with information.

RAINFALL AND TEMPERATURE AT SILSOE

	mm	mean maximum °C	mean minimum °C
January	39.7	5.7	-1.7
February	19.4	7.7	1.4
March	61.4	10.1	1.7
April	13.2	13.0	3.2
May	49.8	17.1	5.2
June	87.9	20.2	11.0
July	20.1	21.6	11.4
August	79.3	21.0	11.6
September	47.2	19.7	9.2
October	110.5	13.4	6.8
November	69.3	10.4	5.3
December	43.9	7.3	0.0
Year	641.7	13.9	5.4
Mean (1957-80)	549.4	13.4	5.3

M. C. WILLIAMS

MAMMALS

Report of the Recorder

The main feature of 1982 was the cold, snowy period in January. First reactions are that this would have been fatal to many animals, but the records in total showed up several other interesting results.

The Bat species are the most likely to suffer from the cold weather, but several checks at known cave-type hibernation sites found increased numbers of Bats compared to previous years. These Bats would have been driven in to the warmer sites instead of hibernating in trees or under building roofs which would have been similar to the below freezing air temperature and thus too cold for the Bats. These checks produced new records for Daubenton's and Natterer's Bats. Neighbouring counties also found hibernating Barbastelle Bats in these types of sites. This is a very scarce species which has only once been recorded in Bedfordshire so great care was taken to look for it . . . but without success. During the year the new Wildlife and Countryside Act gave total protection to all Bat species, and now any Bat worker has to be licenced. This means that householders have to notify the NCC if they have a Bat problem and someone — often this Recorder — is sent along to investigate and advise. This procedure produced several new Bat sites, all being Pipistrelle; the best being a house in Toddington with a roost of at least 70 breeding under the tiles hanging on the south facing wall. These numbers, plus similar high numbers at other out of county sites, suggest that Bats did not suffer too much

from the cold winter.

Another species expected to suffer from the cold and snow was the Chinese Water Deer. In my report for 1981 I mentioned that we had no sightings at all and was concerned for its future existence. However, 1982 produced records for one new site and several repeat records for known locations making it the best year for some time. Again the signs are that the winter did not produce the expected toll.

Badger records continue to increase with at least eight new setts being found, although there were losses as well. No cubs were confirmed in Bedfordshire and whether this was the effect of the cold winter – just before cubs are born in February – or bad luck on the part of the watchers, I am not sure, for there was not a similar lack of cubs in other counties. The watching and mapping of Badger setts in Bedfordshire is undertaken by an increasing group of interested members and I am very grateful to them for their work. A few setts suffered from the results of blocking and being dug out, showing that the Badger is still persecuted in Bedfordshire in both direct and indirect ways.

The most surprising result of the winter has been the sighting during January and February of six or more part white Stoats, and one whole white animal. This winter coat condition – known as Ermine – has been observed in other counties as well, but not in the numbers we have recorded in Bedfordshire; a result I think of our better recording rather than colder temperatures. The Mammal Society *Handbook* states: "Ermine is recorded only in the northern part of the Stoat's range – Sweden and Norway. There is a transitional zone in the north of England and Scotland, while part white animals in the centre and south of the country are exceptional. Coat colour change is primarily controlled by day length, rather than temperature." As the Mammal Society's newsletter pointed out, either Stoats can't read, or research workers have got their results wrong!

Small mammal trapping run by a variety of people, together with general recording, produced good numbers of new tetrad records for Pygmy and Common Shrews, Bank and Short-tailed Voles, House and Wood Mice. However, no new records were obtained for Water Shrew or Water Vole – the latter species being the subject of a Mammal Society national survey as there is concern for its future. It is thought its numbers are declining due to water pollution, Water Board action and predation by Mink. Although no new sites were found, the Yellow-necked Mouse continued to be present in its two known sites.

Brown Hares, which are also thought to be in decline, were seen in fairly good numbers with Julian Knowles seeing 27 in nine different fields near Flitwick one day in April.

Mink continued to expand its range in Bedfordshire with three new records being obtained along the River Ouse, although there is a suggestion that it is also present in the centre of the county.

Muntjac Deer were recorded in six new tetrads, spread all over the county, while Fallow Deer had two new sites in the Woburn area. There was also an exciting but unconfirmed report of a Red or perhaps a Fallow Deer in the Houghton Regis area. More work will be done to follow up this sighting.

Overall for the year, 113 new tetrad records were obtained and 11 new 10 Km. square records, the latter being sent on to Monk's Wood for inclusion in the national Distribution Atlas. 97% of all the tetrads in the county now have one or more species recorded for them.

During the summer a light hearted competition was held to see which team of two people could see the most number of mammal species during a 24 hr. period in Bedfordshire. The winners were Rosemary Brind and John Green with six species, to whom go my congratulations, but the number shows that mammals can at times be hard to find on demand. Common species seen with another team were Rabbit and Grey Squirrel, but it took Rosemary and John six and a half hours before they saw a Rabbit and their total time in the field was 12½ hours, giving an average of only one species every two hours.

The new tetrad records for 1982 are listed below and 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, will give a full record of the distribution of the mammal species that have been found in Bedfordshire since 1970.

Hedgehog *Erinaceus europaeus* – 3 tetrads. 05V, 12FG.
 Mole *Talpa europaea* – 5 tetrads. 94TY, 04I, 12F, 15N.
 Common Shrew *Sorex araneus* – 6 tetrads. 93M, 95J, 01C, 05H, 12A, 13M.
 Pygmy Shrew *Sorex minutus* – 14 tetrads. 93M, 94KS, 95W, 01C, 02A, 03IJ, 04U, 05V, 13JM, 15AT.
 Bat – 3 tetrads. 92S, 05D, 15A.
 Daubenton's Bat *Myotis daubentoni* – 1 tetrad. 13Y.
 Common Long-eared Bat *Plecotus auritus* – 2 tetrads. 01D, 02U.
 Natterer's Bat *Myotis nattereri* – 1 tetrad. 02U.
 Pipistrelle Bat *Pipistrellus pipistrellus* – 2 tetrads. 92X, 02R.
 Rabbit *Oryctolagus cuniculus* – 1 tetrad. 94Y.
 Brown Hare *Lepus capensis* – 5 tetrads. 94S, 03K, 04J, 05D, 12C.
 Dormouse *Muscardinus avellanarius* – 1 tetrad. 01H.
 Bank Vole *Clethrionomys glareolus* – 5 tetrads. 93M, 96R, 03I, 13J, 15A.
 Short-tailed Vole *Microtus agrestis* – 6 tetrads. 92N, 94KZ, 96R, 02Z, 13M.
 House Mouse *Mus musculus* – 5 tetrads. 92S, 96R, 02X, 15A, 24G.
 Wood Mouse *Apodemus sylvaticus* – 10 tetrads. 94TZ, 95J, 01J, 02U, 03I, 05D, 13JM, 15A.
 Brown Rat *Rattus norvegicus* – 8 tetrads. 92Z, 94X, 96R, 02Q, 03J, 13T, 15B, 25K.
 Grey Squirrel *Sciurus carolinensis* – 5 tetrads. 94Y, 95M, 03K, 12C, 13U.
 Fox *Vulpes vulpes* – 5 tetrads. 91Y, 96R, 03F, 14L, 24D.
 Badger *Meles meles* – 2 tetrads. 01U, 03E.
 Mink *Mustela vison* – 3 tetrads. 15KL, 24D.
 Ferret *Mustela furo* – 3 tetrads. 11E, 15LS.
 Stoat *Mustela erminea* – 5 tetrads. 92B, 04U, 15K, 24D, 25K.
 Weasel *Mustela nivalis* – 3 tetrads. 02F, 03F, 15B.
 Chinese Water Deer *Hydropotes inermis* – 1 tetrad. 03U.
 Fallow Deer *Dama dama* – 2 tetrads. 93QR.
 Muntjac Deer *Muntiacus reevesi* – 6 tetrads. 94Y, 01N, 02F, 05UV, 24A.

REFERENCES

- ARNOLD H.R. 1978. *Provisional Atlas of the Mammals of the British Isles*. Natural Environment Research Council.
 CORBET G.B. and SOUTHERN H.N. 1977. *The Handbook of British Mammals*. Blackwell.

ACKNOWLEDGEMENTS

My thanks go to the 35 people listed below, six of whom are non-members, who contributed the county records, and without whom this report would be very thin indeed.
 D. Anderson, V. Arnold, C. Banks, R. Brind, C. Burton, B. Clutton, C. Dony, J. Dony, L. Evans, D. Grant, J. Green, S. Halton, B. Harding, D. Hillyard, G. Hooper, M. Hooper, B. Inns, J. Kemp-Gee, D. King, J. Knowles, D. Lawrence, B. Mills, T. Moxey, B. Nightingale, D. Odell, M. Rowland, L. Smith, B. Squires, B. Stephenson, A. Summerfield, C. Tack, T. Thomas, A. Tomczynski, P. Trodd, D. White.

ADDENDUM

In the 1981 Mammal Report printed in the *Bedfordshire Naturalist* 36 10-11, a line was omitted in the section on Bat hibernation sites and should have read:—
 "... one of which contained 5 bats and produced two new records. This work was repeated in 1982 with better results as another site had been discovered and, hopefully, an increased understanding of the techniques had been learned..."

DAVID ANDERSON

A SUMMARY OF DIVERS, GREBES, SWANS, GEESE AND DUCKS IN BEDFORDSHIRE 1946-1982

by P. Smith, The Old Coach House, Heath Lane, Aspley Heath,
Woburn Sands, Milton Keynes.

INTRODUCTION

Following previous papers on Birds of Prey (Smith, 1980) and Wading Birds (Nightingale and Smith, 1982) I decided to write a further paper to cover Divers, Grebes, Swans, Geese and Ducks recorded in the county.

Particular reference was made in the paper on Waders to the effect of changing habitats within the county on its bird life, especially wetland and water species. The extraction of minerals such as clay, sand and gravel have undoubtedly in the past provided valuable habitat for water loving birds. Unfortunately, with the current trend towards more leisure time some of these lakes are now being intensively used for activities such as fishing, yachting, water ski-ing, shooting, wind-surfing and power boat racing all of which cause considerable disturbance to water birds, both in and out of the breeding season.

During my research it was particularly noticeable that there has been a decline in the importance of some major habitats which were constantly referred to in 1950's and 1960's. Firstly Bedford Sewage Farm and Dunstable Sewage Works, because of modern sewage disposal methods and secondly Wyboston Gravel Pits and Stewartby Lake, due to disturbance by leisure activities.

The other major influences on water birds is, of course, the weather and it was noticeable that good years for records coincided with bad winters.

Fortunately most of the species under consideration are relatively easy to identify and often afford good views, particularly with the aid of a telescope. There can, of course, be confusion specially with winter plumage of Divers and Grebes, and the possibility of escaped birds also has to be taken into account with some species.

The total number of different species recorded during the period was 44, consisting of three divers, five grebes, three swans, eight geese and 25 ducks. Also included in this total are some species which were thought to be probable or possible escapes, and these are specifically referred to in the text.

The number of breeding species is not nearly as impressive with only a few breeding birds within the county, these consisting of two grebes, one swan, two geese and nine ducks.

SYSTEMATIC LIST

- Red-throated Diver *Gavia stellata*** A rare winter visitor with only 10 individual records. Recorded on the River Ouse near Kempston on the 22nd February, 1947 since then it was recorded in 1956, 1957, 1958, 1963, 1966, 1967, 1970 and 1979. Only two years recorded more than one bird and they were a "wreck" of three individuals in November 1958 and two individuals at Blunham Gravel Pits in January/February 1979. There are two interesting spring records, one in April 1966 and one in April/May 1967. All three species of diver recorded in Bedfordshire can be considered rare, but this one is the most likely to occur, which is in line with national distribution.
- Black-throated Diver *Gavia arctica*** Rare winter visitor with seven single birds recorded in seven different years. The first record was of an individual found in February 1946 on Southill L, it was subsequently recorded in 1947, 1954, 1957, 1960, 1966 and 1978. All records refer to the months of January or February apart from the 1947 record of a dead bird being recovered at Kempston Hardwick in March.
- Great Northern Diver *Gavia immer*** Extremely rare winter visitor with only two records making this easily the rarest of the three divers which have occurred in the county. The first

record is of a bird that arrived at Blue Lagoon Arlesey on the 26th November, 1977 (it was incorrectly recorded in the *Bedfordshire Naturalist* as being the first county record since 1947, but I could find no evidence of a Great Northern Diver being recorded in 1947 (I believe the reference refers to the Black-throated Diver already mentioned). The second record was at Stewartby L in January 1978.

Little Grebe *Tachybaptus ruficollis* A resident and regular breeding bird. Specific references to breeding success are only sporadically mentioned in the Journals with many records referring to "normal distribution". It was stated in 1971 that 22 pairs plus 20 individual adult birds were present in the breeding season. In 1973, 10 pairs raised at least 17 young and in 1974 there were 14 pairs but only one young raised. It is my opinion that this species is vastly under-recorded as a breeding bird and that a detailed survey would reveal many more pairs successfully nesting. In the *Bedfordshire Bird Atlas* it was confirmed as breeding in 29 out of the 53 tetrads in which it was recorded. More accurate information about its wintering status is available and the following records were interesting, 39 on Pools, Bedford SF 1954, 26 Barkers Lane GP 1960, 30 Stewartby L 1961, 28 Bedford SF/Barkers Lane GP 1967, 30 Blunham GP 1972 and 34 Blunham GP 1978.

Great Crested Grebe *Podiceps cristatus* A resident and regular bird being very susceptible to habitat change. Probably more than any other bird under review this species suffers from human disturbance, changes in water levels and weather conditions. In 1946, 11 breeding pairs were recorded and numbers in subsequent years have fluctuated in some cases probably due to under recording. There was a steady build up of breeding pairs during the 1950's, a remarkable peak in 1957 at Stewartby L when 20 nests were found, with 12 further successful breeding pairs at other localities in the same year. Unfortunately no pairs bred at Stewartby L in 1960 because of the rise in water levels. In 1967 40 pairs were recorded to have bred in the county, nine being at Stewartby L with a record of 97 birds present at the same location on the 29th August, followed by 118 birds in August 1968. It would appear that breeding throughout the 1970's varied from year to year, with 40 young being raised by 24 pairs in 1973, 35 young from 32 pairs in 1974, and during the B.T.O. Survey in 1975 105/119 adults were recorded although only 29 young reported. Breeding appears to have declined slightly during more recent years, but another full survey is needed to ascertain its exact status. The *Bedfordshire Bird Atlas* records breeding confirmed in 33 out of the 40 tetrads where the species was recorded as being present. The winter counts are interesting, the favourite wintering ground being Stewartby L with 98 in December 1976, 123 in January 1977, 200 (approx.) February 1978, 115 January 1979, 79 December 1981 and 90 January 1982.

Red-necked Grebe *Podiceps grisegena* Rare winter visitor, only eight proven records with a possible maximum of 10. First recorded at Arlesey CHP in January 1955, followed by two at Wyboston GP in December 1968. Single records for 1969 and 1972, followed by an influx during the severe weather in February 1979, with definitely two and possibly four records at different localities. The last record was at Barkers Lane GP in September 1981. With only eight definite records in 37 years, I am confident that more will be recorded within the next 37 years.

Slavonian Grebe *Podiceps auritus* Uncommon winter visitor, sometimes staying as late as April. This and the next species are notoriously difficult to separate in winter plumage and I have only included birds that were positively identified. There was a total of 18 records, 1976 being the outstanding year with three in August at Harrold GP and one in December at Wyboston GP. Of the 18 records, three were in January, two in February, four in April, three in August, one in September, two in October and three in December.

Black-necked Grebe *Podiceps nigricollis* A fairly regular winter visitor, sometimes staying until April. The first county record was of a bird on the River Ouse near the entrance to Bedford SF on the 9th March 1947, since then a total of 29 records have been accepted making this species more likely in the county than the former. Easily the most outstanding year was 1974 with eight birds all in summer plumage, with two pairs displaying at



Fig. 1. Great Crested Grebe at Stewarthy Clay Pits, May 1957 (Photo: P. Smith)

Blunham GP on the 18th April. It is strange that this species occurs more often in Bedfordshire when the former species is more numerous as a breeding bird in Scotland. Of the 29 records, three were recorded in February, five in March, 10 in April, one in August, five in September, one in October, one in November and three in December.

Mute Swan *Cygnus olor* A resident and regular breeding bird. This bird has only been irregularly recorded in detail as to its breeding success, there being no specific information for the years 1946-1950, 1958-1962, 1964-1972 and 1974-1979. It was, of course, present during these years and it is a pity that detailed breeding information is not available. In 1951 it was recorded as becoming very common, over 70 birds being reported on the River Ouse between Longholme Lake and Prebend Street Bridge, Bedford. During the B.T.O. Census in 1959, 37 pairs were located, but undoubtedly some were overlooked. The *Bedfordshire Bird Atlas* reports confirmed breeding in 47 out of the 66 tetrads where the species was recorded. Winter populations of about 100 birds recorded in 1957, 1963, 1973, lower numbers of 45, 37 and 47 being recorded in 1980, 1981 and 1982. The B.T.O. Census being carried out during 1983, will be most revealing as to the status in the county, as I believe there has been a serious decline in numbers in recent years.

Bewick's Swan *Cygnus columbianus* A regular winter visitor, first recorded in March 1951 with 16 at the Woburn Ponds, the second record was in 1956 with 15 flying above Pope's Meadow, Luton. The third account was in 1960 and since then the species has been recorded every year apart from 1982. Good numbers were recorded in the bad winters of 1962/1963 and also 1981. The highest counts being 40 (approx.) over Sandy Lodge in March 1971, 28 over the River Ouse Bedford 1970, 32 over the Lodge, Sandy, October 1974, and 17 Whipsnade Zoo January 1979.

Whooper Swan *Cygnus cygnus* An uncommon winter visitor, much rarer than the preceding species being recorded in only 11 years. The first record was of four on the River Ouse

near Bromham in February 1947, and it did not occur again until three were found at Wyboston GP September 1961. The bad winter of 1962/1963 produced a good crop of records, with 11 flying over Leighton Buzzard, 15 and seven over Bedford SF. Another good year was 1965 when 15 flew over Sandy Lodge, since when it was only sparsely recorded until six separate records occurred in 1981.

Bean Goose *Anser fabalis* Very rare winter visitor, being recorded in only three years 1978, 1979 and 1980, all records being referred to as of suspect origin. However, in 1978, the numbers of Bean Geese had been unusually high in Norfolk and it was thought that the single at Harrold GP was probably of captive origin but could possibly have been wild.

Pink-footed Goose *Anser brachyrhynchus* An uncommon winter visitor with a few records of genuine wild birds. The first genuine wild flock recorded was on meadows at Box End, Kempston during the winter 1948/49 with a maximum count of up to 40 in January 1949. The remaining records of genuine wild flocks are 38 Barkers Lane GP December 1953, 38 over Cardington January 1954, possibly the same birds as the previous year with 14 feeding on nearby marshy fields, two of which had blue identification rings. Three in January 1955 near Shefford, one of which was shot and found to be carrying a ring put on in Iceland in July 1953. There were then no records until a wild party of 21 occurred at Chimney Corner Pits in January 1979. All other reports were considered to be of birds of suspect origin.

White-fronted Goose *Anser albifrons* Becoming a regular winter visitor, being recorded in the last six consecutive years. The first record was of two at Bedford SF in January 1946, four birds were reported in the same locality in December 1948 and January 1949 (presumably the same birds). Apart from one doubtful record in 1955 there were no further reports until a flock of 70 was recorded at Bedford SF in January 1963. Further records are of 175 (approx.) over Wyboston GP in March 1967, 61 over Houghton Regis in December 1968, no large flocks then being recorded until 16 at Blunham GP January 1981, 17 over Dunstable SW January 1982 and finally 10 at Harrold GP December 1982. All these records were of obviously genuine wild birds, but there were also some records which were almost certainly escapes.

Greylag Goose *Anser anser* An increasing resident breeding bird with larger wintering flocks. Since the first record of a single wild bird being stalked at Radwell in April 1948, this species has rapidly established itself as a breeding bird with the help of introduced stock. The first breeding record was of two feral pairs rearing young at Girtford GP in 1971. Since 1971 records of breeding include 30 young from four pairs at Blunham GP in 1973, six young at Felpersham NR 1974, five young at Girtford GP in 1975, 13 young at Harrold GP 1976, 12 young Roxton GP, 16-18 young Harrold GP and 16 young Blunham GP all in 1979, a total of 124 young from four locations in 1980, a minimum of 34 young in 1981 and 118 in 1982. The *Bedfordshire Bird Atlas* reports breeding confirmed in nine out of the 17 tetrads where the species was recorded. An outstandingly high summer count was of 163 at Harrold/Radwell area in June 1981. Records outside the breeding season also confirm that the county's population is steadily increasing, 74 Blunham GP January 1975, 63 Harrold GP November 1977, 82 Roxton GP September 1978, 71 Roxton GP 1979, 150+ Harrold GP October 1980, 150+ in the Harrold/Radwell GP area 1981 and 201 in the Harrold/Radwell area 1982.

Snow Goose *Anser caerulescens* All records refer to birds of captive origin, the first record appearing in April 1971 with two flying over Brickhill, Bedford. Recorded in every year since 1977 with a maximum count of nine in 1982.

Canada Goose *Branta canadensis* A well-established resident breeding bird. First recorded with 10 flying over Elstow in July 1949, and then only sporadically with a high of 18 at Wyboston GP in April 1967. The first proven breeding record was at Luton Hoo in 1971, where a pair successfully reared three young. Since 1971 the species has rapidly spread over the county as a breeding bird, with 23 young recorded in 1975, 58 in 1977, 50 in 1978 and by this time the species was established as a breeding bird in eight different



Fig. 2. Battlesden Lake, man-made for shooting (Photo: P. Smith)

localities. From 1979 to 1982 established breeding has continued to increase steadily. The *Bedfordshire Bird Atlas* recorded confirmed breeding in 21 out of the 32 tetrads where the species was recorded. Wandering flocks outside the breeding season have been particularly impressive in recent years, although in some cases there may have been some duplication of recording. In 1976 it was thought that the population was in the region of 200, since then the growth has been as follows: 1977 – 223, 1978 – 300 (approx.), 1979 – 300+, 1980 – 500+. In 1981 a flock of 430 at Chimney Corner CLP was the single largest ever counted and in 1982 there was estimated to be up to 1,000 birds in the county.

Barnacle Goose *Branta leucopsis* A very rare winter visitor. Recorded in nine different years, it is my opinion that the only genuine record was of four wild birds flying over Bedford SF in the bad winter of 1962, the remaining records must be considered to be of suspect origin.

Brent Goose *Branta bernicla* An extremely rare winter visitor. The first record was of a single bird over Radwell GP and Harrold GP in February 1979. If this was a genuine wild bird, it was the first county record since 1893. It is less likely that Brent Geese are of suspect origin because they are less commonly kept in wildfowl collections. The next record was of one seen near Silsoe in December 1981 and the only other record was of almost certainly 18 genuine wild birds over Girtford GP in October 1982.

Egyptian Goose *Alopochen aegyptiacus* A possible rare wanderer, recorded in only two years. A maximum of three were at Harrold GP in January 1978 with two staying until February, followed by a single bird at Blunham GP in June 1979, followed by another at the same locality during September of 1979. All records must be considered to be of suspect origin, although there is a wild breeding population established in East Anglia.

Ruddy Shelduck *Tadorna ferruginea* Only one record of two escaped birds at Dunstable SF in April 1971.

- Shelduck** *Tadorna tadorna* A rare breeding bird, regularly seen on both spring and autumn passage with occasional wintering records. The first record is of one being seen at Woburn by the Duke of Bedford in spring 1946 and with the exception of 1947 and 1948 this species has been recorded every year since. The first breeding record was of one pair rearing young at Millbrook CLP in 1982, no more records of breeding were received until 1981, when one pair hatched five young, one of which reached maturity at a locality in the west of the county. It is my opinion that breeding at this locality had in fact taken place in the previous year, but had been overlooked, in any event successful breeding took place in 1972 with two pairs hatching eight young, three of which reached maturity. The species is a regular passage migrant being recorded more often in the spring than in the autumn, but mostly in twos and threes with a maximum of six at any one time. There are also several records of birds over wintering.
- Wood Duck** *Aix sponsa* All records are of tame birds, the first being a female on the River Ouse at Bedford in January 1973 to spring 1974. Two further occurrences both at Shuttleworth College Lakes, two in November 1980 and three males and two females in 1981.
- Mandarin Duck** *Aix galericulata* A possible annual breeding bird. First recorded at Battlesden Lake in September 1967, and then not again until 1972 with a pair on the canal at Linslade, plus two drakes and four ducks on Bison Lake, Woburn Park. From 1972 onwards it has been recorded in varying numbers every year. Records of breeding are rather sporadic, the first definite record being of five ducklings from a clutch of 10 eggs at the Linslade site in 1973. The next specific reference to breeding was of two broods in 1977 on the River Ivel at Blunham, where it was reported they had bred in the previous three years. In 1978, nine young were produced from Woburn and Eversholt Lakes, there was however no confirmed breeding in either 1979 or 1980. Breeding was again confirmed in 1981 at Eversholt L with a total of 18 young, but again no confirmed breeding in 1982. There are a few records of birds outside the breeding season, notably a drake shot at Maulden in December 1975 and from five locations in 1979, with the added comment that "the Bedfordshire population remained low". In 1980 three at Harrold GP and a pair at Sandy and finally six were present at Harrold GP in November 1982.
- Wigeon** *Anas penelope* A regular winter visitor. The birds begin to arrive during October and the majority have left by the end of the following March. The size of wintering flocks varies greatly from year to year, but the first record was of 150 at Bedford SF in January 1946, since then good years were as follows: 200 (approx.) at Kempston Hardwick in 1949, 120 (approx.) Eastwoods CLP February 1956, 190 at Stewartby L January 1961, 150 Stewartby L January 1962, 230 Stewartby L January 1969 (The Wildfowl Trust reported that this was a record year for Wigeon numbers). 133 Harrold GP February 1975, 142 Harrold GP January 1977, 120 Harrold GP February 1978, 500 (approx.) from Radwell/Harrold GP and Melchbourne January 1979, 242 Blunham GP and 115 Harrold GP January 1980, 120 Harrold GP January and 221 Barkers Lane GP in December 1981, and finally 170+ Radwell GP January and 217 Barkers Lane GP February 1982. There were two good summer records of pairs at Brogborough CLP June and at Dunstable SF July 1973.
- Gadwall** *Anas strepera* A regular winter visitor with increasingly large numbers being recorded. Has bred twice in the county. Early records refer mainly to the Woburn area and were considered to be of probable suspect origin. Records can be considered to have started in 1958 and have continued almost annually ever since. The wintering population has increased dramatically in recent years. The rise to the present day wintering numbers was first indicated by an increase in records from 1977 onwards. 18 Blunham GP February 1978, 26 Blunham GP December 1979, 55 January and 121 December Blunham GP 1980, 123 January and 133 November Blunham GP with 81 at Barkers Lane GP in December 1981 and finally 121 at Blunham GP in December with 50 at Barkers Lane GP in February 1982. In May 1978 a pair were thought to be prospecting for a nest site at Girtford GP and in the following year the first breeding record occurred when a pair raised three young at Luton Hoo Lake. Breeding did not occur again until

1982 when a pair with 10 young was seen at Girtford GP.

Teal *Anas crecca* Almost exclusively a winter visitor, rarely proved breeding but with summer records in several years. Winter records vary often according to weather conditions and the availability of suitable habitat. In January 1946, 500 were recorded at Bedford SF and from then on winter counts vary from between 200-500 at selected localities throughout the county, with no discernible trends, Bedford SF and Barkers Lane GP often recording the highest annual numbers. Exceptional years were: 450 (approx.) Bedford SF/Barkers Lane GP November 1961, 350 Wyboston GP December 1968 together with a total of 587 from the wildfowl counts in selected localities, 200 Bedford SF January 1978, 166 Southill Lake November 1979 and a total of 647 from Bedford SF, Radwell GP and Barkers Lane GP January 1982. The *Bedfordshire Bird Atlas* reports in error that the first suspected breeding record was of a pair at Palmers Shrubs Eversholt in April 1958. There is an earlier record of a duck teal being seen with young at Felmersham NR in 1952. A pair was recorded in the breeding season at Brogborough CLP in July 1974 and finally a remarkable record of a female being flushed from a nest with nine eggs at Chicksands Woods in 1977.

Mallard *Anas platyrhynchos* By far the most common breeding and wintering duck. It has been reported that wintering numbers have been declining during recent years and the following is an analysis of the wildfowl counts on selected locations carried out since 1968, showing the month, year and maximum number.

Dec. 1968	1254	Dec. 1973	1371	Oct. 1978	2453
Oct. 1969	2280	Dec. 1974	1518	Sept. 1979	1804
Dec. 1970	1971	Oct. 1975	1395	Oct. 1980	1444
Nov. 1971	1455	Jan. 1976	1653	Nov. 1981	1467
Oct. 1972	1421	Oct. 1977	2306	Sept. 1982	1774

It must be stressed that these figures are only an indication of trends as they cover varying localities throughout the period and numbers outside the areas recorded would have to be added to get any idea of the total at any one time. Records prior to 1968 included 1200 Stewartby L November 1960, 1500 Stewartby L January 1961, 2,000 (approx.) Stewartby L December 1963, 1200 (approx.) Stewartby L October 1966, and 2,500 in the Clay Basin area October 1967. The *Bedfordshire Bird Atlas* recorded confirmed breeding in 131 of the 219 tetrads where the species was recorded.

Pintail *Anas acuta* An uncommon but regular winter visitor, arriving during October and leaving by the end of March. A total of nine birds were recorded in 1946 and since then it has mainly occurred in small wintering parties. Outstanding occurrences were eight Stewartby L December 1950, 14 Stewartby L December 1960, 22-24 Stewartby L February 1961 and 12 Stewartby L January 1962. 1963 was an outstanding year with 17 at Wyboston GP and 29 at Bedford SF on the 10th January and a week later 12 counted at Stewartby L, 10 Wyboston GP March 1969 and 100 (approx.) over Melchbourne January 1979. 1980 was another good year with 13 birds recorded from four different localities, 25 flying over Blunham March 1981 and 14 Fenlake Meadows March 1982 and on the same day six over Coronation CLP. The Pintail has never been recorded breeding in the county.

Garganey *Anas querquedula* An almost regular but scarce passage bird mainly recorded in the spring. Recorded virtually every year with exceptions in 1949, 1960, 1977, 1979 and 1980. Was proven to have bred once. The majority of birds recorded are in the spring rather than in the autumn, one unusual record was of a pair at Kempston Hardwick in December 1946 (must be suspect). High numbers were recorded in the following years, six Bedford SF April 1948, 12 Luton Hoo August 1955, 1959, an exceptional year for England and Wales, with a maximum of 12 during the spring, but none in the autumn, eight-10 Stanford GP September 1961, six (max.) Wyboston GP August/September 1968, five Stagsden August/September 1971, a total of nine birds for the year 1981 and

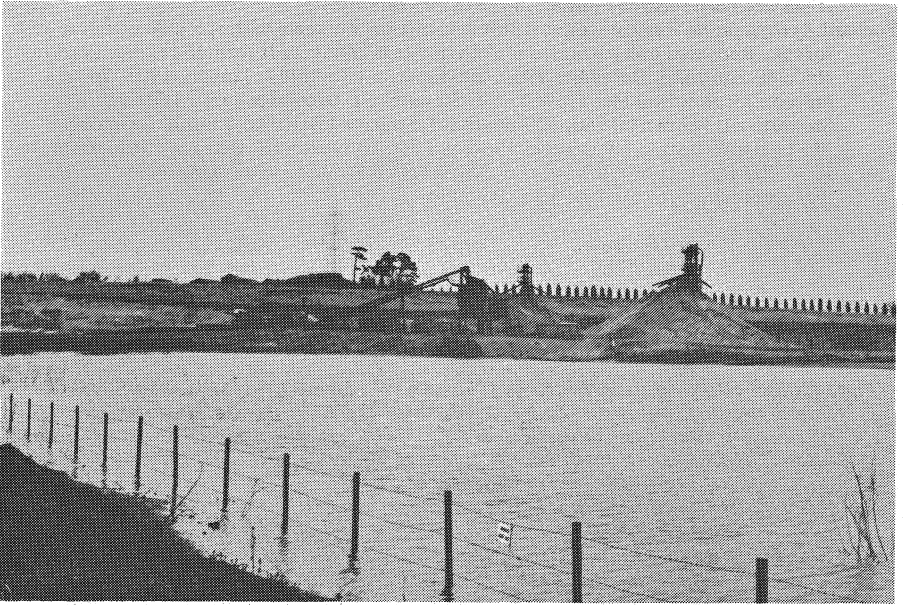


Fig. 3. Grovebury Road Pits, Leighton Buzzard, a typical sand pit (Photo: P. Smith)

in 1982 a possible 11, showing an encouraging trend in the last two years. The first attempt at breeding was recorded in 1948, when a nest containing well incubated eggs was found and photographed at Bedford SF, unfortunately the nest was destroyed, probably by cattle. The only further reference to breeding was on the 28th May 1953 when adults were seen swimming on the river with eight ducklings at Bedford SF.

Shoveler *Anas clypeata* Mainly a winter visitor, rare as a breeding bird. There have been records for every year with a marked increase in numbers during the last 15 years, as opposed to the former years when annual numbers seldom exceeded 10. Records worthy of mention are 10 Blunham GP May 1972, 17 Eversholt/Battlesden Lakes November 1973, 33 Dunstable SF August 1975 and November in the same year 19 at Southill L, 35 Southill L with 67 at Dunstable SF in November 1976, 29 Dunstable SF January 1977 with 40 at Blunham GP during December, 70 Dunstable SF September 1978, 70 Dunstable SF November 1979, 63 Dunstable SF August/September 1980, 92 Dunstable SF September, 52 Brogborough CLP November, and 50 Barkers Lane GP December in 1981. In 1982 slightly lower numbers with a maximum of 48 in September at Dunstable SF. The first breeding record was in 1948, when a female was seen with a juvenile that could only just fly at Bedford SF. The next was 1964, when a pair brought off six young at Southill L, 1965 again a pair reared six young at Southill L, 1967 a suspected family party of eight birds was seen at Dunstable SF, 1971 a duck with five young at Harrold GP, 1973 pairs at Sandy SF with four to five young and at Luton Hoo with 12 young, 1974 juvenile seen at Girtford GP, 1978 a pair with six young at Luton Hoo and 1982 a pair bred at Girtford GP.

Red-crested Pochard *Netta rufina* All records must now be considered to be of suspect origin. The first was recorded at Wyboston GP in March 1972 the next at the same locality in January 1974 and then in consecutive years at Blunham GP between 1976 and 1980.

It has not been recorded during the last two years.

Pochard *Aythya ferina* Regular winter visitor in increasing numbers with sporadic breeding success. Recorded every year from 1948 onwards and records from the earlier years include 89 Southill L December 1950, 200 (approx.) Southill L January 1951, 70 (approx.) Luton Hoo March 1955, 230 Stewartby L December 1957, 150 (max.) Stewartby L February 1960, 120 Southill L January 1961, 110 Southill L October 1963, 210 Wyboston GP October 1966 and 340 Wyboston GP October 1967. From 1968 onwards regular wildfowl counts at selected localities were carried out and the highest numbers for each year was as follows:

Jan. 1968	564	Oct. 1973	386	Oct. 1978	498
Nov. 1969	266	Dec. 1974	318	Jan. 1979	440
Feb. 1970	230	Dec. 1975	437	Nov. 1980	522
Nov. 1971	215	Jan. 1976	427	Feb. 1981	700
Dec. 1972	297	Dec. 1977	387	Nov. 1982	514

I have adjusted the above figures in 1977 and 1979 to include the Blunham GP numbers. Proved breeding with young being seen was recorded in 21 years, the favourite localities being Luton Hoo L, where six pairs raised 35 young in 1959, and Battlesden L, Southill Park L, Barkers Lane GP and Brogborough CLP. Luton Hoo L remained the most popular breeding ground throughout the period.

Ring-necked Duck *Aythya collaris* An extremely rare vagrant from North America with a total of three records. The first county record was deservedly found by one of Bedfordshire's longest serving bird watchers, A.J. Livett, at Luton Hoo L on the 16th April, 1972 (unfortunately he did not tell me about it at the time!). This bird was a drake and the record was accepted by the Rarities Committee of *British Birds*. The second and third records both drakes were found in 1979, the first being from the 19th-24th February at Wyboston GP and the second on the 27th March at Blunham GP.

Ferruginous Duck *Aythya nyroca* An extremely rare winter visitor with only four records. The first record this century was of an immature male at Kempston Hardwick Pool on the 4th December 1948, this bird was stalked at fairly close range and full field notes taken. The county then had to wait another 31 years before it was recorded again on 20th February 1979 at Wyboston GP, then in 1980 two drakes were recorded at Blunham GP, one staying into 1981.

Tufted Duck *Aythya fuligula* A resident species breeding annually with sizeable wintering flocks. The size of these have gradually increased, although there are some notable records from earlier years 100 (approx.) Southill L December 1956, 100 (approx.) Stewartby L December 1960, 100 Stewartby L January 1962, 135 Felmersham NR February 1963 and 160+ Stewartby L January 1964, 150 Wyboston GP in November and a record single count in December of 450 at Stewartby L 1967, 200 (approx.) at Wyboston GP, 375 (approx.) Stewartby L and 49 at Luton Hoo 1968. For the following years, I have taken the figures from the annual wildfowl counts from the selected localities, but once again these do not represent all the birds in the county at that particular time.

Feb. 1969	300	Jan. 1974	542	Feb. 1979	590
Feb. 1970	479	Dec. 1975	424	Jan. 1980	379
Dec. 1971	338	Jan. 1976	586	Nov. 1981	589
Dec. 1972	654	Dec. 1977	468	Jan. 1982	318

I have adjusted the figures where possible to give a more accurate account. As a breeding bird it has been recorded as having bred, seen with young or assumed to have bred in virtually every year throughout the period, peaking from 1956 onwards but showing some decline since 1980. The following records give an indication of breeding success, 1957



Fig. 4. Vicarage Farm Clay Pit in ideal condition for water birds to breed (Photo: P. Smith)

nine pairs, 1963 14 pairs, 1967, 1968, 1969 and 1970 young were seen at most of the 16 likely locations. In 1971 13 pairs raised 50 young, 1973 17 broods totalling 81 young, 1974 55 young, a decrease of 26 from the previous year, 1975 80 young, 1976 83 young, 1978 19+ broods raised, 1979 12 broods raised, 1980 young at nine sites, 1981 young at six sites and 1982 young at only four sites.

Scaup *Aythya marila* A rare winter visitor with one unusual record of a drake at Harrold GP in August 1976. Only recorded in eight separate years, the last being in 1976. A total of 16 individual birds, the best year being in February 1957 with four at Southill L. It is surprising that there are not more records, but it is possible that females are being overlooked.

Eider *Somateria mollissima* An extremely rare winter visitor with the first and only county record being of an immature drake which stayed at Brogborough CLP from the 8th to the 11th December 1982.

Long-tailed Duck *Clangula hyemalis* A rare winter visitor, the first record being of an immature drake at Stewartby L in November 1957 which stayed on until April 1958. There are a total of nine records of which four were recorded in the exceptional year of 1982. It is interesting to note that all the records apart from one at Barkers Lane GP and one shot at Radwell GP both in 1982 were from either Brogborough CLP or Stewartby L, records range from October to April.

Common Scoter *Melanitta nigra* A fairly regular winter visitor recorded in 16 years occurring mainly in the spring. It is significant that out of the 42 individual birds recorded no less than 28 were reported during April and this observation was conveniently enhanced when during writing this paper, the writer, when visiting Brogborough CLP to take a photograph saw two males and one female on the 4th April 1983. There were three out-

standing summer records, July 1956 male at Bedford SF., July/August 1964 two females at Tiddenfoot Pit Leighton Buzzard and June 1981 five at Stewartby L. No records were received for the years between 1966 and 1976.

Goldeneye *Bucephala clangula* A regular and almost common winter visitor recorded in every year except 1950. The majority of birds arrive during late November/December with numbers gradually building up to maximum counts in January/February and then gradually tailing off and leaving by the end of April/early May. There are some exceptions and it would appear that from earlier years the peak months were March and April. It is apparent that wintering numbers do fluctuate but the general trend is an apparent increase from the late 1960's onwards. The following are some of the more exceptional years: 18 Stewartby L April 1968, 14 Stewartby L January 1969, 13 Stewartby L April 1975, 11 Blunham GP March 1977, 11 Blunham GP January 1978, 11 Blunham GP December 1980, 11+ Harrold GP November 1981, and an excellent year in 1982 with 18 in January at Radwell, 14 at Brogbrough in February and 11 at Harrold GP in March.

Smew *Mergus albellus* A rare winter visitor with the vast majority of records occurring in January and February. There was a total of 85 individual birds recorded during the period, the most outstanding feature being that 70 of these were recorded in the period 1946 to 1970. Since 1970 there have only been 15 individual birds recorded in five different years, those being 1971, 1976, 1978, 1979 and 1982. Outstanding years were three males and nine females on the River Ouse at Bedford SF plus four others in different localities February 1954, nine all from Stewartby L 1957, six females plus one male on the river at Bedford SF January 1963 and in 1976 with three females on the River Ivel and two further birds at Harrold GP.

Red-breasted Merganser *Mergus serrator* A rare winter visitor. This is the least common of the sawbills to occur with a total of only 43 individuals being recorded. The single outstanding year was in 1979 when 19 records were received, including three pairs in February at Radwell GP. The only other year worthy of note was in January 1963 with four at Bedford SF and one at Stewartby L. No other year exceeded three records.

Goosander *Mergus merganser* A regular winter visitor recorded in every year since 1967. By far the most common sawbill to occur with over 150 individual records excluding an almost certain 26 at Stewartby L in 1959. Exceptional years were nine in January at Wyboston GP and nine in February at Bedford SF in 1963, 25 from different localities in 1970, a peak of 30 at Blunham GP in January 1979 and good numbers from many localities in 1981 and 1982.

Ruddy Duck *Oxyura jamaicensis* Recorded for the first time in 1980 and has occurred in both years since. The first county record was a duck seen at Barkers Lane GP on 12th December 1980. In 1981 eight released singles were at Blunham GP and away from this location singles were recorded at Barkers Lane GP, Tiddenfoot GP Leighton Buzzard, Radwell GP and Brogborough CLP and in 1982 singles at Barkers Lane GP, Dunstable SF, Southill L and Radwell GP. It is hoped that this species will spread throughout the county and establish itself as a breeding bird.

ABBREVIATIONS

CHP – Chalk Pit, CLP – Clay Pit, GP – Gravel Pit, L – Lake, NR – Nature Reserve, SF – Sewage Farm.

REFERENCES

- B.N.H.S. 1947-1981 *Bedfordshire Naturalist* 1 to 36. Bedfordshire Natural History Society.
HARDING, B.D. 1979 *Bedfordshire Bird Atlas*. Bedfordshire Natural History Society.
NIGHTINGALE, B. and SMITH, P. 1982. A summary of the wading birds recorded in Bedfordshire 1946-1981. *Bedf. Nat.* 36 12-22.
SMITH, P. 1980. A summary of birds of prey in Bedfordshire 1946-1979. *Bedf. Nat.* 34 29-33.

BIRDS

Report of the Recorder

INTRODUCTION

The year opened with some severe weather and with it birds we normally only associate with such conditions. Smew, Goosander, White-fronted Geese, and Whooper Swan were among those which appeared. Perhaps the best of all was a Bittern seen flying over Ampthill Park on 3rd January and later found at Stewartby Lake; a Bearded Tit was found at the same site on the 8th. However the most unusual event was an unprecedented number of Oystercatchers on 2nd January, with 21 at Grovebury Sand Pit, six at Blunham and one over Warden Lodge.

In early spring long-staying Garganey pleased many observers, whilst wader passage got off to an interesting start with Black-tailed Godwits at Radwell and Barkers Lane. Amongst the migrant Meadow Pipits at Barkers Lane patient watchers found three Rock Pipits and a Water Pipit. The main spring passage accelerated in April with arrivals of Hoopoe, Blue-headed Wag-tails, Turnstone, the now regular Little Gulls, Ring Ouzels and even Kittiwakes which are starting to show annually. A bird enjoyed by several people was a superb Firecrest found in Biggleswade in mid-month.

May was exceptional for wading species, the highlight being a Dotterel near Biggleswade on the 12th, but it was unfortunately gone by the next day. However the rare trio of Tem-minck's Stint, Knot and Sanderling at Girtford were appreciated by a large audience.

Movement by June had, as expected, slowed with species getting down to the serious business of breeding. Once again Shelducks were successful and Black Redstarts were proved to breed in the county for the first time since 1974, raising four young. However both Little Ringed and Ringed Plovers had a disastrous time caused by a combination of unsuitable habitat and human disturbance. Nightjars similarly had a dismal year and were virtually absent, but on the brighter side Common Terns fared better with at least five pairs raising young. Of the commoner species it was evident that many of the ground feeders had suffered during the winter, and Skylarks, Song Thrushes, Dunnocks and Robins were all down in number.

Although Golden Oriole and Little Terns had appeared in June to quicken the pulse the autumn passage was disappointing, particularly after the bounties of spring. Some expected species were entirely absent, and although a few Wood Sandpipers passed through, together with Whimbrel, Black-tailed Godwits and Grey Plover, conditions were generally unsuitable. During September a Black-necked Grebe was found at Radwell, and Sandwich Terns appeared at Stewartby Lake and Barkers Lane, whilst at this last site in October five Grey Plovers were found. A group of 18 Brent Geese flew over Girtford on 18th October and on the 23rd a Long-tailed Duck was shot at Radwell. This was followed by another at Barkers Lane and two more at Stewartby, all of which stayed into 1983.

At the end of October Great Grey Shrikes appeared at Bromham and Brogborough and an influx of Short-eared Owls was becoming apparent whilst November heralded a number of sightings of Hen Harrier, with at least three different birds staying into 1983. It had been a good year generally for raptors with a Honey Buzzard over Shillington and a Marsh Harrier at The Lodge, Sandy in May, and a Merlin at Stanbridgeford in December. Hobbies had a successful breeding season with one pair raising young and another three pairs seen displaying. A Red Kite, a rare vagrant, had appeared near Clapham in January, with a probable near Leighton Buzzard in February, whilst another drifted over Greenfield in May. It was presumably the same bird as the one seen near Old Warden six days later. Intriguingly two "buzzards" reported by a gamekeeper from October onwards near Exeter Wood were probably Rough-legged Buzzards as one was seen there for several weeks in the first part of 1983, but that is another story.

1982 then was an exciting year in which an all time high of 174 full species were recorded, many of them unusual, and remarkably two new species were added to the County List. The first, and long awaited, was a Mediterranean Gull found in Luton in February, and the second, and totally unexpected, was an Eider found at Brogborough in December. They

brought the county total to 260 species.

Another record, if it were known, would have been the number of observer hours spent in the field during 1982, with the emphasis of attention switching from Harrold and Radwell to Barkers Lane, a locality which tends to dominate throughout the species list. My thanks go to those observers who were as follows:—

P.H. Addington, R. Arif, V. Arnold, E.J. Bailey, D.H. Ball, Miss R. Brind, C.W. Burton, B. Camp, R. Catchpole, M. Chandler, A.H. Chapman, T.D. Charlton (TDC), J.S. Coot, I.K. Dawson, W.H. Drayton, R. Dumbleton, L. Evans, W.H. Gerrard, Mr & Mrs G. Goodall, D. Green, M. Green, D.W. Guntrip, S.F. Halton, L.S. Hazzard, J.G. Headon, A. Henry, R.J. Henry, Mrs P. Hooper, R.A. Hume, B.M. Inns, Mrs S. Irvine, P. Jarman, J.G. Jarvis, I. Kelly, D.J. King, J.P. Knowles, D. Kramer, D.P. Lawrence, A.J. Livett, A. Long, J.P. Lynch, E.C. Newman, (B. Nightingale), J. Niles, D.J. Odell, R.L. Odell, P. Oldfield, Miss A. Packwood, M.J. Palmer, T. Peterkin, Mrs. L. Phoenix, S.J. Roddis, J.K.C. Sharrock, Dr. J.T.R. Sharrock, P. Smith, B.R. Squires, C. Tack, N.R. Terry, J. Tirrell (JT), A. Tomczynski, Mrs J. Toomer, T. Travis, P. Trodd, J. Turner (JTU), A. Vaughan, C. Ward, J. Ward (JW), R. Webb, K. Weedon, P.J. Wilkinson, J. Williams (JWi), M. Williams, S.G. Williams, T. Willson, D.S. Woodhead, Young Ornithologists Club.

SYSTEMATIC LIST FOR 1982

Species recorded in Bedfordshire during 1982 in usual numbers and not included in the systematic list are:— Little Grebe, Red-legged Partridge, Grey Partridge, Pheasant, Moorhen, Black-headed Gull, Common Gull, Lesser Black-backed Gull, Stock Dove, Woodpigeon, Little Owl, Tawny Owl, Green Woodpecker, Great Spotted Woodpecker, Lesser Spotted Woodpecker, Skylark, Wren, Dunnock, Robin, Blackbird, Song Thrush, Mistle Thrush, Goldcrest, Long-tailed Tit, Marsh Tit, Willow Tit, Coal Tit, Blue Tit, Great Tit, Nuthatch, Treecreeper, Jay, Rook, Carrion Crow, House Sparrow, Tree Sparrow, Chaffinch, Goldfinch, Linnet, Redpoll, Bullfinch, Reed Bunting.

English and scientific names follow the '*British Birds' List of Birds of the Western Palearctic* (1978).

The following abbreviations are used in the text:— CHP = Chalk Pit; CLP = Clay Pit; GP = Gravel Pit; L = Lake; R = River; SP = Sand Pit; SW = Sewage Works.

Great Crested Grebe *Podiceps cristatus* During the breeding season young were seen at eight sites with probably 12 pairs involved. Breeding was attempted at another three sites. The largest gatherings were noted during January with 90 at Stewartby L on 10th.

Black-necked Grebe *P. nigricollis* Singles Barkers Lane GP 28th August (MJP) and Radwell GP 12th September (DHB, DSW).

Cormorant *Phalacrocorax carbo* Seen in every month except March, June and July and most frequently in April/May and September/October. Noteworthy were seven over Whipsnade on 14th April, eight over Barkers Lane GP 22nd October and eight over The Lodge, Sandy 2nd October.

Bittern *Botaurus stellaris* One seen flying over Ampthill Park 3rd January was seen later the same day at Stewartby L (DHB, SI).

Grey Heron *Ardea cinerea* At Southill L six nests were occupied, two probably and two possibly, with two further nests unoccupied. Four nests were occupied in Luton Hoo. No reports from Bromham and this needs following up.

Mute Swan *Cygnus olor* Breeding records from Dunstable SW, Girtford GP, Langford GP, Old Linslade, Roxton GP, Stewartby L, Three Arches GP. In October 17 adults and eight juveniles were recorded on R. Ouse between Cardington and Kempston Church End. The largest winter count was 47 at Barkers Lane GP 16th January.

Whooper Swan *C. cygnus* Four released birds were present at Blunham GP throughout the year. In addition two were seen there 24th and 31st January, and singles on 23rd March and 30th December, no doubt attracted down by the feral birds (JTRS). Elsewhere one was

seen at Barkers Lane GP 5th January (DK).

Pink-footed Goose *Anser brachyrhynchus* A single was seen with Greylags at Blunham GP 11th January (MJP).

White-fronted Goose *A. albifrons* A flock of 17 flew NW over Dunstable SW on 22nd January (LE). At the end of the year a flock of ten arrived at Harrold GP 4th December, staying in the Harrold/Radwell area until 20th, although a record of ten flying over Langford GP on 13th May refer to the same birds. (DSW et al, RW). A single was seen at Barkers Lane GP 6th – 7th December (DK). Two in Woburn L on 11th December may have been escapes.

Greylag Goose *A. anser* About ten pairs raised 54 young in the Harrold/Felmersham area. Three pairs hatched 15 young at Blunham and at Roxton GP seven pairs hatched 49. The highest numbers were, as usual, in the Radwell/Harrold area with up to 120 in the first winter period and then a maximum of 201 on 12th December. Smaller numbers from seven other localities.

Snow Goose *A. caerulescens* Single feral birds were seen at Harrold GP in January, Radwell GP in April and Brogborough CLP in September. During October six, including a blue phase bird, frequented Harrold GP.

Canada Goose *Branta canadensis* Breeding noted at the following sites: Battlesden L two pairs, two young; Brogborough CLP one pair, three young; Elstow CLP one pair on nest; Harrold GP eight pairs, 41 young; Langford area five pairs, success not known; Three Arches GP two pairs, 14 young. Several large flocks were counted during the year at many localities the most impressive being 357 at Brogborough CLP in September, 234 Barkers Lane GP and 211 Stewartby L in January, 365 Luton Hoo and 200+ Harrold GP in October, these numbers obviously involving some local movement.

Barnacle Goose *B. leucopsis* Up to five were seen irregularly at Harrold/Radwell from 29th August to the year end (DSW), and one was seen at Blunham GP 30th – 31st December (JKCS). Another was present at Luton Hoo from November to the year end (LE).

Brent Goose *B. bernicla* 18 flew SW from Girtford GP 23rd October (ECN). Two flocks of 18 and 16 were seen in Cams. in the same period.

Shelduck *Tadorna tadorna* Breeding took place at the same site as in 1981 with two pairs hatching eight young, with at least three fledging. Pairs were seen at two other sites briefly in the spring. On passage most widespread in May with a total of nine birds at four sites, in September nine birds at three sites and in December with eight birds at five sites.

Mandarin Aix *galericulata* No breeding reports this year although four ducks were seen at Eversholt L 9th August. Most frequently seen on the Woburn Lakes with the highest count of 14 on 7th February. Elsewhere singles at The Lodge, Sandy on 29th September, Rushmere Park 31st October and two at Grovebury SP 14th November. On 29th August 12 appeared at Harrold GP, reducing to two, and then last seen 17th November when six were present.

Wigeon *Anas penelope* Radwell GP attracted the most regular flocks in both winter periods with a maximum of 170+ on 23rd January and then 85 on 26th December. Impressive numbers elsewhere include 178 at Barkers Lane GP on 10th January and 217 there on 16th February, and in the second winter period, when numbers were lower, 90 on 18th October. The last departure in spring were two at Barkers Lane GP 3rd May and the first to return were six at Harrold GP on 9th September. Flocks seen at seven other localities, usually of less than 15.

Gadwall *A. strepera* Breeding took place at or near Girtford GP: a duck with a brood of ten was seen on 16th May.

The winter distribution was similar to previous years with the highest numbers at Blunham GP with November maximum of 74 and December maximum of 121. The only other large numbers were at Barkers Lane GP in the early part of the year with highs of 40 in January and 50 in February. Counts from nine other sites with no flock exceeding 25.

Teal *A. crecca* Wildfowl counts continued at selected waters on specific dates during the winter months. The totals are detailed below and elsewhere for the species concerned.

	JAN	FEB	MAR	SEPT	OCT	NOV	DEC
Total	381	97	272	99	164	243	149

Numbers higher than average January – March but lower in the second half of the winter.

Notable counts as follows: 200 Bedford SW 3rd January; 220 Radwell GP 23rd January; 227 Barkers Lane GP 30th January; 200 Fenlake 14th March and 119 Barkers Lane GP 13th November.

Mallard *A. platyrhynchos*

	JAN	FEB	MAR	SEPT	OCT	NOV	DEC
Total	1550	601	124	1774	1405	715	1142

Better than recent average during January, September and October. Counts in excess of 400 were 400+ 30th January, 500+ 28th August, 736 12th September all at Harrold GP and 418 11th December Southill L.

Pintail *A. acuta* Following 1981 another good year with records too numerous to list individually. In the first winter period the maximum was 14 feeding on flooded meadows at Fenlake and six over Coronation CLP all on 14th March. Earlier in January records received from Stewartby L, Blunham GP and Radwell GP. In the second winter period records were mainly of single birds, from Barkers Lane GP (two dates) Houghton Regis CHP and Harrold GP (three dates), The Lodge Sandy, Radwell GP (two dates) and Blunham GP.

Garganey *A. querquedula* A drake was found on flooded meadows, Fenlake on 22nd March (MJP). A pair then stayed at Barkers Lane GP from 27th March until 20th April (SGW et al). At Houghton Regis CHP/Dunstable SW a pair stayed from 29th March to 9th April (NRT et al), a single 27th – 28th June (CT) and lastly five on 8th August with one remaining until 10th (AT).

Shoveler *A. clypeata* A pair bred at Girtford GP and another at Dunstable SW. Numbers were lower than in recent years with a peak of 100 Dunstable SW on 7th September. Records from 12 other sites, but apart from 20 at Brogborough CLP on 26th September, rarely more than ten.

Shoveler X Gadwall X *Anas* A bird showing characteristics of both species was seen at Girtford GP 21st April and again 24th May.

Pochard *Aythya ferina*

	JAN	FEB	MAR	SEPT	OCT	NOV	DEC
Total	157	219	125	155	411	514	408

Numbers low in January due to severe weather. Winter maxima were seen at Barkers Lane GP with 200+ frequently during November and December, with a peak of 250 on 27th November, and also Blunham GP with 188 on 7th November. In the first winter period 122 were counted at Barkers Lane GP on 6th February. These two localities were the only sites to consistently hold over 100.

Tufted Duck *A. fuligula*

	JAN	FEB	MAR	SEPT	OCT	NOV	DEC
Total	318	295	314	135	153	268	250

Numbers were well down throughout the year, with only the following flocks over 100 birds; 120+ Harrold GP 14th August; 123 Blunham GP 9th November and 108 there on



Fig. 1. Eider at Brogborough Clay Pit, December 1982 (Photo: M. J. Palmer)

6th December. Breeding records only from Stewartby L, Luton Hoo, Brogborough CLP and Battlesden L.

Eider *Somateria mollissima* An immature drake which stayed at Brogborough CLP from 8th to 11th December was the first county record (DHB et al).

Long-tailed Duck *Clangula hyemalis* Excellent year with singles appearing at both Barkers Lane GP and Stewartby L on 7th November (MJP, MG et al) with a second bird arriving at Stewartby L on 11th December. All three stayed into 1983. Earlier one less fortunate was found shot at Radwell GP on 23rd October (per JW).

Goldeneye *Bucephala clangula* Records from ten sites; most widespread during January and February. Peak numbers included 18 at Radwell GP 23rd January, 14 at Brogborough CLP 14th February and 11 at Harrold GP 7th March. Away from these three areas flocks were of generally less than five. Numbers at Blunham GP were confused by the presence of feral birds and have been excluded from this summary.

Smew *Mergus albellus* Two at Radwell GP 23rd – 24th January and a single on the last date at Barkers Lane GP (DSW, MJP).

Goosander *M. merganser* Influx during January with maximum of four over Bedford SW, three at Brogborough CLP and Barkers Lane GP, two at Stewartby L and Grovebury SP and singles Harrold GP and Radwell GP. In February four at Harrold GP, two at Brogborough CLP and singles Grovebury SP and Radwell GP. Great Barford held three in March and the last to depart was a single at Harrold GP on 10th April. The only record in the second winter period was a single at Blunham GP 19th and 25th December.

Ruddy Duck *Oxyura jamaicensis* Singles Barkers Lane GP 10th and 12th January, Dunstable SW 17th – 23rd January, Southill L 4th April and Radwell GP 12th December.

Honey Buzzard *Pernis apivorus* Single seen over Bidwell Hill 24th May was later seen over Shillington (DG, MC).

- Red Kite *Milvus milvus*** During the severe weather one was seen between Clapham and Milton Ernest on 9th January with a probable seen near Leighton Buzzard on 16th February. On 29th May one flew over Greenfield and what was probably the same bird was seen between Old Warden and Biggleswade on 4th June (PT, TW, JGJ, per IKD)
- Marsh Harrier *Circus aeruginosus*** Single over The Lodge, Sandy 7th May heading north (IKD).
- Hen Harrier *C. cyaneus*** Exceptional influx during November with a 'ringtail' near Shillington 3rd, a male at the same locality 13th and 15th, male The Lodge, Sandy 5th, 'ringtail' The Lodge 25th November and then an immature male near Biggleswade 31st December. (JPL, JSC, DK, AHC, SGW) These records relate to at least three individuals which stayed on well into 1983.
- Sparrowhawk *Accipiter nisus*** Two pairs bred, one in the north and one in the east of the county, and birds were present during May – July at a further nine sites. Numerous winter records from all areas.
- Buzzard *Buteo buteo*** Single over Whipsnade Zoo Park 28th March (CT). Additional 1981 record: a pair summered at a locality in the east of the county.
- Buzzard sp *Buteo/Pernis* sp** Single near Heath and Reach 13th June, and one for about a week in mid-September in Luton Hoo. Two unidentified buzzards were seen in the Exeter Wood area from end September to the year end. (A Rough-legged Buzzard, *B. lagopus*, frequented this area from January into April 1983).
- Kestrel *Falco tinnunculus*** A male found at Whipsnade Zoo Park 28th January had been ringed on 4th July 1974 in Cumbria.
- Merlin *F. columbarius*** Single near Stanbridgeford 15th December (AL).
- Hobby *F. subbuteo*** One pair bred raising two young and display and summer presence noted at three other sites indicative of breeding activity. The first in summer was over Oakley on 22nd April followed by many records, until the last over Leighton Buzzard on 8th October and Stanbridge the next day.
- Quail *Coturnix coturnix*** Three were heard on the county boundary near Pirton in July (CWB).
- Lady Amherst's Pheasant *Chrysolophus amherstiae*** Records, with daily maxima shown, from Maulden Woods (eight), Jackdaw Hill (one), Chicksands Wood (one), Kingshoe Wood (one), Luton Hoo (two). At Charlewood, the main site, indications were of a better than average breeding season despite disturbance by tree felling. An estimated 12 – 15 pairs bred rearing 30 – 40 young. The maximum count of adults on one day, the 8th February, was of six males and five females in a feeding party (per PS).
- Water Rail *Rallus aquaticus*** Winter records from eight sites, but during the summer from only Flitwick Moor with a daily maximum of three.
- Coot *Fulica atra*** Maximum of 520 at Barkers Lane GP, 300 at Blunham GP and 400 at Brogborough CLP in January and, in September, 444 at Brogborough CLP and 380 at Harrold GP in December.
- Oystercatcher *Haematopus ostralegus*** Unprecedented influx with 21 at Grovebury SP, six over Blunham GP and one over Warden Lodge on 2nd January and then one at Barkers Lane GP 3rd. In May two were seen at the last locality on 29th.
- Little Ringed Plover *Charadrius dubius*** Very poor breeding season with only one pair rearing two plus young. Single pairs at two other sites probably bred and pairs were present in suitable habitat at another eight sites but with no evidence of breeding activity. The first arrival in spring was on 26th March at Girtford GP followed a day later by birds at City Field GP and Barkers Lane GP. Passage numbers were lower than recently with the largest counts of ten at Girtford GP 25th July and 12 at Bedford SW 9th August.
- Ringed Plover *C. hiaticula*** Poor breeding season with single pairs successful at just three sites raising two and four young with the result at the third unknown. Birds were present at another two sites but with no indication of breeding. At another site three pairs on eggs deserted after human disturbance and subsequent attempts nearby were frustrated by new cultivation. Very low passage numbers with only one site attracting more than ten in spring and elsewhere four was the maximum during the autumn. Winter records from

- Barkers Lane GP with a single on 30th January and then two at three other sites in February. One at Barkers Lane GP 28th December.
- Dotterel** *C. morinellus* The third recent county record occurred with one at Holme Green, Biggleswade on 12th May (SGW).
- Golden Plover** *Pluvialis apricaria* Fairly typical distribution in first winter period, but with a noticeable passage in late March with 350 at Cardington Airfield, 380 Colmworth, and 1000+ City Field Farm. On 23rd April 50 at Barton were late, whilst one on 21st July at Bedford SW was early. Numbers in the second winter period were low but 389 were counted on Cardington Airfield on 26th November.
- Grey Plover** *P. squatarola* A single over Stewartby L 2nd July (MJP) was followed by an exceptional five at Barkers Lane GP 18th October (DK).
- Lapwing** *Vanellus vanellus* High numbers present during both winter periods with the following worthy of note: 1200+ Grovebury SP 31st January; 1000+ on several dates in January to March and December at Radwell GP; 2500 Harrold GP 6th February; 2500 Brogborough 7th February; 1000 Eaton Bray 1st February; 1000 Willington 8th August; 2000 Grovebury SP 10th October; 1100+ Cardington November and December and 1000 Dunstable SW in December.
- Knot** *Calidris canutus* Two at Girtford GP on 14th – 15th May with one staying until 16th (MJP, RAH et al).
- Sanderling** *C. alba* Two Girtford GP 28th May (RAH).
- Temminck's Stint** *C. temminckii* A single, and the county's fourth record, at Girtford GP 13th May (MJP, DJO et al).
- Dunlin** *C. alpina* Low passage numbers, which in spring lasted from 22nd March until 28th May from seven sites with peaks of five at Radwell GP 11th April and seven at Barkers Lane GP 8th May. In the autumn movement recorded from 14th July to 28th August, all singles apart from two at Bedford SW 5th August. Winter records of singles from Barkers Lane GP, Grovebury SP, and Harrold GP, and two at Radwell GP 23rd January.
- Ruff** *Philomachus pugnax* Poor passage with spring records restricted to Girtford GP. Two on 4th April, then four on 12th – 14th with one staying until 16th April and then one 27th June. In the autumn just a single at Bedford SW on 24th July. A winter record of one at Radwell GP 6th February.
- Jack Snipe** *Lymnocyrtus minimus* In the first winter period present at Houghton Regis CHP until 8th April with a peak of six on 14th March. Elsewhere singles at Radwell GP and Biggleswade Common 28th February and at Harrold GP singles 9th and 30th January and 11th April. Widespread in the second winter period with the first on 21st September at Dunstable SW, and then records from Harrold GP, Houghton Regis CHP, The Lodge, Sandy, Girtford GP, Whipsnade Zoo Park and Radwell GP, which attracted a peak of six on 5th December.
- Snipe** *Gallinago gallinago* "Drumming" birds at Old Warden 24th April and Girtford GP 16th May and 24th July. The only large flocks were on the flooded meadows at Fenlake during March with a peak of 175 on 21st and then again in December with 173 on 12th.
- Woodcock** *Scolopax rusticola* Roding from 13 sites with daily maximum of six at Maulden Woods. Winter records from a further five sites.
- Black-tailed Godwit** *Limosa limosa* Single Radwell GP 7th and 13th March (MJP, DJO, DPL, DSW), Barkers Lane GP 20th April (MJP) and a remarkable ten there 15th August (DK).
- Bar-tailed Godwit** *L. lapponica* Single Harrold GP 22nd May (DSW).
- Whimbrel** *Numenius phaeopus* Single Barkers Lane GP 13th July.
- Curlew** *N. arquata* Winter records of singles from Leighton Buzzard on 19th January and Grovebury SP 5th February. Steady spring passage with singles at Blunham GP 30th March, Dunstable SW 8th April, Wingfield 8th May, Home Wood 16th May and at Barkers Lane GP single 2nd May and two 3rd May. At Carlton two were present on 19th June with six there on 22nd. In the autumn singles Harrold GP 3rd July and Chimney Corner

CLP 5th July, five at Barkers Lane GP 29th August and lastly ten at Harrold GP 10th September.

Spotted Redshank *Tringa erythropus* Singles Girtford GP 12th April, over Barkers Lane GP 18th April and over Blunham GP 9th July.

Redshank *T. totanus* Influx in the spring first evident on 2nd March with five at Fenlake, and birds were soon widespread with peaks of eight at Barkers Lane GP 20th March and Girtford GP with 11 on 28th March. Single breeding pairs successful at two sites, with probable success at one other and attempts at another – a poor year. Away from the breeding localities autumn passage was sparse, lasting from 9th July to 28th August. There were as usual a few winter records.

Greenshank *T. nebularia* Spring records from Girtford GP from 13th to 15th May and Grovebury SP 30th May, all singles. Very moderate autumn passage from 4th July to 16th September from nine sites with never more than two together.

Green Sandpiper *T. ochropus* Seen in every month of the year, with singles widespread during both winter periods. Peaks on passage included 11 at Bedford SW 14th August, five Dunstable SW 24th August and seven Charlton SW 28th August. In spring never more than two together.

Wood Sandpiper *T. glareola* Singles Dunstable SW 25th July and 9th August, two Bedford SW 27th July staying until 5th August, with then a different bird 8th to 10th August.

Common Sandpiper *Actitis hypoleucos* Passage in spring lasted from 10th April to 28th May with a peak of seven at Barkers Lane GP on 14th May. Widespread autumn passage lasted from 30th June, with a single at Dunstable SW, until 10th September, with maxima of eight between 8th and 10th August at Dunstable SW and nine at Great Barford GP on 14th July. In October a single was seen at Grovebury SP on 3rd and at Stewartby L two were present from 3rd to 10th.

Turnstone *Arenaria interpres* Single Biggleswade Common 25th April.

Mediterranean Gull *Larus melanocephalus* A first winter bird on Pirton Hill School playing-field, Luton on 6th February was the first county record (SJR).

Little Gull *L. minutus* Good spring passage at Stewartby L involving at least three and maximum of five individuals. First were two on 20th April, seen to 25th, single on 26th, three on 27th, single on 29th, two on 30th, and then a single 2nd to 4th May (MJP, DJO et al).

Elsewhere singles Barkers Lane GP 12th May (MJP, IKD), Dunstable SW 9th August (AT, AL). Harrold GP 2nd September (DSW) and a late bird at Stewartby L 9th November (MJP). From being a scarce migrant prior to 1980 this species has become a much more regular visitor to the county.

Herring Gull *L. argentatus* 150 at Stewartby L 1st January. During December ten to 30 were regularly attracted to Deepdale refuse tip, mostly large dark-mantled birds typical of the Scandinavian race *L. a. argentatus*.

Great Black-backed Gull *L. marinus* 130 at Stewartby L 1st January.

Kittiwake *Rissa tridactyla* Single Whipsnade Zoo Park 2nd April (RC, CT). Two Barkers Lane GP 14th April were joined by a third on 15th April staying until 20th April when one departed. Present until 2nd May when one was found dead (MJP, TT et al).

Sandwich Tern *Sterna sandvicensis* Two Stewartby L 9th September (DHB), and two Barkers Lane GP 19th September (DK).

Common Tern *S. hirundo* At one site three pairs bred each raising two young. At another locality one pair raised two young, with another pair unsuccessful due to predation with a pullus and adult found dead. At a third site a pair raised four young. Elsewhere a pair was seen apparently on eggs but later deserted, and at a fifth site adults were seen carrying food, suggested nesting nearby.

The first in spring was seen on 9th April and the last in the autumn on 29th September, with a strong passage of 15 at Stewartby L on 29th August. In poor visibility 35 "Commic" Terns were seen at Stewartby L on 29th April.

Arctic Tern *S. paradisaea* Typical spring passage with single at Barkers Lane GP 15th April to

6th May, and at Stewartby L one on 23rd April, followed by eight on 28th and again on 30th April.

Little Tern *S. albigrons* Singles of this rare visitor at Grovebury SP 6th June (JWi) and Barkers Lane GP 20th June (DK).

Black Tern *Chlidonias niger* Good numbers in both spring and autumn. The first was one at Barkers Lane GP on 6th May, followed by an influx in mid-month with five there on 11th, two at Stewartby L on 12th and six at Harrold on 13th. Two were seen there on 30th May and six were seen Barkers Lane GP 31st, with one on 5th June.

In the autumn the first were two at Barkers Lane GP on 10th August with up to two then seen to 15th September. At Stewartby L one was seen between 20th August and 8th September. Eight were seen at Grovebury SP 12th September. At Brogborough CLP a single was present 17th – 18th August and then in the September influx four were seen on 5th, 12 – 14 on 10th and lastly seven on 15th.

Collared Dove *Streptopelia decaocto* Several impressive roosts were counted, including 58 on Blows Downs in October, 80 at Well Head and 114 near County Hall, Bedford in November.

Turtle Dove *S. turtur* The earliest was at Barkers Lane GP on 26th April and the latest to depart was at the same locality 29th September.

Ring-necked Parakeet *Psittacula krameri* Singles Harrold GP 9th September, Barkers Lane GP 8th and 11th September. Do these dates suggest an autumn dispersal?

Cuckoo *Cuculus canorus* The first, at Girtford GP 14th April was on a typical date; the last was at Kempston 15th September.

Barn Owl *Tyto alba* The suggestion of an increase continues. Breeding successful at two sites and likely at a third. Summer presence noted at a further two localities. Birds recorded at another 11 sites in autumn/winter.

Long-eared Owl *Asio otus* Up to three January to March at a roost in the south of the county.

Short-eared Owl *A. flammeus* In the first winter period birds seen at Coronation CLP with one in January, two in February and four in March. Two were seen at Girtford GP 25th – 26th March and two at Pegsdon 27th March. In the second winter period a widespread influx took place with the first at Houghton Regis CHP on 10th October increasing to three by month-end. Birds were seen at another six sites, mostly singles, but three were at Coronation CLP 12th December and two or three near Everton 11th December.

Nightjar *Caprimulgus europaeus* A very poor year with a female only seen at Chicksands Wood 26th May and 4th June. Other usual sites were visited but birds not present.

Swift *Apus apus* The first were two at Barkers Lane GP 30th April, with the main influx a few days later, when c200 had gathered at the same locality. The last were two at The Lodge, Sandy 20th September.

Kingfisher *Alcedo atthis* Breeding activity noted at one site. Summer presence noted at another three, and in the winter recorded at another 13. Many observers mentioned a fall in sightings, and this species obviously suffered from the 1981/82 winter.

Hoopoe *Upupa epops* Single near Sheerhatch Wood 22nd April (JT).

Sand Martin *Riparia riparia* The first arrivals were two at Blunham GP on 20th March, which were early. The last were three at Grovebury SP on 17th October. Only two breeding colonies were reported; one of 350+ holes at Radwell GP and "several" pairs near Shire Hall, Bedford.

Swallow *Hirundo rustica* The earliest was at Great Barford GP on 28th March, over a week earlier than usual, and the last was one at Whipsnade Zoo Park 27th October. On 26th September a continuous passage of birds moving south was noted at Stewartby L and Harrold GP.

House Martin *Delichon urbica* The first was one at Barkers Lane GP on 7th April and the last a late bird at Girtford GP 14th November. Heavy passage noted at Sandy 27th September.

Tree Pipit *Anthus trivialis* No change in breeding status with the majority of sightings from the Greensand Belt. The first in spring was on 11th April near Old Warden.

Meadow Pipit *A. pratensis* Spring influx at Barkers Lane GP noted on 13th March when 22

were present, increasing to a peak of 74 on 16th and then mostly absent at month end, but then a second influx in early April with maxima of 90 on 3rd. At Radwell GP 150 estimated on 11th April.

- Rock Pipit** *A. spinoletta* Single Barkers Lane GP 16th March, and again on 20th with possibly a second, one on 26th and then three on 27th March. (MJP, DJO, et al). A single of the race *A. spinoletta spinoletta*, known as the Water Pipit was seen at Barkers Lane GP 28th March (DJO).
- Yellow Wagtail** *Motacilla flava* The first to arrive was at Barkers Lane GP 3rd April and impressive numbers there included 53 on 3rd May and 60 on 7th July. 100 were counted at Harrold GP 10th April, where an autumn roost peaked at 200 on 10th September. The last to depart was one at Girtford GP 17th October. Examples of the race *M. flava flava* known as the Blue-headed Wagtail were a female on 5th May at Stewartby L and a pair at Barkers Lane GP on 21st April, with the female last seen on 10th May and the male 24th May (TT, MJP, DK).
- Grey Wagtail** *M. cinerea* No breeding records. Sightings at 17 localities scattered throughout the non-breeding period were mostly of singles.
- Pied Wagtail** *M. alba* Roost at Queens Park, Bedford peaked at 522 on 3rd November. Birds of the continental race *M. alba alba*, known as the White Wagtail were seen in spring at Radwell GP 13th March, Barkers Lane GP with a single from 3rd to 10th April, at Girtford GP peaking on 12th April with four, at Stewartby L peaking on 25th April and 1st May with four and a single at Luton SW 11th April.
- Nightingale** *Luscinia megarhynchos* 16 singing males were located at eight sites, a slight reduction on 1981. The first was one at Potton Wood on 21st April, which was early.
- Black Redstart** *Phoenicurus ochruros* A pair raised four young at RAE, Thurleigh which was the first successful attempt in the county since 1974. The nest was located on a refuelling trailer, which was moved up to 200 yards on occasions during incubation, the birds leaving the nest and then waiting for it to be returned to its parking place each time. One of the brood was killed by a cat; the pair second brooded, but all the young met the same fate. The adults were present until early October (BC, RLO, DJO). Elsewhere singles were seen at Linslade 24th March, Sundon Park, Luton 28th April, and Houghton Regis CHP 8th May, all males. Lastly one was seen 24th December near Stanbridge. (JT, EJB, PT, AL). An excellent year.
- Redstart** *P. phoenicurus* One pair bred in New Wavendon Heath and another at Apsley Heath. A single male was seen on two dates in May in Kings Wood, Heath and Reach, and a male was seen nest prospecting in Old Wavendon Heath. Migrants were seen at Maulden Woods 12th April, Potton Wood 21st April, Barkers Lane GP 8th May, Whipsnade Downs 30th August and Whipsnade Farm 2nd September.
- Whinchat** *Saxicola rubetra* Good spring passage though none stayed to breed. The first noted were, in April, singles at Blows Downs on 21st, Barkers Lane GP on 25th and two Blunham also on 25th and one Houghton Regis CHP on 26th. A second wave arrived in May with one at Bedford SW on 2nd, three near Hockliffe and two Barkers Lane GP on 3rd, two Dunstable SW on 4th and a single at Romp Hall on 6th. In autumn passage first noted on 17th July in Houghton Regis CHP, and lastly at Bedford SW on 19th September. The peak was four at Blows Downs 15th September.
- Stonechat** *S. torquata* Singles in Biggleswade railway sidings 19th January, Marston Thrift CLP 6th November with two there 28th November and lastly one at Leighton Buzzard SW 7th December. These scanty records indicate the effect of the hard winter.
- Wheatear** *Oenanthe oenanthe* No breeding records. Widespread spring passage commencing on 31st March at Whipsnade Zoo Park and lasting until 16th May with a peak of ten at Totternhoe on 5th April. Records received from 17 sites. Autumn passage less numerous lasting from 10th August until 11th October and noted at eight localities.
- Ring Ouzel** *Turdus torquatus* A poor year with singles Blows Downs 3rd - 12th April, Harrold GP 6th April, Whipsnade Zoo Park 10th - 19th April, and in the autumn Blows Downs 12th September and Everton 22nd September.

- Fieldfare *T. pilaris* At a locality in the north of the county two were present on 8th May with at least one there on 31st May. Other May records were singles at Barkers Lane GP on 4th and West Park, Silsoe on 9th. Large spring flocks included 400 at Tilsworth Manor 20th March and 250 Henlow 24th April.
The first to return in the autumn was one over Kempston on 24th September. The only large flock in the second winter period was 200 at Barton 28th November.
- Redwing *T. iliacus* The first autumn arrival was on 29th September at Carlton, followed on 3rd October by birds over Bedford and Whipsnade Zoo Park. 200 were seen on Blows Downs 9th October and 300 at Barton 28th November. The last to depart in spring was on 27th April at Totternhoe.
- Grasshopper Warbler *Locustella naevia* 32 singing males heard at 15 localities is a reduction on 1981. The first was 12th April at Maulden Woods, which was early.
- Sedge Warbler *Acrocephalus schoenobaenus* Barkers Lane GP gains all the credits with the first, an early bird, on 6th April and the last on 6th October. An estimated 44 singing males were recorded there.
- Reed Warbler *A. scirpaceus* One at Cox Hill, Sandy on 22nd April was the earliest ever, followed by one at Harrold GP on 24th. Numerous breeding colonies were reported with the largest at Barkers Lane GP with 12 males and Harrold GP with 22 males. Two late juveniles were ringed at Girtford GP 16th October.
- Lesser Whitethroat *Sylvia curruca* The first were on 2nd May, near Old Warden and Odell Plantation, about an average date. The last were on 19th September at Harrold GP and Barkers Lane GP.
- Whitethroat *S. communis* The first was on 21st April at Maulden Woods with the last on 19th September at Harrold GP.
- Garden Warbler *S. borin* The first were birds at Willington Woods, near Old Warden, and Odell Plantations on 2nd May. The last was one at Brogborough CLP 12th September.
- Blackcap *S. atricapilla* An increase in the number of wintering birds with records from Carlton 6th February, Shefford 13th – 27th February and Luton 13th March and in the second winter period from The Lodge, Sandy 11th – 21st November, Luton 24th November, Everton 24th December and Bedford 28th December. The first probable migrant was one at The Lodge, Sandy on 5th April and the last 26th September in Charle Wood.
- Wood Warbler *Phylloscopus sibilatrix* No evidence of breeding. Males singing in Charle Wood on 24th April and Aspley Heath on 3rd June were not seen subsequently. Singles were seen Sheerhatch Wood 1st May and Houghton Regis CHP 30th June.
- Chiffchaff *P. collybita* The first, but about a week later than usual was one at Girtford GP 24th March. Birds were widespread three days later. The mild weather at the end of the year encouraged birds to overwinter and the following were reported in December: Harrold GP 11th and 28th, Barkers Lane GP 17th; Dunstable SW four on 22nd, single 28th; Bedford 27th (in song), and Girtford GP with two on 29th.
- Willow Warbler *P. trochilus* The first, which was early was heard at Swiss Gardens, Old Warden 27th March, followed by two at Barkers Lane GP on 3rd April. The last to depart was at Harrold GP 19th September.
- Firecrest *Regulus ignicapillus* One at Shortmead House, Biggleswade on 12th April stayed to 23rd April (BRS et al).
- Spotted Flycatcher *Muscicapa striata* The first to arrive was one at Blunham 9th May and the last in autumn was in Bedford Park on 30th September.
- Bearded Tit *Panurus biarmicus* One at Stewartby L 8th January (JN), and at least two at The Lodge, Sandy 30th October (TDC).
- Golden Oriole *Oriolus oriolus* Single at Wyboston 8th June (JN).
- Great Grey Shrike *Lanius excubitor* One present since 1st November 1981 stayed in the Girtford/Blunham area until 3rd February. Elsewhere singles Bromham 24th October and Brogborough CLP 31st October (DHB, JT, PJW, TP).
- Magpie *Pica pica* The roost on Dunstable Downs reached 80 in December.
- Jackdaw *Corvus monedula* 1000+ were seen flying west to roost over Double Arches, Heath

and Reach 7th February.

Starling *Sturnus vulgaris* Over Leighton Buzzard during late January and early February roost dispersal was estimated to reach a peak of 50-75,000 on 7th February.

Brambling *Fringilla montifringilla* Individuals were widespread in the first winter period, but no significant flocks developed, the largest being 11 at The Lodge, Sandy 8th March. The situation was even worse in the second winter period with records received from just five localities, the largest of 50 in Chaul End 20th December.

Greenfinch *Carduelis chloris* A roost at Harrold GP 2nd September numbered 500.

Siskin *C. spinus* Small parties widespread in the first winter period with maximum of 150 at Flitwick Moor 24th January. There were several garden feeding records. Early migrants were five or six at The Lodge, Sandy on 17th August. Birds were scarce in the second winter period with records from only four localities.

Crossbill *Loxia curvirostra* Single females at The Lodge, Sandy 7th and 27th January, 1st and 3rd March, and then one 10th November.

Hawfinch *Coccothraustes coccothraustes* Big increase in sightings. At Maulden Woods seen on several dates between 14th March and 12th June, with a female and three juveniles on 30th May. Elsewhere seen in Luton Hoo in January, Barton Springs with two on 30th January, Whipsnade Downs 24th January and 7th February, Wrest Park, Silsoe with seven on 9th April, near Old Warden on three dates in April and May, and Sheerhatch Wood 26th May.

Yellowhammer *Emberiza citrinella* A flock of 400 was seen near Bromham 5th December.

Corn Bunting *Miliaria calandra* At Stevington 200 were counted feeding on hay 3rd January and in December a roost of 100 had developed at Girtford.

ESCAPES

Swan Goose *Anser cygnoides* Single Radwell GP 7th March to 4th April.

Bar-headed Goose *Anser indicus* One at Harrold GP 5th June, and then two 9th and 16th October.

Chiloe Wigeon *Anas sibilatrix* Three at Radwell GP 17th October and one Southill 11th December.

BARRY NIGHTINGALE

A SUMMARY OF THE WADING BIRDS RECORDED IN BEDFORDSHIRE 1946-1981

ADDENDUM

The following species should have been included after Turnstone in the article published in the Journal for 1981, *Bedf. Nat.* 36 12-22.

Wilson's Phalarope *Phalaropus tricolor* Very rare vagrant. Two records of this transatlantic visitor. The first county record was of one at Stanford Gravel Pit 10-13th May 1958, this occurrence caused great excitement as it was only the second European record. The second county record was of one at Bedford Sewage Farm 12-16th September 1972.

B. NIGHTINGALE AND P. SMITH

BIRD RINGING REPORT

by D. S. Woodhead, 79 The Moor, Carlton, Bedford

The table below lists all the birds ringed during the year, the total being 5137 birds of 55 species. This figure shows a decrease from the previous year.

Table 1 includes the more interesting recoveries that were received during the period and although the grand total of birds ringed was reduced many significant recoveries were received providing interesting reading.

The severe north-easterly gales during the 26th-27th April 1981 which forced many seabirds from the North Sea inland (as shown in the Bird Report for 1981 (*Bedf. Nat.* 36 25-36)) also produced the recoveries of three Sandwich Terns found dead in the county. There were a number of Sand Martin recoveries during the period and the task of selecting those for publication was again difficult. Those worthy of special note were 466045 ringed at a colony in Belgium the previous year and B221192 which took four days to cover 152Km, not quite as fast as the Swallow B343043 which took only one day to cover 183Km from Winterset Reservoir in Yorkshire.

By far the most exciting recoveries were amongst the warblers, pride of place going to the Lesser Whitethroat in Czechoslovakia, closely followed by the Blackcap in southern Spain. These two recoveries illustrate the different routes taken by each species on migration. Lesser Whitethroats migrate across Europe in a south easterly direction to their wintering grounds in central east Africa. A620360 was found dead on spring passage. British ringed Blackcaps, with the occasional exception, show a southwest movement into Iberia and beyond to Morocco and Algeria. B685267 fits well into this pattern, possibly wintering in the area. Incidentally, Blackcaps breeding in Sweden, Norway and central Europe migrate southeast in autumn showing a marked migratory division between the two populations.

The Sedge Warbler recovered on Fair Isle in May is also worthy of note.

RINGING TOTALS FOR 1982

Canada Goose	2	Robin	105	Willow Tit	16
Mallard	1	Blackbird	383	Coal Tit	4
Shelduck	1	Fieldfare	4	Blue Tit	370
Ringed Plover	3	Song Thrush	120	Great Tit	181
Lapwing	3	Redwing	10	Treecreeper	12
Jack Snipe	1	Grasshopper Warbler	4	Jay	2
Snipe	9	Sedge Warbler	212	Starling	180
Woodpigeon	1	Reed Warbler	184	House Sparrow	406
Collared Dove	2	Lesser Whitethroat	62	Tree Sparrow	54
Turtle Dove	6	Whitethroat	48	Chaffinch	76
Cuckoo	2	Garden Warbler	33	Greenfinch	506
Kingfisher	7	Blackcap	59	Goldfinch	28
Great Spotted Woodpecker	2	Chiffchaff	45	Linnet	68
Sand Martin	536	Willow Warbler	229	Redpoll	21
Swallow	502	Goldcrest	7	Bullfinch	129
House Martin	1	Spotted Flycatcher	12	Yellowhammer	84
Yellow Wagtail	6	Long-tailed Tit	65	Reed Bunting	92
Wren	69	Marsh Tit	4	Corn Bunting	4
Duncock	164				

ACKNOWLEDGEMENTS

I would like to thank the following ringers who work in the county for the submission of their records.

M. Fitzpatrick, P. Holmes, R. Morgan, E. Newman, P. Wilkinson, M. A. Woodhead, J. C. Woollett.

SPECIES	RINGING DETAILS					RECOVERY DETAILS				
	RING NUMBER	AGE CODE	SEX	DATE	LOCATION	DATE	LOCATION	RECOVERY MANNER	DISTANCE km	DIRECTION
Sandwich Tern	XX 89689	1		28. 6.71	Farne Islands	29. 4.81	Arlesey	X	410	SSE
	DS 31265	6		11. 6.66	Coquet Island, Northumberland	27. 4.81	Oakley Bridge	XF	358	S
	XX 85743	1		23. 6.70	Coquet Island, Northumberland	8. 5.81	Luton Hoo	XL	394	S
Kingfisher	SA 21452	3		11. 7.82	Leighton Buzzard	24. 7.82	Drayton Beauchamp, Bucks.	V	13	S
Sand Martin	466045	4	♀	15. 6.80	Roskem, West Vlaanderen, Belgium	29. 7.81	Radwell G.P.	V	271	W
	B 333938	3J		25. 7.82	Radwell G.P.	29. 7.82	Holme Pierrepont, Nottingham.	V	90	NNE
	B 221192	3J		21. 7.82	Cound, Shrewsbury, Shropshire	25. 7.82	Radwell G.P.	V	152	SE
	B 075324	2		12. 7.81	Radwell G.P.	21. 7.81	Mucking, Essex	V	103	SE
	B 303123	3J		3.10.81	Bybrook, Ashford, Kent	25. 7.82	Radwell G.P.	V	154	SSE
	B 075450	3J		29. 7.81	Radwell G.P.	3. 6.82	Blyth, Nottinghamshire	V	133	NNW
Swallow	B 343043	3		12. 9.81	Winterset Reservoir, Yorkshire	13. 9.81	Everton	X	183	SSE
	A 963631	3		14. 9.80	Radwell G.P.	1.12.81	Bishopthorpe, Yorkshire	X	195	NW
Sedge Warbler	B 075296	3		15. 8.81	Harrold G.P.	28. 5.82	Fair Isle, Scotland	V	817	NNW
Reed Warbler	A 632421	4	♂	19. 7.80	Harrold G.P.	22. 5.82	Swithland Reservoir, Leics.	V	70	NNE
	A 347599	4		3. 8.80	Brandon Marsh, Warwickshire	30. 5.82	Harrold G.P.	V	61	S
	JS 63730	4	♂	22. 5.81	Marsworth Reservoir, Tring, Herts.	4. 8.82	Harrold G.P.	V	43	N
Lesser Whitethroat	A 620860	6		17. 5.80	Harrold G.P.	28. 4.81	Krenovice, Czechoslovakia	X	1096	ESE
Garden Warbler	B 253511	3		29. 7.81	Naseby Reservoir, Northants.	2. 8.82	Harrold G.P.	V	37	SW
Blackcap	B 685267	3	♂	15. 9.82	Cranfield	20.11.82	Villamartin, Cadiz, Spain	(?)	1736	
	B 130147	4	♀	21. 5.81	Cranfield	14. 4.82	Minsterworth, Gloucs.	V	122	SW
Willow Warbler	4E 2821	3		18. 7.82	Naseby Reservoir, Northants	4. 8.82	Harrold G.P.	V	37	SW
Blue Tit	A 910079	6		21. 2.81	Mapperley, Nottingham	19. 3.82	Cranfield	V	105	SSE
Starling	XH 56143	4	♀	16. 2.80	Carlton	25.11.82	Norwich, Norfolk	X	136	ENE
Chaffinch	KH 99977	6	♂	2. 6.76	Chattendon Wood Cliffe, Kent	9. 5.82	Girtford G.P.	V	94	NW
Greenfinch	NK 46095	3	♂	19.11.81	Cranfield	5. 3.82	Kingshill, Cirencester, Gloucs.	X	103	SW
Reed Bunting	B 437040	3		16. 1.82	Oxford	13. 6.82	Leighton Buzzard	V	45	WSW

E ring age code: 1 Pullus: nestling or chick
 2 Fully grown, but year of hatching unknown
 3 Hatched during calendar year of ringing
 (J - in 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)
 X Found dead or dying
 XF Found freshly dead or dying
 XL Found dead (not recent)
 (?) Unknown

Table 1. Details of selected ringing and recovery records

FISH

Report of the Recorder

From a natural history viewpoint fish are certainly the most neglected of all the vertebrates, and this is illustrated by the fact that in both 1981 and 1982 only three people contributed any fish records. However, on the positive side, 1982 has shown a considerable improvement over the previous year with a total of 36 new county tetrad records, against only 6 in 1981.

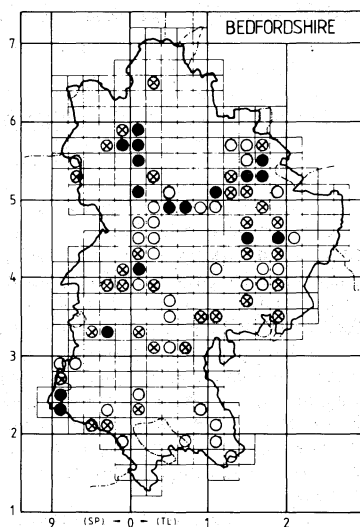
The reappearance of the Catfish in the Great Ouse at Bedford, tetrad 04P, is most pleasing. It is significant to note that 04P is obviously one of our most well-covered locations, yet John Swann who provided the Catfish record was still able to obtain three new tetrad records from it – the other two species being Minnow and Ruffe.

Bryan Inns is still undertaking a detailed study of the general natural history in the Stanbridge/Tilsworth area. To look at it on a map would give no indication of it being a particularly "fishy" location, yet Bryan has provided some remarkable fish records from the small ditch which forms part of the parish boundary between the two villages in tetrad 92R. This year it provided new tetrad records for 3-Spined Stickleback and Perch – other species known to exist there are Carp and Rainbow Trout. On face value, one might well overlook sites such as this, but Bryan's work has proved just how valuable they can be.

Whilst it is very pleasing to receive records from small, less obvious sites, we must not overlook the fact that a great deal of work still needs to be done on the most obvious site of all – namely the Great Ouse itself. For this reason I am particularly grateful to Alistair Muir-Howie who not only undertook a detailed study of our major river, but also managed to obtain a total of 32 new tetrad records from it – i.e. 89% of all the new records obtained in 1982. Furthermore, previously we had no fish records at all from three of the tetrads which Alistair covered, these being 05A (Bromham), 05G (Clapham) and 95G (Turvey).

The occurrence of Barbel in the Great Ouse tended to dominate the Fish Reports for 1980 and 1981. This year Alistair Muir-Howie caught a 12 oz. specimen from the Ouse at Bromham thus indicating that the original stock, introduced in 1972, are not only thriving but also breeding in the river.

Since work on the fish distribution in the county began in April 1976 we have obtained records from a total of 83 different tetrads, and the summary map shows the number of species so far recorded in each 2 km. square. It is interesting to note that the results of the remarkable achievements obtained by the three people who submitted records this year can all be significantly applied to a general analysis of the survey. For example, 34 tetrads (41% of the total number covered) contain under five species and many of these are small sites, such as the one at Stanbridge/Tilsworth covered by Bryan Inns, in which one would only expect to find a few species. 32 tetrads (38%) contain 5 – 10 species and I believe this is due to the fact that many of them are simply under-recorded. Alistair Muir-Howie has proved that our major river has many locations which have never been covered, and John Swann has shown that new records can still be obtained from an already well-covered site. None of the 17 tetrads (20%) which



Summary map ○ less than 5 species,
⊗ 5-10 species, ● more than 10

contain over 10 species hold anywhere near the total number of 27 species on the county list. Our Mammal Recorder, David Anderson, has provided us with many of the records from the county's most prolific tetrad over the years. This is 92B, an area just south of Leighton Buzzard near the boundary of Buckinghamshire, which contains several still waters plus the River Ouzel and the Grand Union Canal. To date, the following species have been recorded in 92B: Pike, Perch, Roach, Rudd, Gudgeon, Common Bream, Silver Bream, Tench, Carp, Crucian Carp, Zander, Catfish, 3-Spined Stickleback, Ruffe and Rainbow Trout. 15 species in all, or, in other words, 56% of the total county list.

There is no need for me to conclude this report with the usual list of contributors as all of them have been mentioned in the text. Nonetheless, I thank them all for their most valuable assistance.

NEW TETRAD RECORDS FOR 1982

Pike *Esox lucius* – 3 tetrads. 95G, 05AG.
Perch *Perca fluviatilis* – 4 tetrads. 92R, 95G, 05AG.
Roach *Rutilus rutilus* – 3 tetrads. 95G, 05AG.
Rudd *Scardinius erythrophthalmus* – 1 tetrad. 05A.
Chub *Leuciscus cephalus* – 3 tetrads. 95G, 05AG.
Gudgeon *Gobio gobio* – 3 tetrads. 95G, 05AG.
Bleak *Alburnus alburnus* – 2 tetrads. 95G, 05A.
Common Bream *Abramis brama* – 2 tetrads. 95G, 05A.
Tench *Tinca tinca* – 1 tetrad. 05A.
Barbel *Barbus barbus* – 1 tetrad. 05A.
Carp *Cyprinus carpio* – 1 tetrad. 05A.
European Catfish *Silurus glanis* – 1 tetrad. 04P.
Eel *Anguilla anguilla* – 1 tetrad. 05A.
3-Spined Stickleback *Gasterosteus aculeatus* – 3 tetrads. 92R, 95G, 15K.
Minnow *Phoxinus phoxinus* – 4 tetrads. 95G, 04P, 05AG.
Ruffe *Gymnocephalus cernua* – 3 tetrads. 04P, 05AG.

TONY PETERKIN

SLUGS AND SNAILS (Mollusca) Report of the Recorder

In my last report I gave an account of some forays into Garden Centres and heated greenhouses in search of molluscs. Since then Dave Guntrip has paid a visit to the Luton Stockwood Park nurseries and added yet another alien species to our Bedfordshire fauna, *Subulina striatella* (Rang 1831). This snail originates from tropical West Africa, where it lives among moist leaf litter. It is a fairly common snail in hothouses in Britain and is usually found feeding at the base of plants, where it can become a pest.

When I began to map the slugs and snails of Bedfordshire, on a tetrad basis, there were certain species that I considered to be fairly common throughout the county. One such species was the slug, *Arion fasciatus* (Nilsson 1823) and I have a fairly wide scatter of records for it. However, over the past year, I have gradually come to the conclusion that it must be a declining species within the county, as I now very rarely find any specimens. It will be interesting to monitor this species in future and see if it is really in decline or merely suffering a temporary setback.

I would like to thank all those Members who gave me specimens during 1982 and to appeal to all Members to submit at least one or two snail shells to me during 1983. Every single record counts and I do appreciate any help that I can obtain.

E. B. RANDS

THE SPIDERS AND HARVESTMEN OF OLD WARDEN TUNNEL NATURE RESERVE

PART I: THE EXPERIMENTAL PROCEDURES AND THE FLORA by T. J. Thomas, 142 Selbourne Road, Luton, Beds.

INTRODUCTION

Various collecting procedures, e.g. beating, sweeping, have been used to establish the spider and harvestmen species present on the Nature Reserve at Old Warden Tunnel. However, these, like most methods, have their drawbacks and so need supplementing, especially if a comprehensive list of the arachnid fauna is to be achieved. Pitfall-trapping is an easily applied technique although it has its faults, mainly in that only ground-dwelling creatures are likely to be taken.

This report gives an account of the results from a pitfall-trapping experiment carried out in three selected areas of the above-named Nature Reserve. There were three objectives in using this collecting method: i) to add to the species list for this site, ii) to establish the activities of those species captured in abundance and iii) if possible, to compare and contrast the numbers and species present in three selected areas of the Reserve which are under different management regimes. All this is in line with the aims expressed in the 1980 Spider Recorder's Annual Report (Thomas 1981).

The Reserve is at Grid reference TL112448 (tetrad TL14C) and is a section of the disused Leicester-Hitchin railway line; it is leased from the Whitbread Estates as a Nature Reserve (see Reserves Handbook). The site contains habitats similar to some of those lost because of modern farming practices. This applies particularly to the Cutting where, during the working life of the railway, the sides were scythed, raked and burned in order to maintain a stable slope, to ensure good visibility for the train crews and to lessen the risk of fire, i.e. during the steam locomotive age. This management, carried out twice a year – in May and September – established a flora similar to that of the old hay meadows. The present management plan allows one mowing a year – in January or February – of the south-west facing slope to maintain this flora. Grazing by rabbits is not actively discouraged although ferreting and shooting is carried out by the Estates' gamekeeper, and the rabbit warrens are gassed once a year, in late winter, before the breeding season. The remainder of the Cutting is being allowed to "scrub-over" to provide extra cover for birds and the smaller mammals.

THE THREE TRAPPING AREAS

The three areas selected for the pitfall-trapping experiment are all in the Cutting section of the Nature Reserve (Fig. 1). Two of these areas, B and C, are directly opposite each other on the Cutting sides, and are at approximately the same height, as is the third area A, which is above and behind the tunnel mouth.

The Cutting lies on a north-west/south-east line. Thus Area A faces directly north-west and is open to the wind whereas the other two areas, in some measure, are protected by the screens of scrub and incipient woodland between them and the open end of the Cutting. This sheltering effect is particularly noticeable in the winter months.

As Area B faces south-west, it is exposed to the sun for most of the daytime and, being fairly close-cropped as it is part of the managed section of the Cutting, it may warm up and cool down more rapidly than the other two areas with their denser cover.

Various workers have suggested that the structures of plants in a site are important in determining the spider community of that site. For example, Duffey (1962) points out that variations in the physiognomy of the vegetative cover are reflected in significant changes in the dominant spider species. In 1981 Dr J. G. Dony and Mrs C. M. Dony surveyed the three areas for their flora, the results of which are given in Tables 1 and 2.

Species	Area		
	A	B	C
<i>Crataegus monogyna</i> Hawthorn	1 (10cm)	6 (25cm)	5 (60cm)
<i>Quercus robur</i> Penduculate Oak	1 (10cm)	1 (10cm)	—
<i>Rosa canina</i> Dog Rose	3 (3m)	3 (1.5m)	1 (60cm)
<i>Arrhenatherum elatius</i> False Oat-grass	fa	—	—
<i>Brachypodium pinnatum</i> Tor-grass	fa	la	a
<i>Briza media</i> Quaking-grass	r	—	—
<i>Bromus erectus</i> Upright Brome	—	la	—
<i>Dactylis glomerata</i> Cock's-foot	—	r	—
<i>Poa trivialis</i> Rough Meadow-grass	r	r	o
<i>Achillea millefolium</i> Yarrow	—	r	—
<i>Agrimonia eupatoria</i> Agrimony	—	r	o
<i>Blackstonia perfoliata</i> Yellow-wort	—	f	—
<i>Carex flacca</i> Glaucous Sedge	f	f	f
<i>Centaurea nigra</i> Common Knapweed	o	o	—
<i>Centaureum erythraea</i> Common Centaury	r	r	r
<i>Cirsium acaule</i> Dwarf Thistle	—	o	r
<i>C. arvense</i> Creeping Thistle	—	—	r
<i>Clinopodium vulgare</i> Wild Basil	f	r	o
<i>Crepis capillaris</i> Smooth Hawk's-beard	r	—	—
<i>Daucus carota</i> Wild Carrot	—	r	—
<i>Equisetum arvense</i> Field Horsetail	lf	—	—
<i>Galium mollugo</i> Hedge Bedstraw	r	—	—
<i>Heracleum sphondylium</i> Hogweed	r	—	—
<i>Hieracium pilosella</i> Mouse-ear Hawkweed	r	f	—
<i>H. strumosum</i> Hawkweed	r	—	—
<i>Hypericum hirsutum</i> Hairy St. John's-wort	—	—	f
<i>H. perforatum</i> Perforate St. John's-wort	—	r	—
<i>Lathyrus pratensis</i> Meadow Vetchling	r	r	o
<i>Leontodon hispidus</i> Rough Hawkbit	—	r	—
<i>Leucanthemum vulgare</i> Oxeye Daisy	f	—	—
<i>Linum catharticum</i> Fairy Flax	r	r	r
<i>Lotus corniculatus</i> Common Bird's-foot-trefoil	—	r	—
<i>Ophrys apifera</i> Bee Orchid	—	r	—
<i>Pimpinella saxifraga</i> Burnet-saxifrage	r	o	o
<i>Potentilla reptans</i> Creeping Cinquefoil	r	r	r
<i>Poterium sanguisorba</i> Salad Burnet	o	—	—
<i>Primula veris</i> Cowslip	o	—	—
<i>Ranunculus repens</i> Creeping Buttercup	r	—	—
<i>Senecio erucifolius</i> Hoary Ragwort	—	r	r
<i>Silva silaus</i> Pepper-saxifrage	—	f	—
<i>Tussilago farfara</i> Colt's-foot	r	—	—
<i>Vicia cracca</i> Tufted Vetch	r	—	—
<i>Viola hirta</i> Hairy Violet	f	r	o
Total species	28	28	17
Key			
a — abundant	f — frequent	o — occasional	
fa — frequent to abundant	lf — locally frequent	r — rare	

Table 1. The flora of the three sites (Dony and Dony, 1981)

Feature	Area		
	A	B	C
Aspect	NW	SW	NE
Slope, degrees	30	30	30
Vegetative cover, %	95	90	100
Vegetation height, m	1.0	0.6	0.6

Table 2. Some features of the three sites

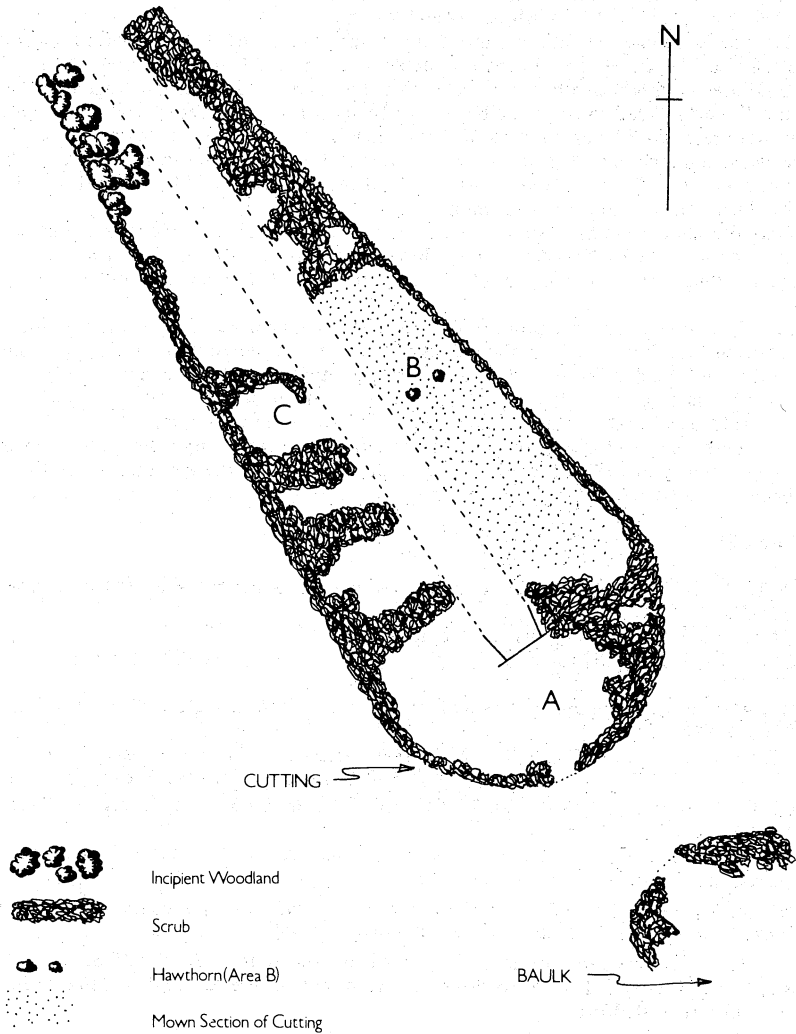


Fig. 1. The Cutting – Old Warden Tunnel Nature Reserve (not to scale)

THE PITFALL TRAPS

Between September 1977 and June 1978 pitfall traps were set into the three selected areas. A few pots were added at monthly intervals until each area had an array of 4 x 4 pots, each being set at a measured 6' from its neighbour, forming a square 18' x 18' (30m²). This gradual approach was intended to cause as little disturbance as possible to the areas and, also, to avoid any possible "digging-in" effect, e.g. as reported by Greenslade (1973), though his work was on ants. (It had been found that freshly set pitfalls had high catches initially in comparison to later captures). After four months, in November 1978, the areas were checked and the arrays remeasured to ensure that the pitfalls had been set correctly.

The pots were glass jars of a nominal 120ml capacity a mouth diameter of 28mm and a depth of 90mm. The sixteen pots in any area accounted for 0.03% of that trapping area.

Undiluted commercial antifreeze was used as the killing and preservative agent in the traps, enough being added to cover the bottom of the pot. Fresh antifreeze was used each time the traps were reset after being emptied of their catches. Each pot was always set so that its lip was level with, and meeting, the soil surface. The removal of the catches was carried out on the first Sunday morning of each calendar month so that the captures could be thought of as having been alive during the previous calendar month.

Only the spiders and harvestmen were sorted out, and where possible, were identified to the species and sex. The handbooks used for these identifications and nomenclature were, Locket and Millidge (1951, 1953), Locket, Millidge and Merrett (1974) and Sankey and Savory (1974).

Pitfall-trapping is a simple procedure to use although, because of the many variables that can be involved (Southwood 1978), the results have to be interpreted with caution. For this experiment at Old Warden Tunnel, the following assumptions have been made:

- (i) The pitfalls have not interfered with, or modified, the habitat.
- (ii) The antifreeze used does not attract, nor repel, any potential victim.
- (iii) The presence of victims in the traps do not attract, nor repel, any other potential victim.
- (iv) The efficiency of the traps does not vary, nor depend upon the area into which they have been placed (Curtis 1980).

REFERENCES

- CURTIS, D. J. 1980. Pitfalls in spider community studies (Arachnidae, Araneae). *J. Arachnol* 3 271-280.
- DONY, J. G. and DONY, C. M. 1981. Pers. comm.
- DUFFEY, E. 1962. A population study of spiders in limestone grassland. *J. Anim. Ecol.* 31 571-599.
- GREENSLADE, P. 1973. Sampling ants with pitfall traps : digging-in effects. *Insectes Soc.* 20 (4) 343-353.
- LOCKET, G. H. and MILLIDGE, G. H. 1951. *British Spiders*. Vol I. Ray Society, London.
- 1953. *British Spiders*. Vol. II. Ray Society, London.
- LOCKET, G. H., MILLIDGE, A. F. and MERRETT 1974. *British Spiders* Vol III. Ray Society, London.
- SANKEY, J. H. P. and SAVORY, T. H. 1974. *British Harvestmen. Synopses of the British Fauna (New Series)* No. 4. Academic Press.
- SOUTHWOOD, T. R. E. 1978. *Ecological Methods with particular reference to the study of Insect Populations*. 2nd Ed., revised. Chapman and Hall.
- THOMAS, T. J. 1981. Spiders (Araneae). Report of the Recorder. *Bedf. Nat* 35 30-31.
- RESERVES HANDBOOK. The Bedfordshire and Huntingdonshire Naturalists' Trust Ltd., 38 Mill Street, Bedford.

SPIDERS (Araneae)

Report of the Recorder

By the end of 1982 collecting had been done in 75% of the Bedfordshire tetrads. Only one new spider species was taken, implying that the present method of surveying for the spider fauna has begun to show its limitations (cf: Report for 1980 (*Bedf Nat* 35 30-31)). The time is now ripe for a review of the situation, and to consider looking at the arachnid fauna of the natural regions of the county rather than using the tetrad system alone.

One sighting, during the year, was of the elusive *Pholcus phalangioides*. A single specimen was seen in a Luton house but not taken. There have been no further sightings. This species should be more common than its present distribution suggests, for at this moment in time, only two records exist. This paucity of data, not only on this spider, but also on other "household" species, may well be due to the natural reluctance of people to take and send in specimens. If the Society's members are not prepared to help in gathering this type of information, then there is no point in the presentation of an Annual Report.

Two more literature references were noted on spiders in Bedfordshire.

ADDITIONS TO THE COUNTY LIST

Family LINYPHIIDAE

Moebelia penicillata (Westring)

REFERENCES

31. LAURENCE, B. R. 1949 Observations on *Microphorus crassipes* Macq: (Dipt. Empididae). *Ent. Mon. Mag.* 84 282-283.
32. RUSSELL-SMITH, A. 1983 An empidid fly that feeds on spider's prey. *Newsl. Br. Arachnol. Soc.* No: 36, p.5.

T. J. THOMAS

GRASSHOPPERS AND CRICKETS (Orthoptera/Saltatoria)

Report of the Recorder

This was the poorest year for new records since the distribution maps of species were published in the Journal for 1977 (*Bedf. Nat.* 32 25-30). It does indicate that the mapping of the Orthoptera in the county is nearing completion. The odd record will always be found but these have ceased to have any effect on the known distribution patterns for the individual species.

The Common Green Grasshopper is an elusive species to find and quite often has only been located by sound. They only sing on a warm sunny day, the record this year being found in that way in the old chalk pit on Barton Hills.

Two records for the Common Ground Hopper were useful additions. This is a species that will never be known whether it is a relative rarity in the county or just difficult to locate.

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

Common Green Grasshopper – 1 tetrad 03 V

Common Field Grasshopper – 1 tetrad 95 T

Meadow Grasshopper – 1 tetrad 92 D

Common Groundhopper – 2 tetrads 92E, J

ACKNOWLEDGEMENTS

I would like to thank V.W. Arnold, B.S. Nau, Mrs. M. Sheridan for their records.

D.G. RANDS

DRAGONFLIES (Odonata)

Report of the Recorder

I am pleased to report that in 1982 I received 16 new 10 Km square records for the county, although no new species were recorded. The national Odonata Recording Scheme continues to expand its coverage, and anyone interested can buy an up-to-date set of maps showing the distribution of all the dragonflies in Great Britain. This costs £2 (including p. and p.) from the scheme organiser, Mr Bob Merritt, 48 Somersby Ave., Walton, Chesterfield, Derbyshire S42 7LY. There is even now a British Dragonfly Society, newly formed, that sends out newsletters and holds field meetings – one in the New Forest in July 1982 recorded 21 species! It costs £3 to join the Society – cheques should be made out to the British Dragonfly Society and sent to the treasurer Mr R. Dunn, The Northwood Social Club, Darley Dale, Matlock, Derbyshire DE4 2HQ.

Sites that are of regional or county importance for dragonflies are being considered by the Nature Conservancy Council for scheduling as Sites of Special Scientific Interest (SSSIs), so please continue to send me records from your favourite stamping grounds. My thanks are due for 1982 records to Messrs E. Newman, B. Inns, K. Webb, M. Tizzard and Mrs Horton.

NANCY DAWSON

HOVERFLIES (Diptera – Syrphidae)

Report of the Recorder

The first hoverfly seen in 1982 (on April 3rd) was a new species for the county, but after this exciting start no further additions followed.

Cheilosia grossa is known to be an early species, and I had taken it in Herts and Derbys in April in other years. Each time it was in an open habitat, aggressively monitoring its area, so that one simply has to hold a net in the air until its instinct to challenge brings it near enough to catch and examine.

Eristalis tenax was late appearing, as last year, and persisted well into October in numbers, with the mild autumn. Earlier, another of the same genus, *E. nemorum*, had been commoner than usual.

The normal increase in numbers of the common species, *Episyrphus balteatus*, was very sudden this year in our county in July.

Anasimyia contracta was taken near its known host-plant, reed mace, at another site besides Flitwick Moor, so it may be more common than thought previously.

In all, the season's activity led to 23 new 10 Km. records. I thank Dr B.S. Nau and Mr P. Spittel for specimens and records.

NEW SPECIES FOR THE COUNTY

Cheilosia grossa, field near George Wood, Luton (found also in 1944-9).

N.F. JANES

BUGS (Hemiptera – Heteroptera)

Report of the Recorder

This year has been one of further consolidation, with two additional species for the county (total now 315 species), and a steady increase in coverage of the county under my 10 km mapping project. One of the new species is a Heather species, *Kleidocerys truncatulus*, this was a surprise since I thought I had worked the very restricted heather in Beds quite thoroughly. Interestingly this bug has a relative, *K. resedae* (Panzer), usually found on Birch and Alder but, in recent decades, found on Rhododendron. It has been suggested that these latter bugs are of American origin introduced with Rhododendron. This year I noted the bug on Rhododendron at Rushmere, Heath and Reach. Two other similar introductions occur in the county: the plant bug *Dicyphus rhododendri* and the leaf-hopper *Graphocephala coccinea* (Cicadellidae).

It is pleasing to report that three of the county's specialities survived the uniquely severe winter of 1981-82. *Placochilus seladonicus* was re-found at its Leighton Buzzard site on 8th Aug after a blank year in 1981. *Campylomma annulicornis* was at Fenlake on 12th September and *Monosynamma sabulicola* was at Odell on 25th July.

A highlight was the discovery of my first Bedfordshire *Palomena prasina*, a large green shield-bug allegedly "common and widely distributed" in England and Wales (Southwood and Leston, 1959). In the London area there is a good number of records (Groves, E.W. 1964. *The London Naturalist* 43 34-66) from Kent, Surrey and S. Bucks but none from Herts (I have one record) and only one from Essex. Certainly I have seen it commonly in the Isle of Wight, but I suspect that this is really a southern species which is scarce north of the Thames.

Lygocoris populi is a bug of White Poplar and Grey Poplar only discovered in 1957. I recorded it in Beds in the mid-seventies and was stimulated to re-find it this year when a Dutch hemipterist wrote to me asking about the colour of the British specimens, having found that Dutch specimens did not agree with Southwood and Leston's (1959): "blue-green, very pale when alive". I did not recall that mine had matched this description so I went to two suitable sites, at Maulden and Tingrith, in August and obtained fresh specimens. These were almost indistinguishable in colour from the common *L. pabulinus* – which occurred with my *L. populi*. It seems that the key is indeed misleading on the colour of this bug.

This year saw additional localities established for several scarce species: *Acetropis gimmerthali* at Flitwick Moor on *Deschampsia flexuosa* on bare peat, *Charagochilus gyllenhali* at Sewell cutting on *Galium*, and *Metatropis rufescens* on Enchanters Nightshade in Kings Wood, Houghton Conquest.

During August and September I made a special effort to map the large green Hawthorn Shield-bug *Acanthosoma haemorrhoidale* and found it common on haws everywhere I looked in the county.

ADDITIONS TO THE BEDFORDSHIRE LIST

LYGAEIDAE

Kleidocerys truncatulus (Walker) – fairly common on *Calluna vulgaris* at Coopers Hill L.N.R. on 22 August 1982.

MIRIDAE

Orthocophalus coriaceus (Fabricius) – single individuals from Fox Corner, Heath and Reach on 20 June and 17 July 1982 proved to be this species rather than the commoner, but local, *O. saltator*. The habitat was a sunny sandy slope with a sparse vegetation comprising mainly annual herbs.

B.S. NAU

MOTHS (Lepidoptera)

Report of the Recorder

During 1982, thanks to the reasonable weather, a great deal of field work was carried out at a variety of sites in the county. This has helped to provide a clearer picture of the current status of the 'macro' moths of Bedfordshire. It was a pity that due to ill health, I was not able to participate as much as I would have liked.

Cople Pits Nature Reserve was worked intensively by W.J. Champkin, S. Finney and R. Passley and they produced an interesting list of 147 species.

A. Muir-Howie and R. Parsonage continued with their sites at Bromham and Great Barford, but also trapped in Dr J.T. Sharrock's garden at Blunham.

J.B. Barnwell's site at Aspley Heath produced the usual interesting records – the colony of (87) Pine Hawk moths appear now to be much stronger than was at first thought, with approximately six moths coming to light per night, over a period of several weeks.

T.S. Hollingworth ran traps at both Cranfield and Stotfold, the one at Cranfield catching large numbers of (200) Garden Tigers.

K.F. Webb not only worked with his light trap in Luton, but also had considerable success with 'sugaring' at Brogborough. This consists of painting a mixture of black treacle, dark sugar and beer on to tree trunks, fence posts etc., and then seeing what is attracted by the smell. This used to be a favourite method among the early entomologists, but dropped out of favour with the advent of mercury vapour lamps.

Work continued at both Flitwick Moor and Maulden Wood, but it becomes more difficult to find new species as each year passes. It was pleasing to find that the (668) Light Orange Underwing was seen by several people flying in the sunshine during late March in Maulden Wood. The Society's annual all-night meeting here also produced a good list that included (672) Large Emerald, (673) Blotched Emerald and (845) Haworths Pug. The day flying (222) *Cistus Forester* was quite common on Dunstable Downs in June – this metallic green moth was seen in bright sunshine, visiting flowers. Two species that are normally common, (615) Mother Shipton and (616) Burnet Companion, appeared to be scarce in 1982, with only odd sightings on Dunstable Downs.

Two other day flying species of interest were also recorded during the year – (229) Currant Clearwing from Biggleswade by R. Revels and (238) Six Belted Clearwing from Stanbridgeford by B. Inns.

Records show that the following species had a good year, (142) White Satin, (147) Pale Eggar, (446) Large Clouded Brindle, (447) Cloud-bordered Brindle, (490) Orange Ear, (568) Large Ranuncule, (610) Red Underwing and (933) London Brindled Beauty. Although it is quite possible that these are directly attributable to the increase in field work now being done in the county.

1982 will probably be remembered as being a good year for migrant species. These included (82) Deaths Head Hawk from Biggleswade and Billington, (83) *Convolvulus Hawk* from two sites in Bedford and (97) Hummingbird Hawk which was seen in various parts of Bedfordshire. Also seen were (340) Dark Bordered Straw from Bidwell, (531) Pale Wormwood Shark from Blunham and finally, a moth that appeared, this year, to be everywhere (635) Common Silver Y.

SPECIES LIST

The following list contains new species and species of particular interest with comments where required. Species marked * are new county records. All numbers and English names as per *Checklist of the British Lepidoptera* by I.R.P. Heslop (1964 Library Edition).

- 122 Large Chocolate-tip Taken at light, 21/5/82 Sutton Fen, nr Biggleswade. A very local insect, with few records for the county.

- 320 **Green Arches** At light 21/6/82 Cranfield, by T.S. Hollingworth. This very attractive moth is very under-recorded for Bedfordshire.
- 360* **Beautiful Brocade** Taken at Cranfield, by T.S. Hollingworth on 19/5/82. More records are needed but care should be taken with this moth to avoid confusion with very similar species.
- 371 **Tawny Shears** Appears to be a scarce insect in the county – taken at light by A. Muir-Howie (Bromham) and K.F. Webb (Luton).
- 391 **Pine Beau** Appears to be confined to the greensand ridge in the county – does reach pest proportions in parts of Scotland. At light during 1981 at Aspley Heath.
- 423 **Bulrush Wainscot** Can be quite common in areas where its food plant, reedmace, is found. At light by W.J. Champkin at Cople Pits and K.F. Webb in Luton.
- 424 **Twin Spot Wainscot** At light, Stotfold, by T.S. Hollingworth. This is only the second known site for this species.
- 442 **Reddish Light Arches** Recorded by K.F. Webb from Luton where its stronghold appears to be on the chalk.
- 457 **Double-lobed** Another local species – recorded in 1982 from K.F. Webb's trap in Luton and T.S. Hollingworth's trap at Stotfold.
- 562 **Dark Brocade** At light, by W.J. Champkin, at Cople Pit. This is the first record since 1978 – not a common moth.
- 579 **Flounced Chestnut** A moth that occurs in various aberrations in the county. Recorded by K. F. Webb from his trap in Luton during 1982.
- 585 **Common Sallow** A good year for this attractive autumn species – K.F. Webb recorded ab. *imperfecta* during the year. This species comes readily to light and to 'sugar'.
- 588 **Pale Lemon Sallow** K.F. Webb had quite good numbers to 'sugar' during the autumn on poplars in the Brogborough area. The only other records were for single specimens from Maulden Wood (1976) and Old Warden (1979).
- 731 **Narrow-barred Carpet** Also known as 'The Gem' this migratory species was recorded from a Rothamsted trap at Eaton Bray in 1981.
- 755 **Royal Mantle** At light on 13/7/82 by K.F. Webb at Kingsdown Avenue, Luton. The last record was over 50 years ago at Pegsdon. It is always pleasing to get records for species new to the county, but it is far more satisfying to 'rediscover' one that was feared had become extinct!
- 803 **Slender Treble-bar** Recorded from waste ground near the Ouse at Kempston by R.B. Stephenson – another local species.
- 851* **Pinion-spotted Pug** First county record from a Rothamsted trap at Eaton Bray in 1981. A. Muir-Howie also took a specimen at light from his trap at Bromham on 19/5/82.
- 858 **Satyr Pug** Taken at a Rothamsted trap at Cockayne Hatley during 1981. This is the first county record since this species was recorded in V.C.H.
- 861* **Ling Pug** Taken at a Rothamsted trap at Cockayne Hatley in 1981. This species could have been 'windblown' from the greensand ridge, or have come from a cultivated form of its food plant being grown locally.
- 922 **Scorched Wing** Quite common at Aspley Heath during the year.
- 958 **Common Heath Beauty** Taken by R.B. Stephenson from the same site as species (803). Normally found in short grass on the Pegsdon Hills.
- 959 **Bordered White Beauty** Sometimes comes to light in vast numbers, as at Maulden Wood in 1976, this year only recorded from Aspley Heath!
- 961 **V Looper** Recorded from J. Barnwell's trap at Aspley Heath and K.F. Webb's trap in Luton – never many records for this attractive moth.

REFERENCE

BARRETT, C.G. 1904 *Lepidoptera. Victoria County History of Bedfordshire* 1 78-88 (Abbreviated V.C.H.).

ACKNOWLEDGEMENTS

My thanks go to the following for records, help and assistance: J.B. Barnwell, Miss R. Brind, G.J. Buss, G. Castle, W.J. Champkin, R. Collings, W. Drayton, S. Finney, D. Green, S.F. Halton, T.S. Hollingworth, B. Inns, D.V. Manning, A.J. Martin, A. Muir-Howie, R. Parsonage, R. Passley, D.G. Rands, R. Revels, A. Riley, Dr J.T. Sharrock, S. Sheridan, B. Squires, R.B. Stephenson, T.J. Thomas, Mrs J. Walford, K.F. Webb, M. West and I. Woiwod.

V.W. ARNOLD

BUTTERFLIES (Lepidoptera) Report of the Recorder

The Year of the Butterfly started in May 1981 and continued until the autumn of 1982. It got off to a bad start and in my report last year (*Bedf. Nat.* 36 44-46) I was concerned about the severe frosts and flooding that had occurred as the year changed over to 1982. It was with great relief, therefore, that I was able to welcome the heavy snow falls and sub-zero temperatures that took place in the first months of the New Year. This type of severe winter appears to redress any out of balance that mild winters cause between predator and prey species, and with a mild spring and the warm and often damp summer, the Year of the Butterfly ended in a riot of colour with summer butterflies queuing up to feed at the nectar bearing flowers in August and September.

Once again the Holly Blue did not breed well with very few sightings, but this species has a very variable population density and can be scarce for many years before becoming common once more. Similarly affected are the White Letter Hairstreak and the Small Copper but the conditions of 1982 seem to have favoured the Small Copper as it was seen in very large numbers in places. Experienced observers, such as Vic Arnold, reported that they had never seen so many individuals of this species gathered together. While the Grizzled Skipper did very well all across the county with many new sites reported, especially by Anne Doody working in the northern half of the county, Barry Stephenson reports that the riverside colony in the centre of Bedford town has failed to appear again for the second year running and is now probably extinct. All the other common species seem to have had a productive year with large numbers of Comma, Peacock, Small Tortoiseshell, Red Admiral and Painted Lady butterflies well in evidence. In fact Small Tortoiseshell larvae reached near plague proportions in the nettle beds of the hedgerows in August with masses of these larvae stretching for hundreds of yards of hedge in places.

Other species very common this year were Meadow Brown, Ringlet, Marbled White and Small White but the normally common Gatekeeper seemed scarce in comparison, as did the Small Heath. It is worth noting that many more small species were seen this year. I have already mentioned the Small Copper and Grizzled Skipper, but others such as the Purple Hairstreak, Green Hairstreak, Duke of Burgundy and Large and Small Skippers were also well recorded.

The White Admiral increased its numbers in Marston Thrift and West Wood and so it is hoped that it will spread out into adjacent woods, as the Marbled White has spread from its habitat. This species is still heading northwards and was recorded for the first time (in modern records) from Sharnbrook Summit by Anne Doody this year.

For various personal reasons neither Vic Arnold or myself were able to get out as much as we would normally and so our records were more sparse than either of us would have preferred but the other contributors made up for our shortfall and it has taken me very many hours to correlate the hundreds of records I have received. The map published last year showing tetrads with less than five species recorded is now redundant, so a new one is published this year showing

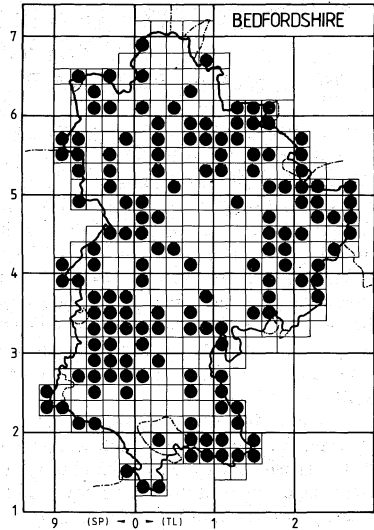
the tetrads with less than ten species and it should be noted that less than half of the county falls into this category. This is indeed a tribute to all the persons listed at the end of this report for without them this task would be completely impossible.

Finally this year's amusing tale concerns the recording of a Red Admiral butterfly for the outskirts of Luton "Specimen - Red Admiral (Dead). Blown out of a central heating vent by a mild explosion in the system". Fortunately this species is also recorded live from the same area.

ACKNOWLEDGEMENTS

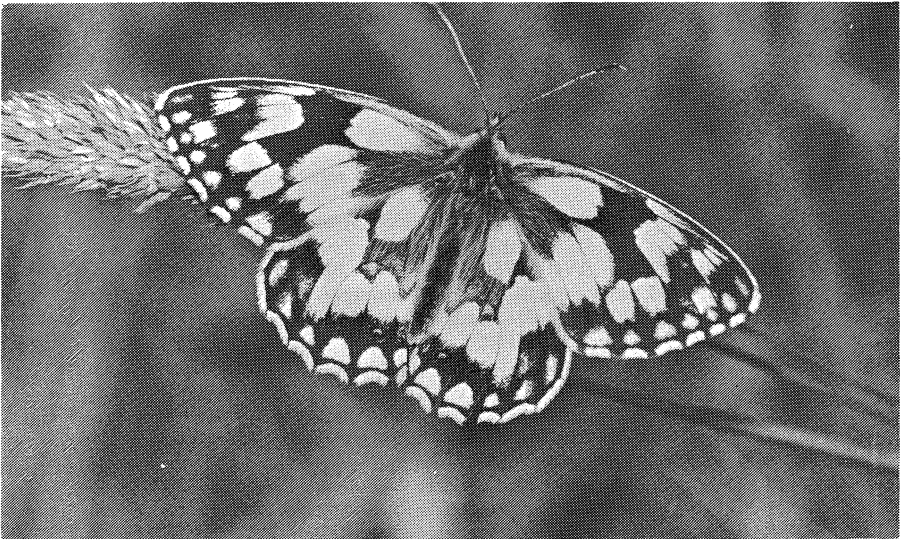
My sincere thanks to the following for sending in the records:

D. Anderson, V. Arnold, J. Barnwell, C. Burton, G. Castle, G. Clarke, B. Clutton, F. Davies, Dr and Mrs J. Dony, A. Doody, W. Drayton, Mrs Greenhall, S. Halton, T. Hollingsworth, C. Holmes, Mr and Mrs Hooper, A. Horder, C. Horton, B. Inns, M. Izzard, D. King, D. Manning, B. Nightingale, D. Odell, J. Payne, V. Peck, M. Rowler, J. Schneider, M. Sheridan, A. Smith, B. Squires, B. Stephenson, T. Thomas, Mr and Mrs K. Weedon.



Tetrads with fewer than 10 records

ALAN J. MARTIN



Marbled White Butterfly (photo: R. Revels)

A CHECKLIST AND BIBLIOGRAPHY OF COLEOPTERA IN BEDFORDSHIRE

by B. S. Nau, Ph.D., 15 Park Hill, Toddington, Dunstable, Beds.

In Bedfordshire the beetles have been studied only rather intermittently. When a list was required for the Victoria County History, in 1902, a Birmingham coleopterist visited the county for the purpose. The next major contribution came from a Carlisle coleopterist, Day, who spent a few days at Tempsford in June 1923. Also in the 1920's, Williams of Harpenden collected in the south of the county but his records were only published after his death, by Roche in 1942. The late 1940's and 50's were a period of considerable activity with the publication of many new records by Roche, MacKechnie Jarvis and Verdcourt. In recent years I have devoted some time to this group, particularly the Carabidae for the national recording scheme, and various families in the course of detailed studies of the Maulden Woods area. Also in recent years Dr Jones has been working on Staphylinidae in the county. The reader interested in a detailed historical account is referred to Jarvis' 1946 paper in the first issue of the BNHS Journal.

The results of the above and other miscellaneous published notes has produced a list of species for the county which stands in excess of 1200, a rather modest proportion of the 4000+ British species. Since the county records are distributed over many publications and span numerous changes of nomenclature it has seemed appropriate to produce a new consolidated list using modern nomenclature. For this purpose the Kloet and Hincks 1977 checklist of British Coleoptera has been used. In most cases it has been possible to translate old names but in some instances this could not be done with certainty. The importance of quoting the author of scientific names cannot be over-emphasised in a group where nomenclature is still fluid, without this many more records would have been lost.

The checklist has been annotated to indicate the sources of species records and an extensive bibliography cross references to the annotations. The bibliography is as near complete as possible but undoubtedly omissions will come to light. The author would welcome any such additions or amendments to either the bibliography or checklist.

The checklist will be published in sections in systematic order.

REFERENCES

KLOET and HINCKS 1977 *Handbook for the identification of British insects* XI 3 Roy. Ent. Soc., London.

BIBLIOGRAPHY

- 1 AIRY SHAW, H.K. 1945 *Cis bilamellatus* (Ciidae) abundant in S. Beds. *Ent. mon. Mag* 81 54.
- 2 BALFOUR-BROWNE, F. 1940, 1950, 1958 *British Water Beetles*, Ray Society, London.
- 3 BROWN, J.M. 1937 Some insects from Bedfordshire. *Ent. mon. Mag* 73 235.
- 4 CRAWSHAY, G.A. 1905 *Harpalus discoideus* F. and *Metoeus paradoxus* L. at Leighton Buzzard. *Ent. mon. Mag.* 41 45.
- 5 — 1905 Further notes on the capture of *Amara anthobia* Villa etc. *Ent. mon. Mag* 41 159.
- 6 — 1905 *Tetropium* sp.? at Leighton Buzzard. *Ent. mon. Mag.* 41 223.
- 7 — 1907 The life history of *Tetropium gabrieli* Ws (= *T. crawshayi* Sharp). *Trans. Ent. Soc.* 55 183-212.
- 8 DAY, F.H. 1923 Coleoptera in Bedfordshire. *Ent. mon. Mag* 59 256-257.
- 9 DONISTHORPE, H. St J 1931 *An annotated list of the additions to the British Coleopterous fauna* Reeve, London.
- 10 FOWLER, W.W. 1902 Insects: Coleoptera. *Victoria County History of Bedfordshire* Vol 1, 71-78.

- 11 FOWLER, W.W. and DONISTHORPE, H. St J. 1913 *The Coleoptera of the British Islands*. Vol 6, Reeve, London.
- 12 GIMINGHAM, C.T. and THOMAS, I. 1948 The Colorado Beetle in England, 1947. *Agriculture* 55 55-63.
- 13 JANES, N.F. 1978 Fish skin week in Maulden Wood. *Bedf. Nat.* 32, 40-43.
- 14 JARVIS, C.McK. 1944 *Aromia moschata* (Cerambycidae) in Beds. *Ent. mon. Mag.* 80 212.
- 15 — 1944 *Brachypterolus vestitus* in Beds. *Ent. mon. Mag.* 80 237.
- 16 — 1944 *Agapanthia villosoviridescens* in Beds. *Ent. mon. Mag.* 80 264.
- 17 — 1944 *Phytoecia cylindrica* (Col. Cerambycidae) in Beds. *Ent. mon. Mag.* 80 287.
- 18 — 1945 Additions to the Bedfordshire List of Coleoptera *Ent. mon. Mag.* 81 126-127.
- 19 — 1946 The Study of Coleoptera with special reference to Bedfordshire. *J. Beds. Nat. Hist. Soc* 1 32-35.
- 20 — 1950 Further additions to the Beds. list of Coleoptera. *Ent. mon. Mag.* 86 304-305.
- 21 KAUFMANN, R.R.U. 1946 British Longicorn (Col.) records. *Ent. mon. Mag* 82 103-104; 83, 191-194; 84 66-85.
- 22 LAURENCE, B.R. and VERDCOURT, B. 1947 Cerambycid (Col) and Asilid (Dipt.) records from Kings Wood, Beds. *Ent. mon. Mag.* 83 197.
- 23 LINDROTH, C.H. 1974 *Handbooks for the identification of British insects: IV 2 Coleoptera, Carabidae*. Roy. Ent. Soc., London.
- 24 MOORE, B.P. 1957 The British Carabidae, Pt II: The county distribution of the species *Ent. Gazette* 8 171-181.
- 25 MORRIS, M.G. 1967 Differences between the invertebrate fauna of grazed and ungrazed chalk grassland. Pt. I. *J. appl. Ecol.* 4 459-474.
- 26 — 1982 *Ceutorhynchus turbatus* Schultze (Col., Curculionidae) in Dorset, Beds and N. Essex. *Ent. mon. Mag.* 118, 241.
- 27 NAU, B.S. 1977 Beetles in a garden light trap *Bedf. Nat.* 31 66-67.
- 28 — 1979 Additions to the county list of Ground Beetles *Bedf. Nat.* 33 62-64.
- 29 — 1980 Some insect records from Beds. during 1979. *Bedf. Nat.* 34 53-54.
- 30 NAU, B.S. and RANDS, E.B. 1974 Field work in Maulden Wood *Bedf. Nat.* 28 52-56.
- 31 NILES, J.R.A. 1977, 1978, 1979 Ladybird Beetles (Col., Coccinellidae): Report of the Recorder. *Bedf. Nat.* 31 63-65; 32 39; 33 62.
- 32 PEARCE, E.J. 1948 Pselaphidae (Col.) — new county records. *Ent. mon. Mag.* 84 87-88.
- 33 ROCHE, P.J.L. 1942 Additions to the Beds. list of Coleoptera. *Ent. mon. Mag.* 78 242-244.
- 34 — 1943 Two scarce Longicorn beetles in Beds. *Ent. mon. Mag.* 79 144.
- 35 — 1944 Further additions to the Beds. list of Coleoptera. *Ent. mon. Mag.* 80 30.
- 36 VERDCOURT, B. 1945 *Aromia moschata* in Beds. *Ent. mon. Mag.* 81 50.
- 37 — 1945 Observations on the fauna of static water tanks. *Ent. mon. Mag.* 81 141.
- 38 — 1946 *Aulonium trisulcum* Geoff in Fourc. (Col., Colydiidae) in Beds. *Ent. mon. Mag.* 82 277.
- 39 — 1948 The habitat of *Alphitophagus bifaciatus* Say, etc (Col., Tenebrionidae). *Ent. mon. Mag.* 84 98.
- 40 — 1949 *Agapanthia villosoviridescens* in S. Beds. *Ent. mon. Mag.* 85 216.
- 41 — 1952 Further records of Beds. Coleoptera. *Ent. mon. Mag.* 88 73-80.
- 42 WILLIAMS, B.S. 1928 *Helophorus nanus* Sturm in Beds. *Ent. mon. Mag.* 64 234.
- 43 — 1930 *Staphylinus fulvipes* Scop. in Beds. *Ent. mon. Mag.* 66 140.
- 44 WOOD, T. 1899 *Dynastes hercules* in Beds. *Ent. mon. Mag.* 35 44.

CHECKLIST OF BEDFORDSHIRE COLEOPTERA : (1) CARABIDAE TO HISTERIDAE

ABBREVIATIONS

The numerical subscripts denote the year of publication where this is necessary for clarity.

BB — Balfour-Browne
Cr — Crawshay
D — Day
J — Jarvis
L — Lindroth
M — Moore

N — Nau
NJ — Janes
R — Roche
V — VCH (Fowler)
V52 — Verdcourt
W — Williams

NUMBER OF SPECIES

Ground beetles:				
Carabidae	165	Gyrinidae	5	
Water beetles:		Hydrophilidae	38	
Haliplidae	10	Histeroidea:		
Hygrobiidae	1	Histeridae	12	
Noteridae	1			
Dytiscidae	42			
		TOTAL	274	

CARABIDAE			
<i>Cicindela campestris</i> L	V,N,M	V52	<i>B.dentellum</i> (Thunberg)
<i>Cychnus caraboides</i> (L)	V,V52,M,N		<i>B.varium</i> (Olivier)
<i>Carabus granulatus</i> L	V,V52,M,N		<i>B.atrocoeruleum</i> Stephens
<i>C.monilis</i> Fabricius	R44,M,N		<i>B.tibiale</i> (Duft.)
<i>C.nemoralis</i> Muller	V,V52,M,N		<i>B.bruxellense</i> Wesmael
<i>C.problematicus</i> Herbat	V,M,N		<i>B.decorum</i> (Zenker)
<i>C.violaceus</i> L	V,V52,M,N		<i>B.femoratus</i> Sturm
<i>Leistus ferrugineus</i> (L)	V,M,N		<i>B.nitidulum</i> (Marsham)
<i>L.fulvibarbis</i> Dejean	V,M,N		<i>B.tetracolum</i> Say
<i>L.rufescens</i> (Fabricius)	J45,V52,M,N		<i>B.quadrinotatum</i> (L)
<i>L.rufomarginatus</i> (Duft.)	N		<i>B.quadripustulatum</i> Serville
<i>L.spinibarbis</i> (Fabricius)	V,V52,M,N		<i>B.gilvipes</i> Sturm
<i>Nebria brevicollis</i> (Fabricius)	V,V52,M,N		<i>B.assimile</i> Gyllenhal
<i>N.salina</i> F&L	J50,M,N		<i>B.clarki</i> Dawson
<i>Notiophilus aquaticus</i> (L)	V,V52,M,N		<i>B.genei</i> Kuster
<i>N.biguttatus</i> (Fabricius)	V,V52,M,N		<i>B.doris</i> (Panzer)
<i>N.palustris</i> (Duft.)	R,V52,M		<i>B.articulatum</i> (Panzer)
<i>N.quadripunctatus</i> Dejean	N		<i>B.obtusus</i> Serville
<i>N.rufipes</i> Curtis	M,N		<i>B.harpaloides</i> Serville
<i>N.substriatus</i> Waterhouse	J,V52,M,N		<i>B.quinquestriatus</i> Gyllenhal
<i>Blethusa multipunctata</i> (L)	J,M		<i>B.aeneus</i> Germar
<i>Elaphrus cupreus</i> Duft.	V,M,N		<i>B.biguttatum</i> (Fabricius)
<i>E.riparius</i> (L)	V,V52,M,N		<i>B.guttula</i> (Fabricius)
<i>Loricera pilicornis</i> (Fabricius)	V,V52,M,N		<i>B.lunulatum</i> (Fourcroy)
<i>Dyschirius aeneus</i> (Dejean)	D,J,M,N		<i>B.unicolor</i> Chaudoir
<i>D.globoeus</i> (Herbst)	V,M		<i>Stomis pumicatus</i> (Panzer)
<i>Clivina fossor</i> (L)	V,V52,M,N		<i>Pterostichus angustatus</i> (Duft.)
<i>Broscus cephalotes</i> (L)	V,M,N		<i>P.anthraxinus</i> (Panzer)
<i>Patrobus atrofusus</i> (Stroem)	V,M		<i>P.cupreus</i> (L)
<i>Trechus obtusus</i> Erichson	J,V52,M,N		<i>P.diligens</i> (Sturm)
<i>T.quadristriatus</i> (Schränk)	V,M,N		<i>P.longicollis</i> (Duft.)
<i>T.secalis</i> (Paykull)	V,D,M,N		<i>P.macer</i> (Marsham)
<i>T.discus</i> (Fabricius)	V,M		<i>P.madidus</i> (Fabricius)
<i>T.micrus</i> (Herbst)	V,M		<i>P.melanarius</i> (Illiger)
<i>Asaphidion flavipes</i> (L)	V,V52,M,N		<i>P.minor</i> (Gyllenhal)
<i>Bembidion litorale</i> (Olivier)	V		<i>P.niger</i> (Schaller)
<i>B.lampros</i> (Herbst)	V,M,N		<i>P.nigrita</i> (Paykull)
<i>B.properans</i> Stephens	M,N		<i>P.oblongopunctatus</i> (Fabricius)
			<i>P.strenuus</i> (Panzer)

<i>P. vernalis</i> (Panzer)	V,M,N	<i>A. montivaga</i> Sturm	N	<i>D. linearis</i> (Olivier)	V,V52,M,N
<i>P. versicolor</i> (Sturm)	V,V52,M	<i>A. ovata</i> (Fabricius)	V,D	<i>D. melanocephalus</i> Dejean	V,M,N
<i>Abax parallelepipedus</i> (P&M)	V,V52,M,N	<i>A. plebeja</i> (Gyllenhal)	V,M,N	<i>D. meridionalis</i> Dejean	V,N
<i>Calathus ambiguus</i> (Paykull)	R,M	<i>A. praetermissa</i> (Sahlberg)	J,M	<i>D. quadrimaculatus</i> (L)	V,M,N
<i>C. erratus</i> Sahlberg	V,M,N	<i>A. similata</i> (Gyllenhal)	V,M,N	<i>D. quadrinotatus</i> (Zenker)	V,M,N
<i>C. fuscipes</i> (Goeze)	V,V52,M,N	<i>A. tibialis</i> (Paykull)	N	<i>Microlestes maurus</i> (Sturm)	V,M,N
<i>C. melanocephalus</i> (L)	V,V52,M,N	<i>Harpalus rufipes</i> (Degeer)	V,V52,M,N	<i>Metabletus foveatus</i> (Fourcroy)	V,M,N
<i>C. mollis</i> (Marshall)	V,J,M	<i>H. ardosiaceus</i> Lutschnik	J50,M,N	<i>M. obscuroguttatus</i> (Duftschmid)	N
<i>C. piceus</i> (Marshall)	V,V52,M,N	<i>H. azureus</i> (Fabricius)	J,M,N	<i>M. truncatellus</i> (L)	V,M,N
<i>Laemostenus terricola</i> (Herbst)	V,M,N	<i>H. parallelus</i> Dejean	L	<i>Brachinus crepitans</i> (L)	J,M
<i>Platyderus ruficollis</i> (Marshall)	V,M,N	<i>H. punctatulus</i> (Duftschmid)	J50,M		
<i>Synuchus nivalis</i> (Panzer)	J50,M	<i>H. puncticeps</i> (Stephens)	N		
<i>Olisthopus rotundatus</i> (Paykull)	V,M,N	<i>H. rufibarbis</i> (Fabricius)	V,J50,M,N	HALIPLIDAE	
<i>Agonum albis</i> (Fabricius)	V,V52,M,N	<i>H. affinis</i> (Schrank)	V,M,N	<i>Brychius elevatus</i> (Panzer)	BB40,N
<i>A. assimile</i> (Paykull)	V,M,N	<i>H. latus</i> (L)	V,M	<i>Halipus confinis</i> Stephens	N
<i>A. dorsale</i> (Pontoppidan)	V,V52,M,N	<i>H. rubripes</i> (Duftschmid)	V,M,N	<i>H. flavicollis</i> Sturm	V, BB40
<i>A. fuliginosum</i> (Panzer)	V,M,N	<i>H. rufitarsis</i> (Duftschmid)	J50,V52,M,N	<i>H. fluviatilis</i> Aube	D,N
<i>A. gracile</i> Sturm	V,V52,M,N	<i>H. smaragdinus</i> (Duftschmid)	V,Cr,M	<i>H. fulvus</i> (Fabricius)	V52
<i>A. marginatum</i> (L)	V,M,N	<i>H. tardus</i> (Panzer)	V,M	<i>H. immaculatus</i> Gerhardt	BB40,J,V52
<i>A. micans</i> Nicolai	V,M	<i>Anisodactylus binotatus</i> (Fabricius)	J50,M,N	<i>H. laminatus</i> (Schaller)	BB40,J50,V52,N
<i>A. moestum</i> (Duftschmid)	M,N	<i>Trichocellus placidus</i> (Gyllenhal)	N	<i>H. lineatocollis</i> (Marshall)	V, BB40,V52,N
<i>A. muelleri</i> (Herbst)	V,V52,M	<i>Bradycellus distinctus</i> (Dejean)	V	<i>H. obliquus</i> (Fabricius)	D, BB40,N
<i>A. obscurum</i> (Herbst)	M,N	<i>B. harpalinus</i> (Serville)	V,V52,M,N	<i>H. ruficollis</i> (Degeer)	V,V52,N
<i>A. piceum</i> (L)	V,M,N	<i>B. ruficollis</i> (Stephens)	N		
<i>A. thoreyi</i> Dejean	V,M	<i>B. sharpi</i> Joy	N	HYGROBIIDAE	
<i>A. versutum</i> Sturm	J,M	<i>B. verbasci</i> (Duftschmid)	V,V52,M,N		
<i>A. viduum</i> (Panzer)	V,V52,M	<i>Stenolophus mixtus</i> (Herbst)	J,V52,N	<i>Hygrobia hermanni</i> (Fabricius)	R44,V52
<i>Amara aenea</i> (Degeer)	V,M,N	<i>Acupalpus consputus</i> (Duftschmid)	J50,V52,M		
<i>A. anthobia</i> Villa	Cr,M,N	<i>A. dorsalis</i> (Fabricius)	M,N	NOTERIDAE	
<i>A. apricaria</i> (Paykull)	V,M,N	<i>A. dubius</i> Schilsk	M,N		
<i>A. aulica</i> (Panzer)	J50,M,N	<i>A. flavicollis</i> (Sturm)	J50	<i>Noterus clavicornis</i> (Degeer)	V,V52,N
<i>A. bifrons</i> (Gyllenhal)	R,M,N	<i>A. meridianus</i> (L)	V,M,N		
<i>A. communis</i> (Panzer)	V,M	<i>Badister bipustulatus</i> (Fabricius)	V,V52,M,N	DTISCIDAE	
<i>A. convexuscula</i> (Marshall)	J50,M,N	<i>B. sodalis</i> (Duftschmid)	J50,M		
<i>A. eurynotis</i> (Panzer)	J50,M	<i>Chlaenius nigricornis</i> (Fabricius)	J,M	<i>Laccophilus hyalinus</i> (Degeer)	V, BB40,N
<i>A. familiaris</i> (Duftschmid)	V,V52,M,N	<i>C. vestitus</i> (Paykull)	R44,V52,M	<i>L. minutus</i> (L)	V, BB40,V52,N
<i>A. fulva</i> (Muller)	V,M	<i>Lebia chlorocephala</i> (Hoffmansegg)	R44,M	<i>Hyphydrus ovatus</i> (L)	R44,V52,N
<i>A. infima</i> (Duftschmid)	M,N	<i>Demetrius atricapillus</i> (L)	V,V52,M,N	<i>Guignotus pusillus</i> (Fabricius)	J
<i>A. lunicollis</i> Schiodte	V,M	<i>Dromius agilis</i> (Fabricius)	V,M,N	<i>Hygrotus inaequalis</i> (Fabricius)	V,V52,N

<i>H.versicolor</i> (Schaller)	V,BB40,V52,N	GYRINIDAE		<i>Anacaena bipustulata</i> (Marshall)	J50,V52,BB58
<i>Coelambus confluens</i> (Fabricius)	R44,V52	<i>Gyrinus aeratus</i> Stephens	J,V52	<i>Laccobius bipunctatus</i> (F)	J,V52
<i>C.impressopunctatus</i> (Schaller)	J50,V52,N	<i>G.marinus</i> Gyllenhal	V	<i>L.minutus</i> (L)	J50,V52
<i>Hydroporus angustatus</i> Sturm	V,BB40	<i>G.natator</i> (L)	V,J,N	<i>L.sinuatus</i> Motschulsky	V
<i>H.dorsalis</i> (Fabricius)	N	<i>G.substriatus</i> Stephens	V52	<i>L.striatulus</i> (Fabricius)	D,V52,BB58
<i>H.erythrocephalus</i> (L)	V	<i>Orectochilus villosus</i> (Muller)	V,BB50,N	<i>Helochares lividus</i> (Forster)	J,V52,BB58
<i>H.gyllenhalii</i> Schiodte	V			<i>H.obscurus</i> (Muller)	R44
<i>H.incognitus</i> Sharp	J50,V52	HYDROPHILOIDEA		<i>Chaetarthria seminulum</i> (Herbst)	V
<i>H.marginatus</i> (Duftschmid)	V,BB40	HYDROPHILIDAE		<i>Berosus affinis</i> Brulle	N
<i>H.nigrita</i> (Fabricius)	V				
<i>H.palustris</i> (L)	V,V52,N	<i>Hydrochus angustatus</i> Germar	R44	HISTEROIDEA	
<i>H.planus</i> (Fabricius)	V,V52	<i>H.elongatus</i> (Schaller)	V,BB58		
<i>H.pubescens</i> (Gyllenhal)	V,V52	<i>Helophorus aquaticus</i> (L)	V,V52,N	HISTERIDAE	
<i>H.tesselatus</i> Drapiez	J,V52	<i>H.brevipalpis</i> Bedel	V,V52,N		
<i>Graptodytes pictus</i> (Fabricius)	V,BB40	<i>H.dorsalis</i> (Marshall)	J50,BB58	<i>Saprinus aeneus</i> (Fabricius)	N
<i>Porhydrus lineatus</i> (Fabricius)	V,BB40,N	<i>H.flavipes</i> (Fabricius)	V,N	<i>S.semistriatus</i> (Scriba)?	NJ,V
<i>Potamonectes assimilis</i> (Paykull)	V	<i>H.granularis</i> (L)	BB58,N	<i>Dendrophilus punctatus</i> (Herbst)	D
<i>P.depressus</i> (Fabricius)	V,J,N	<i>H.griseus</i> Herbst	W,J	<i>Paromalus flavicornis</i> (Herbst)	J
<i>Stictotarsus duodecimpustulatus</i> (F)	R44,V52	<i>H.minutus</i> Fabricius	V52,BB58,N	<i>Onthophilus punctatus</i> (Muller)	R
<i>Oreodytes sanmarki</i> (Sahlberg)	V	<i>H.nanus</i> Sturm	W,R44,BB58	<i>O.striatus</i> (Forster)	R
<i>Platambus maculatus</i> (L)	V,BB50,V52	<i>H.nubilus</i> Fabricius	V,BB58	<i>Hister impressus</i> Fabricius	V
<i>Agabus bipustulatus</i> (L)	V,V52,N	<i>H.rufipes</i> (Bosc d'Antic)	V52,N	<i>H.striola</i> Sahlberg	V
<i>A.chalconatus</i> (Panzer)	V,BB50	<i>Sphaeridium bipustulatum</i> F.	V,V52	<i>H.unicolor</i> L	V52
<i>A.conspersus</i> (Marshall)	J50	<i>S.lunatum</i> Fabricius	N	<i>Paralister carbonarius</i> (Hoffmann)	V
<i>A.didymus</i> (Olivier)	N	<i>S.scarabaeoides</i> (L)	V,V52	<i>P.purpurascens</i> (Herbst)	J
<i>A.guttatus</i> (Paykull)	V,BB50	<i>Cercyon analis</i> (Paykull)	V	<i>Peranus bimaculatus</i> (L)	V
<i>A.nebulosus</i> (Forster)	V,V52,N	<i>C.atomarius</i> (Fabricius)	V		
<i>A.paludosus</i> (Fabricius)	BB50,N	<i>C.atricapillus</i> (Marshall)	V		
<i>A.sturmi</i> (Gyllenhal)	R44	<i>C.granarius</i> Erichson	V		
<i>Ilybius ater</i> (Degeer)	V,BB50,V52	<i>C.haemorrhoidalis</i> (Fabricius)	V		
<i>I.fenestratus</i> (Fabricius)	BB50,J,V52,N	<i>C.lateralis</i> (Marshall)	V		
<i>I.fuliginosus</i> (Fabricius)	V,BB50,V52,N	<i>C.lugubris</i> (Olivier)	V		
<i>Rhantus frontalis</i> (Marshall)	J50	<i>C.melanocephalus</i> (L)	V		
<i>R.suturalis</i> (Macleay)	J50	<i>C.terminatus</i> (Marshall)	V,J50,V52		
<i>Colymbetes fuscus</i> (L)	V,BB50,V52,N	<i>C.unipunctatus</i> (L)	V		
<i>Acilius sulcatus</i> (L)	V,BB50,V52	<i>C.ustulatus</i> (Preyssler)	V,V52		
<i>Dytiscus marginalis</i> L	V,N	<i>Megasternum obscurum</i> (Marshall)	V,V52		
		<i>Cryptopleurum minutum</i> (Fabricius)	V		
		<i>Hydrobius fuscipes</i> (L)	V,V52,N		

FLOWERING PLANTS, FERNS AND FERN ALLIES (Spermatophyta and Pteridophyta) Report of the Recorder

1982 was another active year in the recording of the flora of the county although most of my own time was given to site recording. Until July this was frequently with Horace Souster, a founder-member of the Society and my companion in the countryside for many years, his death is a great loss. In the second half of the year all the field work was done with my wife.

The most outstanding record made during this year was of Common Dodder (*Cuscuta epithymum*) at Stockgrove Country Park (92E) by Mr B. Henry. This is a parasite on various species including heather, its host here. I knew it last in the county more than 30 years ago, also on heather, on a sandy bank now part of the Leighton Buzzard golf course. It is hoped that the Stockgrove colony may prove to be a permanent home of a species which it was feared had been lost to the county. Otherwise about 900 additional tetrad records were made, this being about the average in the seven years since the *Bedfordshire Plant Atlas* was published. No previously unrecorded native species were found but a few additional records were made of some rare species already known. The most pleasing was by Mr M. Massey, the NCC warden, of Flea Sedge (*Carex pulicaris*) on Barton Hills (03V), making this the third current station for this species on Bedfordshire chalk downland (see my report for 1978). It was known as a downland species forty years ago, giving us hope that we are experiencing a minor climatic change that may see the return of wetland species once a feature of the downland. In this connection it is interesting to note that Richard Bateman reports that Southern Marsh-orchid (*Dactylorhiza praetermissa*) is still on Bison Hill now with a hybrid with *D. fuchsii*. Mr Massey also reports that Green-winged Orchid (*Orchis morio*) was seen on Barton Hills just once a few years ago. Dave Guntrip found Toothwort (*Lathraea squamaria*) in a most unpromising locality – a derelict garden near the centre of Luton – and Arthur Livett reported it also in Luton Hoo Park where I had last seen it nearly forty years ago. In 1981 K.F. Webb found White Helleborine (*Cephalanthera damasonium*) growing under trees off New Bedford Road in Luton which I was then unable to visit but can now confirm as being a small if unexpectedly thriving colony. Extension of known range of some of the uncommon species include Small Teasel (*Dipsacus pilosus*) shown to us by J.T.R. Sharrock near Blunham (15K), Mare's-tail (*Hippuris vulgaris*) abundant in Double Arches Pit (92J) and Common Calamint (*Calamintha ascendens*) on a bank near Stanford (14Q).

The introduced or alien flora continues to add species of interest. I.K. Dawson found *Asperula arvensis* in the bird garden at The Lodge, Sandy (14Y) and E.J. Clement and T.B. Ryves on their annual visit from London to look for wool aliens added yet another species, *Eragrostis virescens* (Gramineae) to the already long list of these recorded for the county. Mrs J. Welsh, another visitor, found *Amsinckia 'intermedia'* (Boraginaceae) abundant in an arable field near Sandy (14Z). This species has been increasing recently in East Anglia and its arrival in Bedfordshire, where it was previously known in 1923 in similar circumstances, was not unexpected. We were pleased to find Slender Rush (*Juncus tenuis*), known already in one site only, in two more: one in Kingshoe Wood (03C) and the other near the Fuller's Earth workings north of Woburn (93H) (see Report for 1981). These workings have added still more species to the county list with *Agrostis exarata* and Annual Vernal-grass (*Anthoxanthum aristatum* = *A. puelii*), the latter having for a long time been a feature of one site nearby in Cambridgeshire but not seen there recently, making it good to have it now in Bedfordshire. The verges of new roads in the county appear worthy of examination; the new trunk road south of Luton, opened late in 1982, having already provided *Lavatera trimestris*, previously only recorded in the county in 1945. Rubbish dumps have been less rewarding in strange plants since more efficient means of refuse disposal have resulted from the re-organisation of local government in 1974. The larger dumps now in

use appear to be settling down and the one at Sundon which featured so much in the Flora of Bedfordshire (1953) has at long last provided a new species for the county in a garden escape — *Oxalis articulata*.

Naturalists' gardens often reveal the unexpected, that of 51 Wychwood Avenue, Luton, living up to its reputation of doing so. Beryl Rands drew my attention to Slender Bedstraw (*Galium pumilum*) growing there in a flower bed. This is a species of calcareous pastures and has previously been found once in the county, on Blows Downs in 1944, then thought to have been introduced with grass seed and was not permanent. It is difficult to think why it should have appeared in this new site. It is to be hoped that members will continue to draw attention to unusual plants found in their gardens and encourage others to do so, such for instance as Mrs A.J. Buck who reported to me that Deadly Nightshade (*Atropa belladonna*) has long been established in her garden at Dunstable, presumably having been in a hedgerow there before the house was built.

JOHN G. DONY

LICHENS

Report of the Recorder

Lichens can colonise a wide variety of man-made materials, to which they do little or no harm. One particular material which they colonise rapidly is the grey asbestos-cement sheeting used as roofing, especially on new farm buildings. Looking around the county's farm buildings all stages of lichen colonisation can be observed.

Lichens will appear naturally on most asbestos roofs having been carried in as fragments or spores, but the rate at which they establish themselves is affected by a number of factors. These include the slope and aspect of the roof, the use made of the building and the surrounding levels of atmospheric pollution. The pH of the asbestos sheeting also plays a part in colonisation as new sheeting has a pH of 10.0-11.5 which falls after a period of ten or more years to a level of 5.0-6.0. This high alkalinity, however, provides a buffering effect to the sulphur dioxide in the atmosphere and allows lichens to extend their range of growth often into relatively polluted areas.

The first lichens to colonise farm asbestos roofs are the grey-green lichens of *Physcia* spp. and *Lecanora* spp. which usually develop first in the troughs of the sheeting where nutrients and enriched rainwash tend to accumulate. *Physcia adscendens*, *P. caesia*, *Phaeophyscia orbicularis*, *Lecanora dispersa* and *L. muralis* all contrive to give the roof a dark patchy appearance. These lichens will establish themselves after four years and may cover a roof after only eight years. They are followed by the yellow and orange lichens of *Caloplaca* spp. and *Xanthoria* spp, which change the overall colour of the roof to an orange-brown. *Caloplaca aurantia*, *C. citrina*, *C. hepiana*, *Xanthoria aureola* and *X. parietina* are especially common, these lichens enjoying the well lit and nutrient rich atmosphere which a farm environment can provide. After sixteen years much of the roof will be colonised and it will have acquired a visually pleasing appearance which ensures harmony with surrounding buildings. In fact, numerous growth promoting recipes are commonly employed to encourage the colonisation of lichens on such surfaces in rural areas and in many cases, planning permission for the erection of new farm buildings is only granted if due consideration is paid to the blending of these surfaces into the landscape.

FRANCES B.M. DAVIES

MOSSES AND LIVERWORTS (Bryophyta)

Report of the Recorder

For a number of reasons the last twelve months have seen more Bryological activity in Bedfordshire than has been possible in the last few years and there have also been a number of interesting finds.

Bryum microerythrocarpum, a small species of disturbed soils is one of a number of species with rhizoidal gemmae. It had not previously been recorded for Bedfordshire but had long been expected to turn up. Having found it at Beadlow in February I have subsequently found it on two more occasions.

Marcus Yeo, one of my former students, added *Zygodon conoideus* to the county list, growing epiphytically on elder at Barton where it was in small quantity, mixed with *Z. viridissimus* which is quite common there. He also produced the second record for the county of *Dicranum tauricum* = (*strictum*) also from elders at Barton. This is an alien species to Britain which is spreading. I first recorded it in Bedfordshire from Whitehill Wood nr Stopsley in 1973.

Tetrad records have continued to accumulate and some species are beginning to illustrate quite distinctive distribution patterns.

I would like to thank Marcus Yeo for all the records he has contributed over the last twelve months and would welcome localised collections from other members of the society.

ALAN R. OUTEN

THE FUNGUS FORAY

Rushmere Estate, Heath and Reach was the venue for the 1982 Fungus Foray, held on Sunday, October 31st. About 40 members of the Society attended and were conducted round by Mr F. Atkinson, the forester in charge of the estate, and his detailed knowledge of and anecdotes concerning the local wildlife were much appreciated by the party.

Rushmere is primarily an area of pine and exotic conifers planted on sandy soil, with some patches of deciduous woodland, including a marshy area with willow and alder in the vicinity of the lake.

A number of fungi new to the county were found. *Russula xerampelina* var. *erythropoda* is a difficult species to recognise in the field unless one has a crystal of Ferric alum to rub on the stem. This produces the characteristic green colour of *R. xerampelina* which usually has a strong smell of crab. However, this species can be found in an infinite range of colours; the var. *erythropoda* occurring in association with conifers is almost indistinguishable from *R. sardonias* which also occurs very commonly in similar habitats. Both have a dark blackish-purple cap, yellowish gills and a purple stem, but *R. sardonias* does not give a green reaction with Ferric alum.

Agaricus abruptibulbus is extremely close to *A. silvicola* differing in having larger spores (6.8 x 4.5 μ m compared with 5.6 x 3.4 μ m). *A. haemorrhoidarius* is very similar to *A. silvaticus* and *A. langei*. It differs from the latter in having smaller spores (5.6 x 3.3.5 μ m compared with 6.9 x 4.5 μ m) and from the former merely by its overall larger size. All three species have a brown scaly cap and reddening flesh.

The swampy area around the lake produced two new county records:

Cortinarius alnetorum and *Hebeloma leucosarx*. The *Cortinarius* is small, very dark blackish-brown, with a water-soaked cap and a whitish cortinal zone on the stem; *H. leucosarx* is a distinctive species with pinkish-buff to pale tawny-ochraceous cap which is viscid when moist, and has a smell of radish. Both species are restricted to this marshy type of habitat.

Hygrophorus marchii is a scarlet-red or orange species of grassland recognized by its broadly adnate gills and spores measuring 6.5-8.5 x (3.0-) 4.0-5.0 μ m which are not constricted in outline. *Myxomphalia maura*, which was fairly abundant in several areas, is another species often found in open situations especially following burning or on bonfire sites. It has a dark

brown, hygrophanous, depressed or umbilicate cap contrasting with white gills; the spores are distinctive in being amyloid, $5.0-6.5 \times 3.5-5.0 \mu\text{m}$.

Tricholoma obscurissimum is a difficult species to recognise with grey-brown cap and stem and crowded creamy-white gills. It is easily mistaken for a *Melanoleuca* but its lack of cystidia and non-amyloid spores, which are rather narrowly elongate and measures $5.0-6.5 \times 3.0-3.5 \mu\text{m}$, serve to distinguish it.

Geoglossum nigrum can only be identified after microscopic study of its spores and paraphyses, although the black tongue-shaped fruitbodies occurring in short grass leave no doubt as to the genus. This need for microscopic examination is also true of *Peziza ampliata* and *Xylaria longipes*. However the latter which resembles an etiolated *X. polymorpha* is restricted to wood of *Acer*, and has smaller spores than those of that species.

Two species of Puff Ball confirm old county records: *Bovista plumbea* at maturity forms small hazelnut-sized globular fruitbodies with a lead-grey surface. In contrast *Langermannia gigantea* — the Giant Puff Ball, forms enormous football-sized fructifications, which in the young stage are very good to eat.

In all a total of 142 species were collected, eleven of which represent new county records, and two confirmation of existing reports.

**Agaricus abruptibulbus*; **A. haemorrhoidarius*; *Amanita gemmata*; *A. muscaria*; *Armillaria mellea*; *Baeospora myosura*; *Boletus badius*; *B. chrysenteron*; *B. elegans*; *B. granulatus*; *B. luteus*; *B. scaber*; *B. variegatus*; *Clitocybe clavipes*; *C. dealbata*; *C. dicolor*; *C. ditopa*; *C. flaccida*; *C. fragans*; *C. hydrogramma*; *C. nebularis*; *C. odora*; *C. vibecina*; *Collybia ambusta*; *C. butyracea*; *C. cirrhata*; *C. confluens*; *C. maculata*; *C. peronata*; **Cortinarius alnetorum*; *C. cinnamomeus*; *C. hemitrichus*; *C. semisanguineus*; *Crepidotus luteolus*; *Cystoderma amianthina*; *Entoloma sericeum*; *Galerina hypnorum*; *G. mycenopsis*; *G. sideroides*; *G. vittaeformis*; *Gomphidius rutilus*; *Gymnopilus penetrans*; *Hebeloma crustuliniforme*; **H. leucosarx*; *H. mesophaeum*; *Hygrophoropsis aurantiaca*; *Hygrophorus ceraceus*; **H. marchii*; *H. nigrescens*; *H. substrangulatus*; *Hypholoma capnoides*; *H. fasciculare*; *Laccaria amethystea*; *L. laccata*; *L. proxima*; *Lactarius glycosmus*; *L. hepaticus*; *L. quietus*; *L. rufus*; *L. subdulcis*; *L. tabidus*; *L. turpis*; *Lepiota castanea*; *L. rhacodes*; *L. subalba*; *Lepista nuda*; *Marasmius androsaceus*; *M. oreades*; *Melanoleuca melaleuca*; *Mycena aetites*; *M. cinerella*; *M. fibula*; *M. galericulata*; *M. galopus*; *M. inclinata*; *M. lactea*; *M. leptocephala*; *M. leucogala*; *M. polygramma*; *M. pura*; *M. sanguinolenta*; *M. swartzii*; *M. vitilis*; **Myxomphalia maura*; *Paxillus involutus*; *P. panuoides*; *Pholiota squarrosa*; *Pleurotus dryinus*; *Psathyrella squamosa*; *Psilocybe semilanceata*; *Russula betularum*; *R. fragilis*; *R. ochroleuca*; *R. parazurea*; **R. xerampelina* var. *erythropoda*; *Stropharia aeruginosa*; *S. semiglobata*; **Tricholoma obscurissimum*; *T. terreum*; *Tricholomopsis rutilans*.

Bjerkandera adusta; *Clavulinopsis corniculata*; *C. helvola*; *Coniophora puteana*; *Coriolus versicolor*; *Ganoderma applanatum*; *Heterobasidion annosum*; *Hirschioporus abietinus*; *Piptoporus betulinus*; *Polyporus badius*; *Radulomyces confluens*; *Sparassis crispa*; *Stereum gausapatum*; *S. rugosum*; *S. sanguinolentum*; *Thelephora terrestris*; *Typhula erthropus*.
Calocera viscosa; *Dacrymyces stillatus*.

Ustilago violacea.

†*Bovista plumbea*; *Calvatia excipuliformis*; *C. utriformis*; †*Langermannia gigantea*; *Lycoperdon foetidum*; *L. perlatum*; *Phallus impudicus*; *Scleroderma citrinum*; *Vascellum pratense*.

Coprobata granulata; **Geoglossum nigrum*; *Helvella lacunosa*; **Peziza ampliata*; *Rhytisma acerinum*.

Diatrype stigma; *Hypoxylon multifforme*; *Nectria cinnabarina*; *Xylaria hypoxylon*;

**X. longipes*; *X. polymorpha*.

Mucilago spongiosa.

* = New county record.

† = Confirmation of early record.

DEREK A. REID

FUNGI

Report of the Recorder

The following are additional records to the list of Bedfordshire fungi.

Basidiomycetes:

Agaricales:

Agaricus purpurellus On lawn, near Henlow Camp, coll. A. Outen, 10 Oct. 1982. A small species, with cap only 2.5-3.5 cm diam., which is pale vinaceous with darker centre and densely clad with radiating lilac fibrils; the rather tall delicate stem, which bruises yellow, bears a distinct ring; the gills are pallid at first then greyish with slight reddish tinge. The spores are small, oval and $4.0-5.0 \times 3.0-3.75 \mu\text{m}$.

Pluteus xanthophaeus Kingshoe Wood, Flitwick, coll. A. Outen, 28 Oct. 1979. A species belonging to the group with a cellular cuticle, recognised by its cap shading from vandyke or sepia at centre to brighter lemon-yellow at the striate margin, and the young gills tinged with chrome or lemon-yellow before finally becoming pinkish.

Resupinatus rhacodium Ampthill Park, coll. G. Hooper, 4 Nov. 1982. A tiny pleurotoid agaric found on wood, in which the shell-shaped cap, 5-8 mm wide, is entirely dark grey with the basal portion covered with a sharply delimited black hispid tomentum. The spores are globose, $5.0-6.5 \mu\text{m}$ diam.

Strobilomyces floccopus Stockgrove Park, coll. Mrs C.J. Ferguson, 6 Sept. 1978. This dark grey or blackish bolete is unmistakable on account of its dark sombre cap covered with conspicuous black pyramidal warts giving it a cone-like appearance, hence the generic name!

Aphylophorales:

Lindtneria trachyspora In ants' nest, Sharpenhoe, coll. Mrs E.B. Rands and A.J. Rundle, 18 July 1982. A truly remarkable find of this rare, delicate, resupinate poria-like bracket-fungus, which normally grows on very rotten wood. There have been no previous reports of it from subterranean habitats. Microscopically it is distinctive in having pale brown, globular spores, $6-8 \mu\text{m}$ diam., ornamented with prominent warts and crests. A more detailed account of this find will appear in the Bulletin of the British Mycological Society and is now in press.

Dacrymycetales:

Calocera glossoides On oak, Ravensdell Wood, coll. A. Outen, 12 Oct. 1980. A small yellow *Calocera* most liable to confusion with the common *C. cornea* from which it differs in having a distinct sterile stalk and sharply defined fertile longitudinally wrinkled head resembling in shape that of a bishop's mitre. It is further distinguished by the sausage-shaped spores becoming up to 3-septate at maturity.

Ascomycetes:

Discomycetes:

Otidea alutacea Ravensdell Wood, coll. A. Outen, 12 Oct. 1980. Recognised by its clay-coloured 'hare's-ear'-like clustered fruitbodies.

I am grateful to all those who have sent me specimens and in particular to Alan Outen.

DEREK A. REID

SITES

Report of the Recorder

The Site Recording scheme has made some progress in 1982. A lack of records has, however, tended to result in an incomplete coverage of Bedfordshire.

In the gravel pits, as expected, there were many changes. At Barkers Lane half of the lake was used for sailing in the winter months, despite several objections. In consequence the total numbers of duck using this site decreased. Other habitat changes are planned for the fringe of the lake and this has meant that many trees have been removed. An increasing number of visitors use the site for leisure activities and thus a great deal of the wildlife potential has not been realised. On the positive side tree planting will help to increase the attractiveness of parts of the site.

The future of Radwell Gravel Pit remains undecided, this site which attracted so many migrant waders in 1981 will possibly be turned into a marina. There has been brighter news from Harrold Gravel Pits where a country park has been opened and some interesting management plans should increase the interest of this site.

There is a lack of suitable marshy areas in the county and it is sad to record that the future of Houghton Regis Chalk Pit is in doubt. This unique site, in an urban environment deprived of wildlife interest, ought to be conserved in some form and not used as a place for dumping rubbish.

As a county Bedfordshire has a ridiculously small percentage of its area with trees. Forestry Commission changes affect the future of our existing woodlands and Marston Thrift is threatened with the possibility of being sold off to private enterprise. It is interesting to record the Nuthatch has been seen in this wood for the first time in recent memory.

The Beds and Hunts Naturalists' Trust has increased its reserve holdings in the county. They have extended Flitwick Moor, opened a new reserve at Toddington and extended or opened other sites at Millbrook, Clophill and elsewhere. It is to be hoped that more of our wildlife habitats can be conserved for future generations to enjoy.

Many of the Sites of Special Scientific Interest (S.S.S.I.) that have been designated in the past will not be redesignated when these sites are appraised for the Wildlife and Countryside Bill. This indicates that many of our S.S.S.I.'s have been destroyed or radically altered in a relatively short period of time. This is an indication of the pressure of change in Bedfordshire and we need to monitor these changes. So more records please for 1983!

DAVE ODELL

RECORDERS

Meteorology: Mr M. C. Williams, 2 Ivel Close, Barton-le-Cley, Bedford

Geology and Fossils: Mr K.G. Baker, 34 Lorraine Road, Wooton, Bedford.

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

Birds: Mr B.J. Nightingale, 9 Duck End Lane, Maulden, Bedford.

Amphibians and Reptiles: Mrs H.M. Muir-Howie, 19 Molivers Lane, Bromham, Bedford.

Fish: Mr T. Peterkin: 129 Manor Road, Barton-le-Cley, Bedford.

Slugs, Snails and Leeches: Mrs E.B. Rands, 51 Wychwood Avenue, Luton, Beds.

Spiders and Harvestmen: Mr T.J. Thomas, 142 Selbourne Road, Luton, Beds.

Dragonflies: Dr N. Dawson, The Old House, Ickwell Green, Biggleswade, Beds.

Grasshoppers and Crickets: Mr D.G. Rands, 51 Wychwood Avenue, Luton, Beds.

Bugs: Dr B.S. Nau: 15 Park Hill, Toddington, Dunstable, Beds.

Lacewing Flies: Dr B. Verdcourt, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey.

Butterflies: Mr A.J. Martin, 18 Aragon Road, Amptill, Bedford.

Moths (macro): Mr V.W. Arnold, 96 St. Augustines Avenue, Luton, Beds.

Hoverflies: Dr N.F. Janes, 82 Marston Gardens, Luton, Beds.

Bees, Wasps, Ants etc.: Dr V.H. Chambers, 50 Shefford Road, Meppershall, Shefford, Beds.

Ladybird Beetles: Mr J.R.A. Niles, 10 Kentmere Close, Kempston, Bedford.

Woodlice, Centipedes and Millipedes: Dr A.J. Rundle, 29 Burlington Avenue, Kew, Richmond, Surrey.

Flowering Plants, Ferns and Fern Allies: Dr J.G. Dony, 9 Stanton Road, Luton, Beds.

Mosses and Liverworts: Mr A.R. Outen, 15 Manor Close, Clifton, Shefford, Beds.

Lichens: Mrs F.B.M. Davies, "Rose Cottage", 69 The Hill, Wheathampstead, St. Albans, Herts.

Fungi: Dr D.A. Reid, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey.

Sites: Mr D. J. Odell, 78 Laurel Walk, Kempston, Bedford.

