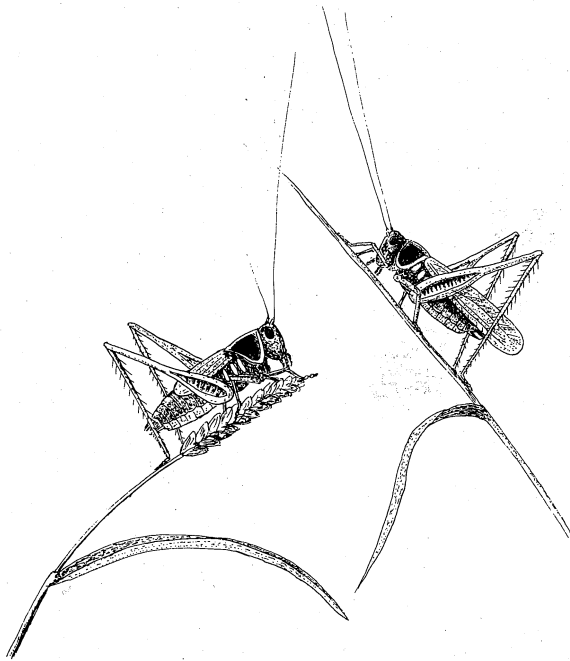


The Bedfordshire Naturalist 47



Journal
for the year 1992

BEDFORD COPY

BEDFORDSHIRE NATURAL HISTORY SOCIETY 1993

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Honorary Librarian:

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Scientific: Mr C. Baker, Mr D. Ball, Dr G. Bellamy (Chairman), Miss R. Brind, Ms J. Childs (Sec.), Mr J. Comont, Mr A. Fleckney, Dr P. Hyman, Mr J. Knowles, Mrs H. Muir-Howie, Dr B. Nau, Mr E. Newman.

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Programme: Mr J. Adams, Mr C. Baker, Mr D. Green, Dr P. Madgett, Mrs M. Sheridan.

THE BEDFORDSHIRE NATURALIST

No. 47 (1992)

Edited by R.A. Brind

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Front cover: Roesel's bush cricket *Metrioptera roeselii* — Steve Cham

The Society would like to thank Bedfordshire County Council and Bedford Borough Council for grants towards the publication of this Journal.

REPORT OF COUNCIL FOR 1992

1992 proved to be an interesting year for the Society. The Society's programme of meetings remained as extensive and as varied as ever, with eighteen indoor events, thirty-five field trips, and two weekends; to the Lake District for Golden Eagle and other birds in April, and the Kingcombe Centre, Dorset in June for a variety of natural history interests. Highlights included illustrated talks on the birds of New Zealand by George Stebbing-Allen and the experiences of a wildlife artist by Bruce Pearson, as well as field excursions out of county to Grafham Water and the Ouse Washes (Cambridgeshire), Lemsford Springs (Herts), Blean Woods (Kent), Pamber Forest and Silchester Common (Hants), Ashton Water Dragonfly Sanctuary (Cambridgeshire) and others. Many local sites were visited including Knocking Hoe National Nature Reserve, Wavendon Heath, Flitwick Moor, Church Meadow Maulden, and Old Warden tunnel. Regular events in the Society's calendar such as the spring Dawn Chorus meeting, the annual Fungus Foray (at Sandy in 1992), and the now traditional Boxing Day morning walk (Woburn Park) were all well attended.

As part of its promotion the Society attends a number of organised events around the County during the year. These include the Migration Day at Priory Country Park (now organised jointly with the RSPB Bedford group) and Bedfordshire's annual Countryside Day at Dunstable Downs. The Society has had a stand at other events during the year and has also mounted a number of displays to promote its work at various locations. Council would like to thank all the members of the Development Committee, and other members, who continue to put in much hard work and effort on behalf of the Society at all these events.

Early in the year, to mark the 45th anniversary of the Society, members planted 15 trees at Centenary Wood near Pulloxhill (and helped in planting many more). Subsequently, a small plaque to commemorate the event was unveiled on 17th May at a gathering of members who celebrated with refreshments including an appropriately iced cake.

As reported last year, the Society had agreed to make a donation of £500 towards the appeal by the Bedfordshire and Cambridgeshire Wildlife Trust for the purchase and management of nearly 200 acres of land at Pegsdon Hills, a prime chalkland habitat in the County. This donation was made early in 1992. As a result of its appeal, the Trust was able to proceed with the purchase of the land, and a meeting was held in June between the Society's Recorders and representatives of the Trust to discuss future management of the site.

During 1992 the Bedfordshire Bird Club has become established. The formation of a provisional Bird Club to be run by a steering committee was approved with an appropriate budget in April 1992. Since then, over 100 new members have joined the Society as members of the Bird Club, bringing the total membership of the Society to over 500 for the first time in its history. The Bird Club has arranged an initial programme of both indoor and outdoor meetings, with attendances in excess of 80 at all indoor meetings. Amendments of the Society's rules were approved in early 1993 and the Bird Club has now been constituted as a formal part of the Society. Council hopes that this development will not only enable the Society to better cater for birdwatchers within the County, with the potential for more recording and survey work in the future, but will be to the benefit of the Society as a whole, and act as a stimulus to other areas of natural history study within the Society.

Lastly, Council would like to record its thanks to a number of members for their services to the Society: to Chris Boon, who stood down at the end of 1991 after editing the Society's Journal for 15 years during which time the Journal developed to the high standard to which we are accustomed today; to Derek and Beryl Rands who relinquished their positions as Recorders early in 1992 after many years of unstinting effort, not only as Recorders, but as previous Chairman and Secretary respectively of the Society, and in many other capacities; to Paul Trodd, the Society's Bird Recorder, who resigned from this position early in 1992 after five years of unflinching good humour in one of the most demanding of all Recorders's jobs; and to Steve Cham, Paul Hyman and Peter Soper, all members of Council who have decided not to stand for re-election this year, though Peter Soper will continue as the Society's Librarian, and Paul Hyman has offered to continue on the Scientific Committee. Council would like to thank all of these individuals for their past contributions to the Society.

MIKE WILLIAMS
Hon. Secretary

Table: Membership of the Society 1988-1992

	1988	1989	1990	1991	1992
Ordinary Members	362	356	360	348 (65 SC)	435 (72 SC)
Associate Members	43	42	52	46	62
Student Members	7	6	3	3	4
Corporate Members	9	9	8	10	12
Life Members	4	4	5	6	5
Honorary Life Members	2	2	2	1	1
Total	427	419	430	414	519

(SC=Senior Citizen)

PROCEEDINGS

Indoor Meetings

- 648th Ordinary Meeting** 2nd January, Bedford. "An evening of insects — Micro moths, grasshoppers and crickets" by Mr D. Manning and Mr D. Rands. Chair: Mr C. Baker.
- 649th Ordinary Meeting** 14th January, Luton. "Current affairs in Beds — the Marston Vale Community Forest" by Mrs H. Pengelly. Chair: Miss R. Brind.
- 650th Ordinary Meeting** 21st January, Dunstable. "Local wild flowers and their habitats" by Dr. G. Bellamy. Chair: Mr J. Adams.
- 651st Ordinary Meeting** 30th January, Flitwick. Twitchers' evening. Chair: Mr P. Trodd.
- 652nd Ordinary Meeting** 5th February, Bedford. Bats. Chair: Mr D. Rands.
- 653rd Ordinary Meeting** 18th February, Dunstable. "Spring in November — with Kiwis" by Mr G. Stebbing-Allen. Chair: Mr D. Green.
- 654th Ordinary Meeting** 27th February, Aspley Guise. Members' evening. Chair: Ms J. Childs.
- 655th Ordinary Meeting** 5th March, Bedford. "Bulgaria — Collared doves and yoghurt" by Mr B. Scott. Chair: Mr M. Chandler.
- 656th Ordinary Meeting** 17th March, Dunstable. "From tropic lagoon to icy waste" by Dr. P. Madgett. Chair: Mr M. Sheridan.
- Annual General Meeting** 24th March, Flitwick.
- 657th Ordinary Meeting** 1st October, Bedford. Members' evening. Chair: Dr A. Aldhous.
- 658th Ordinary Meeting** 14th October, Luton. "The Gambia experience" by Mr M. Williams. Chair: Mr M. Sheridan.
- 659th Ordinary Meeting** 20th October, Dunstable. "British Amphibians and Conservation" by Mr J. Baker. Chair: Mr D. Green.
- 660th Ordinary Meeting** 4th November, Bedford. "An artist in the natural world" by Mr B. Pearson. Chair: Mr D. Anderson.
- Special General Meeting** 10th November, Maulden. Revision of Society's rules.
- 661st Ordinary Meeting** 11th November, Biggleswade. Slides from the Royal Photographic Society 1991/1992 Nature Group exhibition. Joint meeting with Biggleswade Group of BCWT. Chair: Mr R. Revels.
- 662nd Ordinary Meeting** 17th November, Dunstable. "Ecology and biology of natural enemies of aphids" by Dr W. Powell. Chair: Mr C. Baker.
- 663rd Ordinary Meeting** 26th November, Flitwick. "Aspects of bird song" by Mr D. Couzens. Chair: Mr D. Green.
- 664th Ordinary Meeting** 3rd December, Bedford. "Haynes — my local patch" by Mr D. Parsons. Chair: Mr J. Adams.
- 665th Ordinary Meeting** 17th December, Aspley Guise. Christmas social evening and quiz. Organiser: Mr A. Martin.

Field Meetings

- Grafham Water** 19th January. Wintering birds. Leader: Mr P. Soper.
- Wildfowl & Wetlands Trust, Welney** 16th February. Swans and ducks on the Ouse Washes.
Leader: Mr J. Burchmore.
- Lemsford Springs Nature Reserve, Herts** 15th March. Birdwatching. Leader: Mr D. Green.
- Leighton Buzzard Sand Quarries** 5th April. Geological meeting. Leader: Dr. P. Madgett.
- Barton Hills** 19th April. Pasque flower walk. Leader: Dr. G. Bellamy.
- Lake District** 25th/26th April. St. Bee's Head and Haweswater. Leader: Mr D. Green.
- Priory Country Park** 3rd May. "Migration Day — conducted bird walks for the public".
- Maulden Woods** 10th May. Dawn chorus. Leader: Mr P. Trodd.
- Campden Plantation, near Shefford** 17th May. Trees. Leader: Mr J. Niles, BCC Principal Tree and Woodland Officer.
- Centenary Woodland, Pulloxhill** 17th May. BNHS 45th Anniversary Tree Plaque Ceremony.
- Southcott Village, Linslade** 21st May. Walk to Burcott for water invertebrates.
Leader: Dr P. Madgett.
- Harrold/Odell Country Park** 27th May. General interest. Leader: Mr B. Thwaites, Countryside Ranger.
- Wendover Woods & Dancers End Waterworks, Bucks.** 31st May. General interest. Leader: Mr C. Baker.
- Knocking Hoe NNR** 4th June. Botany. Leader: Dr G. Bellamy, English Nature Warden.
- Church Wood RSPB Reserve, Kent** Birds and general interest. Leader: Mr M. Williams.
- Wavendon Heath, near Woburn** 10th June. Birds and bats. Leader: Mr P. Smith.
- Kingcombe Centre, Dorset** 12th-14th June. Natural history weekend.
- "Braystone" Hibernaculum, Aspley Guise** 24th June. Bats and moths.
Leaders: Mr and Mrs P. Clarke.
- Ashton Water Dragonfly Sanctuary, near Peterborough** 27th June. Dragonflies.
Leader: Mr R. McKenzie-Dodds, Reserve Manager.
- Galley and Warden Hills** 5th July. Butterflies. Leader: Mr A. Martin.
- Pamber Forest & Silchester Common, Hants** 12th July. General interest. Leader: Mr G. Dennis, Warden.
- Wicken Fen NR** 19th July. Wetland plants and insects — vintage bus trip courtesy of Mr and Mrs P. Clarke. Leader: Mrs M. Sheridan.
- Flitwick Moor SSSI** 26th July. Site recording and training day with BNHS Recorders.
Organiser: Miss R. Brind.
- Wrest Park, Silsoe** 30th July. Joint meeting with Beds. Bat Group. Leaders: Ms. J. Childs and Dr A. Aldhous.
- Chicksands Wood** 9th August. Butterflies and general interest. Leader: Mr D. Parsons.
- Church Meadow, Maulden** 16th August. Identifying insects. Leader: Dr B.S. Nau.
- Circular walk from Harrold/Odell Country Park** 30th August. General interest.
Leader: Mr J. Knowles.
- Rutland Water** 5th September. Visit to the Birdwatching Fair. Leader: Mr D. Anderson.
- Dunstable Downs Countryside Day** 13th September. Exhibition.
- Old Warden railway tunnel** 15th September. Mothing and batting. Leaders: Mr V. Arnold, Ms J. Childs and Dr A. Aldhous.
- Norfolk coast** 20th September. Birdwatching and seals at Blakeney Point. Leader: Mr D. Green.
- Maulden Wood** 27th September. Small mammal trapping. Leader: Mr D. Anderson.
- Mammalthon** 4th October. Teams looking for highest number of mammal species.
Organiser: Mr D. Anderson.
- Woburn Park** 11th October. Watching the deer rut. Leader: Mr S. Cham.
- The Lodge, Sandy** 8th November. Annual fungus foray. Leader: Dr. D. Reid.
- Wavendon Woods** 14th November. General interest. Leader: Mr I. Dunn, Assistant Countryside Ranger.
- Whippendell Wood and Cassiobury Park, Watford, Herts** 6th December. A look at woodland and wetland habitats. Leader: Mr C. Baker.
- Woburn Park** 26th December. A Boxing Day walk through the Park. Leader: Mrs M. Sheridan.

REPORT OF THE TREASURER

During the year current account income and expenditure was higher than previously and this was, in part, due to the provisional Bird Club. We received grants towards the publication of the Journal from Bedfordshire County Council for £400 and from North Bedfordshire Borough Council for £300. The leaflet 'Bats in Beds', for which we received a grant and donation during 1991, was printed early in 1992. The Society also published the 'Limited Edition' Bedfordshire Wildlife print. Inland Revenue approval was granted for the conversion of income units to accumulation units for the equities investment fund for charities (M & G Charifund) purchased in 1991. In April 1992 a further £5,000 was invested in these units making a total of £10,000.

The assets of the Society at the year end stand at £39,989.

J.D. BURCHMORE
Hon. Treasurer

INCOME AND EXPENDITURE ACCOUNT: FOR THE YEAR ENDED 31st DECEMBER 1992

INCOME—Current Account

1991		1992		1991
£		£		£
2485	Subscriptions	3144		323
20	Sales	160		297
154	Journal sales	87		25
20	Surplus on meetings	168		—
448	Sundries and donations	720		595
521	Surplus B/Fwd from previous year	1809		—
<u>3648</u>		<u>6088</u>		<u>219</u>

EXPENDITURE—Current Account

ADMINISTRATION				
8	Postage	26		484
45	Sundries	69		232
50	Insurance	131		96
—	Officers' expenses	—		300
10	Auditors' honorarium	20		140
113		246		<u>4412</u>
MEETINGS				
233	Hire of halls, etc.	279		—
64	Lecturers and leaders	164		—
289	Programmes	318		—
586		761		—
SCIENTIFIC				
550	Journal	3617		—
—	Recorders' expenses	25		—
41	Sundries	50		—
591		3692		10
PUBLICITY/DEVELOPMENT				
298	Newsletter	560		271
32	Sundries	96		62
76	Advertising and publicity	63		444
—	Car stickers and items for re-sale	442		<u>787</u>
406		1161		10
DEPRECIATION				
143	of equipment	143		50
1809	Excess of income over expenditure	85		45
<u>3648</u>		<u>6088</u>		120
				20
				7
				55
				111
				<u>644</u>

PUBLICATIONS ACCOUNT

	1992
	£
Brought forward	595
Income	889
Expenditure	<u>1812</u> *2
	<u>(328)</u>

INCOME other than Current Account

Bank (H.I.C.A.)	—
Woolwich Building Society (Interest to 30.9.92)	1745
Worthing Corp. Bonds (Repaid Nov. 91)	—
City of Nottingham Bonds	500
Income Tax rebate	193
M & G Charfund	148
North Beds. B.C.	—
Donation	—
	<u>2586</u>

EXPENDITURE other than Current Account

Beds. & Cams. Wildlife Trust	500
Leaflet — Bats in Beds	<u>602</u>
	<u>1102</u>

BALANCE SHEET AS AT 31st DECEMBER 1992

FIXED ASSETS	COST DEPRECIATION			
		Total	Year	
10 Mammal traps	50	45	5	5
271 Display boards	371	120	20	251
62 Display table	69	14	7	55
444 Mist nets	555	222	111	333
			143	<u>644</u>
CURRENT ASSETS				
Stock of Bedfordshire Wildlife print	—			1311
Bank Current Account	122			540
Woolwich Building Society (7.72% variable)	27102			20716
City of Nottingham Bonds (to 30.6.95 at 12%)	3000			3000
City of Nottingham Bonds (to 30.6.95 at 10.25%)	3000			3000
M & G Charifund Accumulation 475 Units	4261			—
Cost £10,000 Bid price 31.12.92				<u>10938</u>
	38272			40149
CURRENT LIABILITIES				
Creditors and uncleared cheques	105			160
	<u>38167</u>			<u>39989</u>

- Notes:
- *1 Includes the printing only of 1990 and full cost of 1991 Journals.
 - *2 Includes Bedfordshire Wildlife Print, cost £1586, sales to date £650. The unsold stock is included in the Current Assets at cost.
 - *3 Sum towards the purchase and restoration of Pegsdon Hills. The current account includes Income of £969 and Expenditure of £781 in respect of the provisional Bird Club.

J.D. Burchmore
Hon. Treasurer

M. and D. Reading
Honorary Auditors

METEOROLOGY

Report of the Recorder

The weather of 1992

As with the previous year the first winter period was relatively mild and snow free, with no weather events of any major significance. After a dull start spring really took off with an exceptionally warm and sunny May but with two thundery spells which provided both the sunniest and wettest month of the year. The warm trend continued into mid summer, but deteriorated from then on, and the late summer and early autumn months provided a notably wetter spell of weather compared with the many dry months earlier in the year and in the previous two years. Late autumn and early winter were cool with December, unusually, proving to be the coldest month of the year.

- January** The year started generally mild and changeable but the second half of January was more anticyclonic in nature with frost on many nights. The anticyclone was mainly over or to the southeast of the British Isles, and failed to draw in any really cold air which might otherwise have been expected. Overall, temperatures by night and day were not far from the long term means. It was a predominantly dry month (rain on only 8 days) but very wet on the 9th, so that the total rainfall for the month was also near normal.
- February** February was milder with only a relatively few nights of frost. Rainfall was only a third of normal. Anticyclonic conditions were again a strong influence but, with the main centre of high pressure to the south or southwest, winds generally moved around the northern side of the high to bring the mild but dry conditions.
- March** March was yet another mild month, but more changeable with near normal rainfall and many wet days, particularly towards the end of the month. Perhaps as a consequence it was noticeably a dull month. There were two outbreaks of cold northerlies in the last week, but the consequences for Bedfordshire were not that marked.
- April** April was also dull and generally on the mild side with above average rainfall but not that many rainy days. Taking the months January to April as a whole there were only four days with sleet or snow observed, and that mostly mixed with rain, and just 28 nights on which air frost was recorded. However, there were no really warm days either.
- May** May 1992 was an exceptional month, probably the warmest of the century, and over England as a whole the warmest since 1833. The highest temperature of 26.6°C was reached on 14th, and the daytime temperature exceeded 21°C (70°F) on 11 days. It was also the sunniest May on record, and easily the sunniest month of the year averaging over 8 hours per day. The month ended with some very heavy thundery rain — Luton had its highest May rainfall since 1924. At Silsoe (see Table 1) 27.2mm of rain was recorded on 28th, followed by 62.1mm on 29th (equivalent of 3 inches in just two days).
- June** This was another warm month, but with a number of wet days early on. The last three weeks were dry until the month end. It was generally the warmest June since the record breaking summer of 1976, but still a good way short of matching the weather of that year. It was somewhat drier and slightly sunnier than usual.
- July** July was a more changeable month, though still slightly warmer than usual (more because of warm nights rather than days), but generally cloudier and much wetter. Rain fell on 17 days particularly in the first half of the month, with the 1st, 5th and 21st being particularly wet.
- August** August, perhaps the main summer month, was again wet (the second wettest month of the year) and, apart from the first week, generally cool. Rain fell on a total of 19 days throughout the month except at the start. Indeed, it was the wettest August at Silsoe since records began in 1951.
- September** Temperatures were just a little below normal, but it was again a very wet month, particularly at the very end when Bedford achieved national notoriety for being on red alert following particularly heavy rainfall on 22nd. The flooding along the Great Ouse, though extensive, appeared to have caused little damage to property. Crowds turned out at Bedford on 26th to admire the flooded Embankment area.

October October continued the run of wet months, but was also a cold month (the coldest October since 1974 and the fifth coldest this century) particularly towards the end, with ground frost on at least 11 nights, and some air frosts as well.

November November was yet another wet month, but generally mild, with an absence of the fog and frost normally associated with this month as a consequence of the continuous succession of depressions moving eastwards to the north of Britain.

December December was colder and drier than normal, though this hides two distinct phases. Until the 18th the weather was near average for the time of year with rain on a number of days. Thereafter the weather turned cold and anticyclonic, but dry, with frequent severe frost, low daytime temperatures as well, and with much fog and rime. Indeed, Christmas Day may not technically have qualified as a white Christmas, but that is certainly the appearance that was to be encountered over much of Bedfordshire at that time. Daytime temperatures failed to rise above freezing on three separate days, and the coldest night of the year, with a temperature of -9.2°C occurred on 29th December.

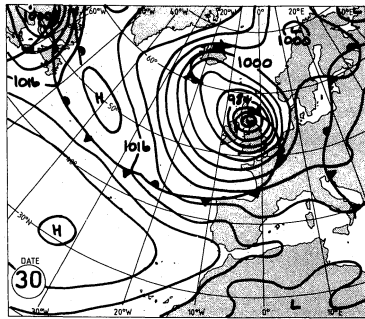
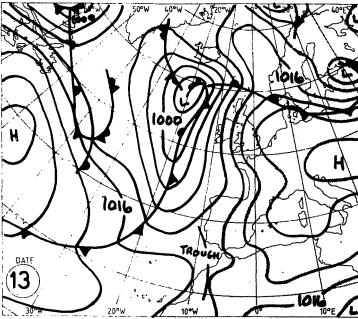


Figure 1. Weather chart for 13th May 1992 showing an extreme run of southerly winds from North Africa giving May's highest temperature of 26.6°C the following day.

Figure 2. Weather chart for the 30th August 1992 showing an unseasonable deep low typical of the month.

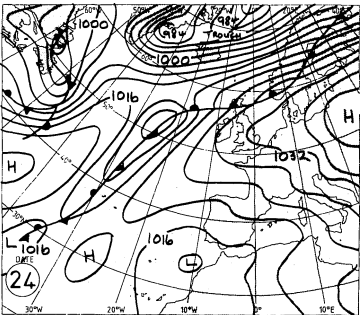


Figure 3. Weather chart for 24th December 1992 showing strong anticyclonic influence making it the coldest day of the year with a maximum of -1.8°C .

Extensive rime near Flitton, Bedfordshire, late December 1992
(Photo: Mike Williams)



Flooding of Bedford Embankment, September 1992

(Photo: Mike Williams)

The figures in Table 1 were kindly provided by Margaret Boon from the records kept at Silsoe College. Readings are made using conventional recording equipment, alongside more automated sensors, and have provided a more reliable record than the fully instrumented data which is all that is now available from the previous Silsoe site at Wrest Park. The two sites are close together (within half a mile or so), at a similar altitude and exposure, and it is not unreasonable to compare records from Silsoe College with the much longer sequence available for Wrest Park from 1951 to 1990.

The synoptic weather charts are included with the kind permission of the Royal Meteorological Society.

Table 1. Summary of the weather for 1992 recorded at Silsoe College, Bedfordshire

	Mean Max °C	Mean Min °C	Highest Temp °C	Lowest Temp °C	Rainfall mm	Sunshine hours	Air Frost days
January	6.1	0.0	12.3	-9.1	47.5	39.1	14
February	9.1	0.8	14.1	-4.9	13.3	69.8	11
March	11.4	3.6	15.3	-3.8	42.1	72.8	2
April	13.4	3.7	17.4	-2.3	49.5	124.9	7
May	19.7	6.7	26.6	1.2	123.9	255.0	0
June	21.4	9.6	27.9	4.9	38.2	201.8	0
July	21.5	12.1	27.2	7.1	112.6	149.0	0
August	21.0	11.2	25.8	4.9	121.9	171.5	0
September	18.1	8.9	23.2	4.1	109.9	136.4	0
October	11.9	4.0	16.7	-2.1	78.6	99.5	4
November	11.1	2.9	15.9	-3.7	88.8	62.8	3
December	6.0	-0.4	13.5	-9.2	28.0	27.6	15
Year	14.23	5.26	27.9	-9.2	854.3	1410.2	56

MIKE WILLIAMS

GEOLOGY AND PALAEOLOGY

Report of the Recorder

This year has been somewhat less than satisfactory, circumstances beyond the Recorder's control preventing any field work from the last week in January until September. A number of visits were then made to various Cretaceous exposures as conditions permitted, until the continuous wet weather made the Gault Clay at Leighton Buzzard unworkable.

It was mentioned in the Report for 1991 that the Arlesey Brick Works quarry was scheduled for extension, and that as a result of this work a fresh exposure of Lower Chalk (Chalk Marl) would become available for study. A visit in September confirmed that this had been done along the eastern end of the quarry (TL 188348), and the original Chalk Marl face had been cut back several metres to reveal a new section. A survey of the strata drew a blank as regards fossils, some weathering being desirable for locating the very small teeth that had occasionally been obtained at long intervals on previous visits. A large drainage trench excavated at a lower level, at the base of the chalk, had cut through the Cambridge Greensand and the small phosphatic nodules were plentiful. A search of this bed was made, but apart from several cusps of shark teeth previously recorded — *Scapanorhynchus* sp. — no fauna were recorded other than broken fragments of *Inoceramus* sp.

A brief inspection subsequently made of the Lower Chalk at Totternhoe Lime Works (SP 982221) again yielded nothing of importance, either in the "Grey Chalk" or the underlying Totternhoe Stone. The deepest section from which samples of the basal nodule bed were obtained for acid digestion (Smart 1991) was completely under water and the upper beds of the blue-grey Chalk Marl *mantelli* Zone were inaccessible. A large fragment of an ammonite whorl, *Acanthoceras* sp., had been placed near the entrance to the deep section by the quarrymen, but the poor condition of it rendered it worthless and it was left on site.

Apart from these two chalk visits, the Recorder's work concentrated on the Leighton Buzzard pits. Mundays Hill quarry had during the year been enlarged along the western side adjoining Nine Acre pit, and this extension had been anticipated with some eagerness. This area was the last section in Mundays Hill that revealed the Shenley Limestone cropping out from the junction bed, and it had been hoped that the cutting back of the clays above the sands would result in a new exposure. Several lenses of the limestone and iron-pan breccia indicated the general position of the possible lenticles but, very disappointingly, the expected limestone did not materialise after the excavation work. To make matters worse, the small blocks and lenses of material available for study prior to the quarry enlargement were buried beneath sand and tipped Gault overburden from the neighbouring Nine Acre pit, the quarry boundary having been altered by some thirty metres.

Although the Shenley Limestone at Mundays Hill did not appear as hoped, and no other exposures of the lenticles (as distinct from the lenses of limestone fragments and iron-pan) occur at the present time in either Mundays Hill pit or the adjoining Nine Acre quarry, the large quarries nearer Heath and Reach have occasionally exposed the limestone in the past although not in large quantities. Lenticles have been scarcer, while lenses of limestone and iron-pan have been more extensive, some being very thin (10 cm maximum) and revealing swirl patterns. A closer watch will be kept on these: Stone Lane quarry, SP 928290; Bryants Lane quarry, SP 930286 and Bucklands quarry, SP 931284 — this latter exposing some fifty metres of the limestone in 1989 (Smart 1990).

From September until the onset of the wet weather, the Gault was inspected at Mundays Hill pit, Chamberlain Barn pit and Billington Road quarry. These quarries have in the past yielded vertebrate remains, mainly fish teeth, and were more prolific than any other of the Leighton Buzzard exposures due to the presence of the phosphatic nodule beds. Also, these three have recorded teeth of *Notorhynchus* sp., and the relatively short period remaining for study on the dry, hard Gault surface decided the Recorder to concentrate on these.

Nevertheless, few teeth were discovered, and none at all of *Notorhynchus aptiensis* which was a great disappointment. The quarry extensions in these three quarries had revealed fresh faces of clay, and for this reason the occurrence of rarer fossils was expected. Unfortunately, the Leighton Buzzard area has become a study locality for various geology courses, the Recorder observing parties of up to twenty students on frequent occasions. While this increase in geological teaching is admirable from some points of view, the number of people walking over the Gault slopes is steadily

increasing. The damage done to very small fossils — and in this category can be placed all fish teeth and fragile vertebrae — is obviously very serious indeed.

Despite this handicap — or because of it — three small undamaged teeth of *Scapanorhynchus subulatus* (Agassiz) were obtained from Munday Hill pit, *dentatus* Zone, although this species has been recorded previously from all the Leighton Buzzard quarries. Unidentifiable cusps were more frequent, the roots broken away by the many disturbances to the weathered surface of the Gault caused by the excessive numbers of visitors. Nevertheless, a previously unrecorded shark was noted, not on site but in the collections of the Natural History Museum. This was *Cretolamna woodwardi* Herman, teeth of which already existed in museum collections (including the Recorder's) under the incorrect nomenclature *Cretolamna appendiculata* (Agassiz). That this species should have appeared is based primarily on the shape of the root, *C. woodwardi* being curved while *C. appendiculata* is more angular. Figure 1 illustrates these differences with two specimens in the author's collection. However, the monograph on these (Herman 1977) is nevertheless confusing, many of his illustrations of *C. appendiculata* being indistinguishable from *C. woodwardi*. In fact, only one tooth is figured as *Cretolamna woodwardi* nov. sp., the remainder being *C. appendiculata* split into three: *C. appendiculata* (Agassiz) var. *appendiculata* nov. var.; *C. appendiculata* (Agassiz) var. *pachyrhiza* nov. var. and *C. appendiculata* (Agassiz) var. *lata* Agassiz.

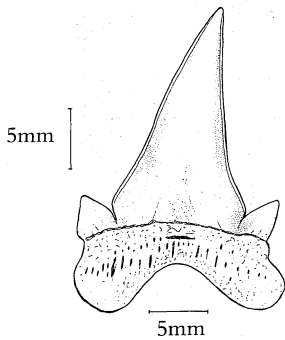


Figure 1(a)
Cretolamna woodwardi Herman
 Upper anterolateral tooth. Labial view.
 P.J. Smart coll. No. 14924 M

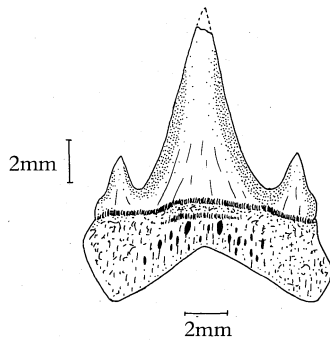


Figure 1(b)
Cretolamna appendiculata (Agassiz)
 Upper anterior tooth. Labial view.
 P.J. Smart coll. No. 15015 M

Both specimens in Figure 1 were obtained prior to 1992 from the Lower Gault *dentatus* Zone, Munday Hill quarry, the tooth in 1(a) originally determined as *C. appendiculata* and re-determined this year.

Some thirty *Cretolamna* teeth were taken to the Natural History Museum in November and December. The majority of them were changed from *C. appendiculata* to *C. woodwardi* after exhaustive examination, true *C. appendiculata* being possibly one in five. The varietal nomenclature of Herman was not employed and for the time being at least the two Gault species illustrated will be based as this. Figure 1 does, however, indicate the importance of complete teeth in identification work, particularly as regards genera with similar cusps. Also, as can be seen from the scale bars, *C. woodwardi* is a larger species than *C. appendiculata*, all the teeth over 25mm high taken to the Natural History Museum being determined as this species.

The gritty clays of the junction bed were well exposed in both Chamberlain Barn pit (SP 929265) and Billington Road quarry (SP 930241) due to extension work which was still in progress. However, nothing not previously recorded was obtained, incomplete specimens of the ammonites *Beudanticeras newtoni* Casey and *B. arduennense* Breistroffer occurring at both localities. The overlying Gault of the *Hoplites dentatus* Zone was not studied at these two quarries, this work being concentrated at Munday's Hill pit. Here, in the Lower Gault *dentatus* Zone, was found the only noteworthy specimen — a small piece of a fang tooth of a species of Pachycormid, a Mesozoic group of primitive bony fishes. This was too incomplete to determine other than by genera at the Natural History Museum, but the numerous, fine longitudinal cracks in the enameloid surface — “post-mortem” cracks — indicate that the enameloid is extremely thin, a characteristic of this group. A well preserved specimen was obtained from the Lower Chalk in Hertfordshire (the Hitchin Lime Works) when it was a working quarry in 1956. This tooth was determined at the Natural History Museum as a “Fang” tooth of *Protosphyraena ferox* Leidy and is illustrated in Figure 2(a).

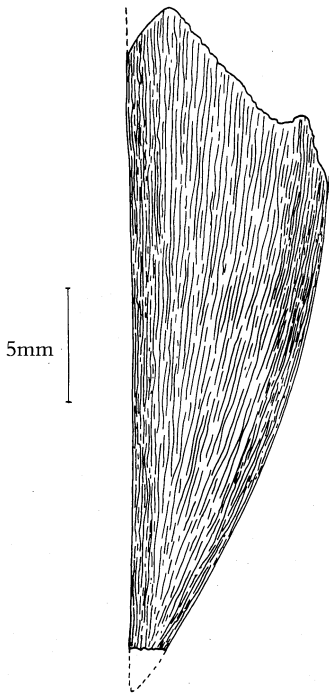


Figure 2(a)
Protosphyraena ferox Leidy
 fang tooth. Upper Cretaceous,
 Lower Chalk, Hertfordshire.
 P.J. Smart coll. No. 14877 M.

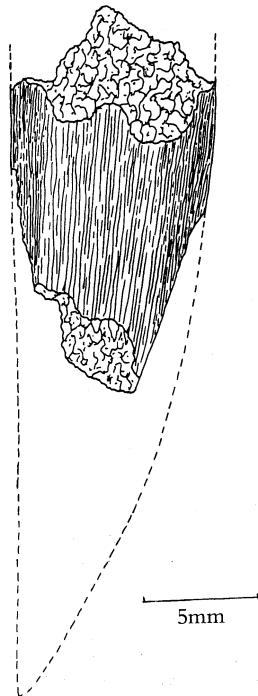


Figure 2(b)
Protosphyraena sp.
 fang tooth. Lower Cretaceous,
 Lower Gault. Leighton Buzzard.
 P.J. Smart coll. No. 15141 M.

Figure 2(b) is the Lower Gault specimen from Munday's Hill pit, drawn within the profile of *Protosphyraena ferox* illustrated in 2(a). The post-mortem cracks and the accuracy with which the fragment fits the profile leaves no doubt but that it is from a species of *Protosphyraena* that could well be *P. ferox*. *Protosphyraena ferox* was the last survivor and only Upper Cretaceous member of the Pachycormidae — large fish with a long rostrum like the extant swordfish (Longbottom and Patterson 1987) but many fish species had wide ranges and, as the Gault is towards the top of the Lower Cretaceous, the suggestion that the incomplete specimen is *P. ferox* is certainly valid (Colin Patterson — personal communication).

Generally, however, the 1992 Report is disappointing, mainly due to the omission of field visits between January and September. It is to be hoped that more field work can be done during 1993 which, coupled with quarry extensions, should produce additional County records.

ACKNOWLEDGEMENTS

I should like to thank Dr Colin Patterson, FRS., Dr Hugh Owen, FGS., Dr Peter Forey and Dr Alison Longbottom of the Dept. of Palaeontology, The Natural History Museum, for identifying various specimens and for allowing me access to the Museum collection.

My sincere thanks also to the following for granting me consent to visit their properties:- Messrs Joseph Arnold and Sons Ltd. Billington Road, Leighton Buzzard; Mr R.A. Bates and Mr Bruce Rogers, Totternhoe Lime and Stone Co. Ltd., Totternhoe; ECC Quarries Ltd. (Garside's Sands), Eastern Way Works, Heath & Reach, Leighton Buzzard; Mr P. Norton, Butterley Brick Company, Arlesey; Mr F.R. Walpole and Mr R.J. Saunders, L.B. Silica Sand Ltd., Grovebury Road, Leighton Buzzard, and their staff who are always most helpful.

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P.J. SMART

MAMMALS

Report of the Recorder

The 1992 report has been compiled with records received from 28 observers. 26 species have been reported although two species, Otter and Roe Deer, must remain as unconfirmed records due to full field notes not being submitted. For anyone lucky enough to find a rare Bedfordshire mammal in the future, please make sure full notes are made and submitted.

The most records for small mammals came from Woburn where Barry Nightingale kept a meticulous note of all the small mammals caught by his cats during the year. In 1992 this totalled 63, of which just over 50% (33) caught were Short-tailed Voles. This is an easy project for other members to participate in and can give some interesting results if the species are identified and monthly totals listed in a table.

Mink have become well established in the north and the west of the county but we still need all records so that the spread into other areas within the county can be properly mapped. The deer are another group where the population spread must be documented and, with population levels of three of the four species (excepting Sika) recorded in 1992 at an all time high, movement into new areas within the county can well be expected.

Wallaby *Macropus* sp. A male was found dead in a hedgerow TL03B (HW). This was the first record away from the Whipsnade area and, although not specifically identified, it was presumed to be a Red-necked Wallaby (*Macropus rufogriseus*) which is the only species known to be kept in captivity in Bedfordshire. Two animals that escaped from Whipsnade Park during the year were recaptured in the Bison Hill/Whipsnade vicinity (CT).

Hedgehog *Erinaceus europaeus* The first of the year was seen at Haynes on the exceptionally early date of 18th January (JA), with the same observer also recording the last of the year on 1st November. Hedgehogs in the rural areas seemed to be in low numbers and were difficult to find. This was not the case in urban areas such as Luton where numbers were at least average (BC).

Common Shrew *Sorex araneus* Nine animals were caught by the cats at Woburn with a summer peak of two caught in both June and July.

Pygmy Shrew *Sorex minutus* A total of 14 were caught at Woburn with the highest totals in the winter of two in February, three in October and two in December. This species spends more time above the ground in the winter than Common Shrew and this is probably reflected in the catch totals.

Water Shrew *Neomys fodiens* Live animals were recorded from the Shuttleworth/Old Warden area (TL14H) (JS).

Rabbit *Oryctolagus cuniculus* A large number of records were received with a black individual being seen at Turvey (SP95R). The usual autumn bout of myxomatosis was reported from several sites with the reported infection of many pet rabbits at Dunstable.

Brown Hare *Lepus capensis* Variable comments were received on population levels. A significant decrease was reported from Chicksands (TL14F) whereas on 'set-aside' land at Great Oaks Wood (SP95R) the farmer reported an increase. 11 together in a recently mown hay field at Eaton Bray in July and 80 at Southill Park in February were the only significant counts.

Bank Vole *Clethrionomys glareolus* 12 caught from 33 traps set in Maulden Woods (TL03U) in September made this the commonest species trapped at the site this year.

Short-tailed Vole *Microtis agrestis* 33 were caught during the year by Barry Nightingale's cats at Woburn, with a peak of nine caught during October.

Water Vole *Arvicola terrestris* Reported from just two sites. The R. Lea population continues to remain healthy (BC) and one was reported from Stewartby (JA).

Harvest Mouse *Micromys minutus* Three records. One nest was found at Haynes (DP) (TL14A) whilst weeding. The other two records were of live animals; one caught in September trapping at Maulden Woods and the other of an animal caught by a cat at Aspley Guise (SP93I) (PC).

- Grey Squirrel** *Sciurus carolinensis* There was a welcome number of records of the melanistic form or "Black Squirrel". They were recorded from five sites with maximum numbers seen at the sites being one at Whipsnade Park Zoo (TL01D), one at Tingrith, three at Woburn (SP93L) four at Clarendon (TL04Q) and one at Sandy (TL14Z).
- Fox** *Vulpes vulpes* Very common throughout the county with many records received. Daytime feeding included animals with Black-headed Gull prey at Rookery Pit (BS PT) and a very bold animal taking chickens from Bidwell Hill (TL02C) (DG) in the afternoon. Urban foxes now seem to be a common occurrence with several seen regularly in Bedford (DP) and also Luton (HW).
- Badger** *Meles meles* Unfortunately the roads take a heavy toll on badgers with ten deaths reported. The road casualties were spread throughout the year with a peak of four deaths during March.
- Ferret** *Mustela furo* One seen crossing the road at Stockgrove (SP92J) in February was of a polecat variety (JC). This is a new 10 Km square record.
- Mink** *Mustela vison* Reported from Dunstable, Leighton Buzzard and Harlington, road casualty (MF). One seen at a pond at Cranfield was identified from a film taken by a security camera (DA).
- Otter** *Lutra lutra* An unconfirmed report of a dead animal being found in the west of the county.
- Stoat** *Mustela erminea* Luton Hoo and Blows Downs, Dunstable are two sites where Stoats were seen on several occasions. 20 were counted on a gamekeeper's gibbet at Chicksands Wood (TL14F) (DP).
- Weasel** *Mustela nivalis* Seven records, all of single animals from sites widely scattered across the county.
- Chinese Water Deer** *Hydropotes inermis* Eight observers reported this species with the thriving population around the Woburn area much in evidence. The only records received any distance from Woburn were a female in a bean field near Whipsnade (SP91Y) and a male killed on the A600 road near Chicksands (TL14F). The latter record was a new tetrad record.
- Fallow Deer** *Dama dama* A herd of five were present for most of the year in the Caddington Golf Course/Zouches Farm area (TL02K). Another herd of 6-7 were seen near East Hyde in the autumn. Other records consisted of 1-2 deer at Millbrook test track (TL03E), Wakes Farm (SP93X) and Whipsnade Golf Course (TL01D).
- Muntjac Deer** *Muntiacus reevesi* Records were received throughout the county with animals visiting gardens in Luton (TL02W) and Woburn. A decline was noted in Chicksands Wood (TL03Z) (DP) but in Southill Park a keeper estimated a Park population of around 200 animals.
- Roe Deer** *Capreolus capreolus* One was found dead as a road casualty in Buckinghamshire not far from the south Bedfordshire county boundary. There were also two unconfirmed reports, both in the south of the county.
- Sika Deer** *Cervus nippon* An injured animal on the road at Eversholt (SP93W) in February was a severe blow due to the very low county population. On a brighter note six were seen together in May in the stronghold for this species in the county, Wakes Farm (SP93X).

ACKNOWLEDGEMENTS

I would like to thank the following list of observers whose records have made the publication of this report possible:

J. Adams, Dr D. Allen, P. Almond, D. Anderson, R. Brind, R. Catchpole, S. Cham, J. Childs, P. Clarke, B. Clutton, R. Dazley, T. Donnelly, M. Fagan, D. Green, B. Hicks, L. Jarrett, G. Lambourne, B. Nau, B. Nightingale, D. Parsons, M. Pockock, Dr J. Sharrock, B. Squires, T. Smith, C. Tack, P. Trodd, H. Winter, F. Westrobe.

CLIFF TACK

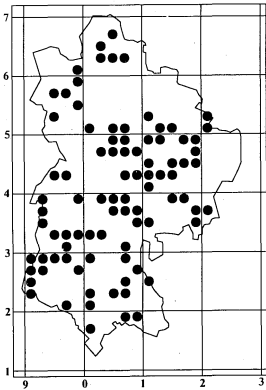
CORRECTION

Cliff Tack has pointed out that the photograph of deer at Woburn Park on page 8 of the *Bedfordshire Naturalist* 46 shows Axis Deer, not Fallow Deer.

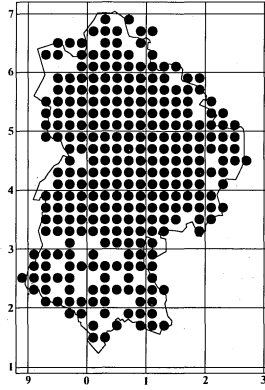
MAMMALS—BATS

Report of the Recorders

In 1992, bats were recorded in 88 tetrads (2km × 2km squares). This is slightly down on the previous two years. Bats were recorded from 101 tetrads in 1991 and 98 tetrads in 1990. There was an even spread of records from all around the county.



Bat Records 1992



Bat Records 1987 - 1992

The first bat of the year was recorded on 23 February by Paul Trodd who saw an unconfirmed pipistrelle flying around an ash tree in Eaton Bray (SP9620). A number of bats were recorded flying in March. A bat, probably a pipistrelle, was seen emerging from a house in St. Alban's Road in Bedford (TL057510) during the day on 4 March. Another, also likely to be a pipistrelle, was seen on the same day in Rothsay Gardens in Bedford (TL055500). A bat was seen by Robin Spicer on 16 March in Warden Street, Old Warden, (TL128439) and an unconfirmed Daubenton's bat was seen flying by day in Priory Country Park (TL0648) in March by David Kramer.

The latest recorded flying bat, an unconfirmed pipistrelle, was recorded on 15 December in Bromham Park (TL012509) by Peter Almond. A confirmed pipistrelle was found injured at a house on the High Street, Gravenhurst, (TL112359) on 16 December. It was likely that this bat had been caught by a cat and therefore could have been in hibernation.

Daubenton's Bat *Myotis daubentonii* Two active maternity roosts were recorded, both at traditional sites. The Stockgrove Country Park roost (SP917290) held a record 90+ bats. A single count was made at the roost at The Lodge, Sandy (TL191483) and 27 bats were noted emerging. An unconfirmed roost close to the one at Sandy was believed to be unoccupied during the year.

Bats were found in hibernation at the Silsoe ice-house (TL085364) on 12 January and 9 February (a single bat on each date) and at Woburn ice-house (SP963319) on 9 February (again, a single bat).

An uninjured, but extremely thin, Daubenton's was brought in from a school in Amphill Road, Bedford (TL049488) on 20 October. It was fed and released on 24 October at the nearest stretch of river at Longholme, Bedford.

The unconfirmed records were all of bats seen flying over water. The nine reports had a fairly even spread over the county. The earliest record, reported by Dave Kramer at Priory Country Park (TL0648), was in March during the day, but all other records were at dusk.

Whiskered/Brandt's Bat *M. mystacinus/brandtii* Bats were seen flying at the entrance of their traditional roost at Old Warden Tunnel (TL115441) on 15 September.

Natterer's Bat *Myotis nattereri* There were two confirmed and two unconfirmed maternity roosts during the summer, all in churches. A lactating female was caught from the traditional porch roost at Westoning Church (TL028328) on 30 June. On 17 September, three bats were seen clearly, flying in the tower of Battlesden Church (SP959291) another traditional roost for this species.

Droppings and flying bats at dusk were recorded from Keysoe Church (TL073625) on 12 September when visited as part of the National Church Survey. This was not previously known as a Natterer's roost. Natterer's droppings were also found in Tingrith Church (TL007325) on 5 December on an English Nature call.

Hibernating Natterer's bats were identified from five separate sites during the year. Woburn ice-house (SP963319) had bats on all three survey dates, with a maximum of ten on 9 February when a new area high in the ceiling of the chamber dome was investigated. Silsoe ice-house (TL085364) also had bats on each survey date with nine on both 12 January and 9 February. A single bat was recorded from a low hole near the floor of the tunnel in Southill ice-house (TL142421) on 9 February and two bats in both Linslade wine cellar (SP917260) and Barton lime tunnel (TL077297) on 13 December.

Noctule *Nyctalus noctula* There was one confirmed record of a noctule during the year. This was a female picked up at the Dunstable Bingo Hall (TL018220) on 21 April. She was extremely thin and had probably overwintered somewhere in the building. She ate ravenously and put on weight rapidly. She adapted to captivity very well and purred loudly in the hand and in the company of a captive one-winged noctule. It was attempted to release her on 23 April and 27 April but she showed a great reluctance to go. As the weather deteriorated on both evenings, she was not unduly encouraged to leave. On 28 April it was again attempted to release her. Again she showed no urge to leave, feeding and purring in the hand, and had to be gently pushed. She did however fly strongly.

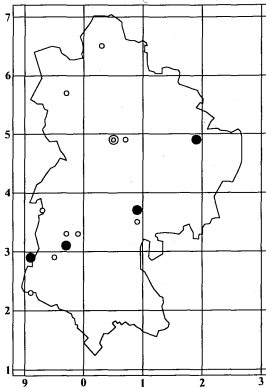
Seven unconfirmed reports of noctules were all of single bats or small numbers flying at dusk. Five of the records were of bats flying over water. One or two were reported flying over the meadow outside The Lodge, Sandy (TL1846) on 11 July and two were seen flying over heathland and conifers at Aspley Heath (SP925343) on 10 June.

On 7 December a silver birch was felled at Everton Hall (TL212522) and two large bats killed. The bodies were not available to confirm identification and the remaining two live bats had flown from the roost. It is possible that these were noctules.

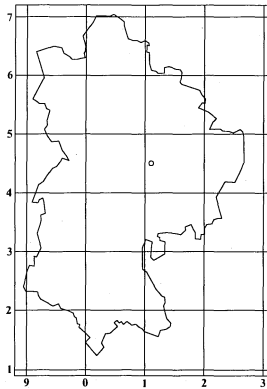
Pipistrelle *Pipistrellus pipistrellus* Three pipistrelles were found hibernating. The first was on 8 January in Stockwood Park, Luton (TL085196). The bat had found its way into one of the stage coaches in the Mossman Collection and was roosting between a cushion and the back window. One was found hibernating behind a noticeboard in the porch of Cranfield Church (SP955420) on 23 January. On 4 March, a builder reported finding a bat behind a barge board on a house on the High Street, Pavenham (SP989554).

A total of 16 confirmed and nine unconfirmed summer roosts were recorded. Of these, there were four church roosts: Blunham (confirmed) and Keysoe, Biggleswade and Riseley (unconfirmed). Unconfirmed summer roosts were reported in the post office at Tebworth and 200+ bats from the roof of The Temple, Southill Estate. All the other roosts were in houses. Confirmed roosts were recorded from Ampthill, Bromham (180 bats counted out), Haynes Northwood End (100 bats), Haynes Silver End (22 bats), Heath and Reach, Leighton Buzzard (57 bats), Lidlington, Linslade (87 bats), Maulden, Renhold, Salford (30 bats), Turvey, Westoning, Woburn (85 bats), and Blunham (a record roost count for the county of 490 bats). Unconfirmed house roosts were reported from Ampthill (26 bats), Maulden, Sandy and Shefford (10 bats).

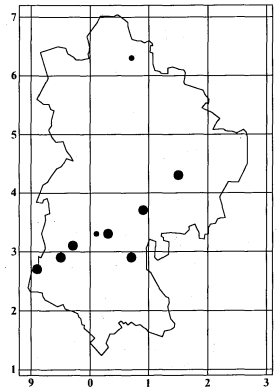
Thirty-nine dead, injured or grounded bats were recorded. Some of these were bats trapped in houses: a bat in Upper Dean was found dead in a cup in a cupboard; a very weak bat, which later died, was found in the sink of a house in Cardington when the owner returned from holiday; two bats were released unharmed from the Adult Training Centre at Biggleswade and a bat was released unharmed from The Lodge, Sandy.



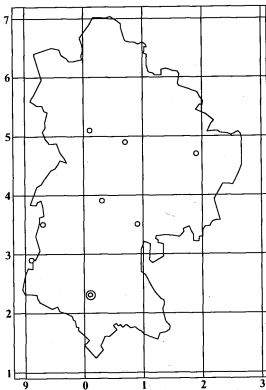
Daubenton's Bat
Myotis daubentonii



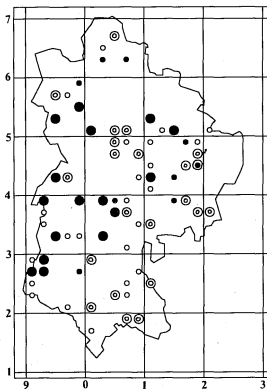
Whiskered/Brandt's Bat
Myotis mystacinus/brandtii



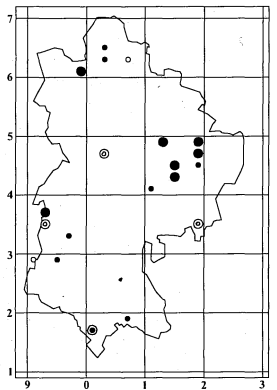
Natterer's Bat
Myotis nattereri



Noctule Bat
Nyctalus noctula



Pipistrelle Bat
Pipistrellus pipistrellus



Brown Long-eared Bat
Plecotus auritus

- Key:**
- Confirmed roost
 - Unconfirmed roost
 - ⊙ Confirmed bat
 - Unconfirmed bat

Other casualties were juveniles from roosts: the large roost at Blunham suffered seven dead babies and in Heath and Reach, baby bats fell down the gap in a cavity wall and electrocuted themselves behind the electricity socket.

Cat damage was the commonest injury to bats. Others were picked up sick but without obvious injury. A bat found on the road outside Harrold and Odell Country Park had most likely been hit by a car. Another pipistrelle was damaged by a barn door.

A further 34 records of flying bats were received. 23 February was the first record of a flying bat for the year and it was seen in Eaton Bray (SP9620). The last record was in Bromham Park (TL012509) on 15 December. An estimate of over 200 flying bats was made on 30 April in Priory Country Park by Tony Aldhous and a kestrel was observed hunting them. One bat was observed flying around a streetlight in heavy rain in Queen's Drive, Bedford (TL070510).

Twelve records of unidentified bats, including five roosts, were also received. It is probable that many of these were pipistrelles. A vacant property in Riseley had had bats move out from under the eaves and take possession of one of the rooms, roosting in the roof apex which was uncladded. A roost was also discovered in a cavity wall in a house in Amptill when repairs were carried out.

Brown Long-eared Bat *Plecotus auritus* Single bats were recorded in hibernation at Shuttleworth ice-house (TL144442) on 12 January, in the Braystone Hibernaculum, Aspley Guise (SP935372) on 12 January and 9 February and in the Southill ice-house (TL142421) on 12 December. Two bats were recorded from Moggerhanger ice-house (TL135487) on 12 December.

Fourteen summer roost sites were identified and four confirmed. Three of the confirmed roosts were at Sandy. Three bats were counted out of the roost in the print room roof at The Lodge (TL189478), five bats were counted in the Gatehouse roof (TL191486), and a roof space in a house in Stratford Road (TL185477) had a large colony. The fourth confirmed roost was reported from the High Street, Souldrop on 28 August (SP9860).

The unconfirmed roosts were recorded at five churches (Biggleswade, Caddington, Melchbourne, Riseley and Whipsnade), an old chapel in Rowney Warren, the Old Rectory at Eversholt, the Old Rectory at Potsgrove and two large, old houses; Shortmead House at Biggleswade and Jubilee House at Sharnbrook.

Single bats were found roosting in the open at The Lodge (TL188478) (this bat was very thin and was taken into captivity to feed up before release), in the garage of the Old Coach House, Aspley Heath, (SP9234), and at Morland's Farm, Arleseay (TL191357).

Four bats were found dead or found sick and later died. These came from Kempston, Renhold, Thurleigh and Whipsnade.

A further three records were received of single flying bats. These were recorded at Stockgrove Country Park (SP916291), Aspley Heath (SP925343) and Keysoe (TL060620).

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JOAN CHILDS and TONY ALDHOUS

BADGERS AND THE LEIGHTON LINSLADE SOUTHERN BYPASS

by John Comont

INTRODUCTION

Construction of the Leighton Linslade bypass commenced in April 1990. Part of the road was opened to traffic in August 1991 with the entire road opened to all traffic in October 1991. Strenuous efforts were made to construct fencing to prevent badgers being killed on the new road. Unfortunately, in the fifteen months since August 1991, at least 15, probably 17, and perhaps more, badgers have been killed while crossing the road. All involved in attempts to conserve the local badger population have learnt a great deal about badgers and their relationships with roads. This report outlines the sequence of events and attempts to identify problems and errors which resulted in this high level of badger deaths. It is hoped that the lessons learnt may help to reduce damage to badger communities when future roads are planned and built.

BACKGROUND BIOLOGY

Badgers live in groups and the members of each group jointly defend a territory. Other badgers are more or less excluded from this area, which will encompass sufficient foraging opportunities to support the group throughout the year. Territories are marked by scent; dung pits are often used for this purpose. A number of setts of different sizes and functions may be found within the territory of a single group. At present four categories of sett have been recognised:

Main setts These are in continuous use. They are large, well established and often extensive. It is where the cubs are most likely to be born. There is only one main sett per social group of badgers.

Annex setts These occur in close association with the main sett and are linked to the main sett by clear well-used paths. If a second litter of cubs are born, this may be where they are reared.

Subsidiary setts Distant from the main sett, not in continuous use and not obviously connected to the main sett by a path.

Outlying setts Setts of only one or two holes and unlikely to be extensive underground. Used intermittently. When not in use by badgers they are often taken over by foxes or rabbits.

Some experts prefer to simply divide setts into two categories, main setts and secondary setts but for the purposes of this report I have used the four types listed above.

PLANNING THE ROAD WITH BADGER PROTECTION MEASURES

Pressure to relieve traffic problems in Leighton Buzzard and Linslade evolved in the early 1980's into a major single carriageway trunk road twelve metres in width running for fourteen kilometres from the A5 at Thorn Turn, Houghton Regis, south of Leighton Linslade to join the A418 between Linslade and Wing. At the time of the original design of the road in 1983 enquiries were made of the Mammal Recorder for Bedfordshire Natural History Society as to any measures that should be taken regarding known badger sites. A plan was provided confirming sites of badger setts known to exist. It was noted that setts existed on both sides of the proposed road in the Grovebury area and recognised that badgers crossing the road at Grovebury would be a problem. Closure of the main sett in this area was considered, as was installation of badger fencing along both sides of the road for its entire length.

Following letters and discussions between the design engineers, the Mammal Recorder and the then Bedfordshire and Huntingdonshire Naturalist's Trust (now The Wildlife Trust, Bedfordshire and Cambridgeshire), a plan showing proposed badger fencing adjacent to the Grovebury Road sett was supplied by the Mammal Recorder. This fencing ran along one side of the road only from the proposed new river bridge in the west to the Grovebury industrial estate to the east. The fencing was incorporated into the plans for the road. Other setts were considered to be far enough from the road not to require special provisions.

The possibility of a badger tunnel for the Grovebury sett was discussed during this period. It was considered that, as it was difficult to construct a tunnel near the sett due to drainage and depth considerations (at the critical point the road was in a cutting), it would be best to provide fencing to direct badgers to use the cattle underpass incorporated within the proposed river Ouzel bridge to the west of the sett.

The road scheme then passed through the relevant planning enquiry procedures and contracts for construction were drawn up and let late in 1989.

CONSTRUCTION OF THE ROAD

Soon after commencement of construction a single hole sett was noted at Grovebury very close to the excavations and on the opposite side of the road from the main sett. Concern was expressed that badgers would be attempting regular travel from the main sett to the single hole. It was suggested that the animals from the single hole would be unlikely to head west to the underpass in the absence of a fence on the south side of the road. The badgers would cross the road but be trapped by the extensive fence on the north side of the road. After discussions between the County Ecologist, Engineers and the Wildlife Trust it was agreed that fencing should be reorganised to run along both sides of the road from Grovebury roundabout to the underpass. This configuration would force badgers to cross either at the roundabout, where traffic would be slow and visibility good, or at the cattle underpass.

The Wildlife Trust informed the County Ecologist in the summer of 1990 that early earth moving had removed one hole used by badgers. Whether this hole as in use at the time was not known.

Post and rail fencing was erected as specified in the early stages of construction to allow the farmer to continue to graze cattle in adjacent fields but the badger fencing was not installed. Construction of the road continued with no obvious problems for the badgers.

New hedges were planted in winter 1990/91 and marginal drains set in gravel were installed parallel to the new fence and hedge. Badgers found the soft soil around the new trees an interesting foraging area and small excavations, snuffle holes, tracks and dung pits were noted along both hedge lines between the main sett and the river bridge.

There appeared to be a good deal of badger activity at the main sett during Summer 1991 and a hole appeared in the field some distance west of the main sett. Whether this was a new or reopened annex sett is unclear, however the field was cultivated and grew cereals in 1990 and the hole must, if it existed, have been destroyed at that time.

In August 1991 information was received from the BNHS indicating that further outlying setts belonging to the same social group had been located in a copse between Grovebury Road and Grovebury Farm and in hedgerows adjacent to the flood meadows some distance south of the new road. It was also discovered that traffic was now using the Grovebury Road and the section of bypass from Grovebury Road to Ledburn.

Badger fencing was erected during the last week of August and first week of September 1991. The contractors apparently had difficulty with the dryness and hardness of the soil. They buried and turned out the lowermost section of fence as best they could. The fence was immediately undermined by badgers at a number of points on a direct line between the main sett and the annex south of the road.

Fencing specified in the contract was:

"1.5m high, 100mm mesh galvanised wire sheep netting to 960mm up the post and rail fence and buried to 150mm depth, the remainder turned out and pegged or lightly turfed. Fixed with heavy duty staples. One strand of barbed wire above."

Subsequent discussions revealed that the contractors had claimed to be unable to acquire wire of the appropriate height and the resident engineer had agreed substitution of 1.2m high wire. As the height above ground was fixed by the rails of the post and rail this left only 240mm to be buried and turned out instead of the expected 540mm.

In mid September it was encouraging to note that whilst badgers continued to undermine the fence they also established routes around the eastern end of the fencing at Grovebury roundabout and footprints and dungpits were noted near the cattle underpass.

EVENTS FOLLOWING CONSTRUCTION AND OPENING OF THE ROAD

Immediately the inadequacy of the fencing was discovered steps were taken to ensure that wire was pegged down and badger undermining blocked on a daily basis by contractor's staff. A small contract was also let to a member of the Bedfordshire and Cambridgeshire Badger group to reinforce those parts of the fence under greatest pressure. This work was carried out on 24 September. Daily checking of the fence continued and undermining appeared to decline with no holes noted in the week to 4 October, 2 holes on the weekend 5/6 October, no holes on 7/8 October and 2 holes on 9 October. Unfortunately a dead badger was found on the road immediately between the main sett and the annex on 10 October.

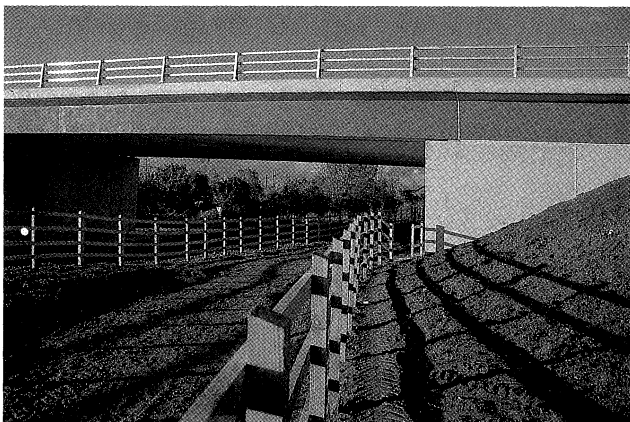
Daily blocking and pegging of the fence base continued and interesting behaviour patterns noted. A week with no undermining ended on the night of 7/8 November when 7 holes were excavated. These were blocked but 5 holes were open again on 11 November. A second dead badger was found on the 11 November again apparently crossing between the main and annex setts.

A visit by the County Ecologist on 13 November revealed that badgers had attempted to undermine the fence in at least fifteen different locations since the repairs of 24 September. Well-used paths were also noted around the eastern end of the fence and a dung pit found near the underpass. At this stage construction work was still being carried out on drainage structures and river banks at the cattle underpass. The post and rail and badger fence was incomplete and the BNHS noted signs of badgers pacing along both sides of the existing fence reaching the gap and climbing the embankment to cross the road. Tracks at Grovebury roundabout indicated that badgers outflanking the fence as intended were then cutting back in a straight line to their destination and meeting the fence on the opposite side of the road. Peanut trails were suggested to lure badgers to the cattle underpass as soon as construction and fencing was complete. As was to be expected there was a marked decrease in badger activity following the flurry of excavation in early November as the animals became less active.



One of many holes dug under the inadequately constructed badger fence 8.11.1991

(Photo: Paul Madgett)



The cattle and badger underpass at Yttingaford Bridge

(Photo: Paul Madgett)

Blocking of holes and pegging of the fence base continued through December and January and the BNHS reported increased signs of badgers using the cattle underpass and travelling around the eastern end of the fence at Grovebury roundabout.

The next casualty occurred in dramatic fashion. At 6.40am on 22nd January 1992 a driver on her way to work in London was driving down Wing hill in heavy traffic when she caught sight of something crossing from the right at the point where the road cuts through the corner of a small wood. "The animal just kept coming ignoring the traffic and a collision occurred." Police were called, the corpse removed, and the driver escorted home badly shaken. It seems likely that this animal was from one of the setts in Wing area not previously thought to have been at risk.

Unfortunately there followed a spate of further casualties with deaths on the link road at Stanbridgeford (January 92), on Grovebury Road adjacent to the industrial estate (January and March and Summer 92), east of Grovebury roundabout (February 92 and two later dates) and Billington to Stanbridge Road (at least four deaths, dates not recorded). By November 1992 at least fifteen badgers had been knocked down and killed on the new road. In addition at least two other casualties are known to have occurred in the Grand Union Canal (The Grovebury social group) and on the A418 Wing Hill (from one of the Buckinghamshire social groups). The badgers killed appear to have come from a number of different social groups.

LESSONS LEARNT

A national survey of the badger population of Britain conducted during the late 1980's estimated that there were 43,000 social groups containing 250,000 badgers in rural areas. The badger population in south west Bedfordshire appears strong. It might have been expected that construction of a substantial new road in an essentially rural area with little tradition of high speed traffic would cut through badger territories and result in some deaths. All involved have been distressed that, despite the best intentions, such a large number have been killed over such a wide front.

There appear to be many lessons to be learnt from the Leighton Linlade experience. Some problems stem from the different weight given to environmental matters over the ten years from detailed plan to construction. First "mistakes" arose in the early stages of planning of the road. Information on the location of many, though not all, social groups affected was supplied to the County Council in confidence in the form of a map showing sett locations. At the time it must be

remembered that there was far less published information on badger ecology than exists today. It was not fully appreciated that social groups other than that at Grovebury would be seriously affected and no survey of the road route to look for further setts or to record badger routes and foraging areas was carried out.

The timescale of road planning and construction was also a problem. Over the eight years from initial planning to the start of construction land use and other changes could easily have altered badger travel or foraging patterns and new or long disused setts could have been opened up. There was no provision for a survey immediately in advance of construction to check the assumptions and conclusions made about these factors. Such a survey would, for instance, have located the annex hole removed during construction and may also have discovered the sett close to the new Billington Road roundabout, subject of at least three casualties.

Legislation enacted in 1991 now makes it an offence to destroy a badger sett without such action being licensed by English Nature or The Ministry of Agriculture Fisheries and Food. There are thus legal as well as moral reasons for ensuring that badgers have not moved into a sett in the construction zone.

In 1982/83 it was understood that the badgers from Grovebury foraged over a wide area south of the proposed road though whether the extent of territory and number of outlying setts was known is unclear. It appears that during negotiations over protection measures naturalists were persuaded that the badgers could be deflected from traditional routes to use the underpass to the west. This may have been reasonable at the time when the adoption of any measures to keep the animals off the road could be seen as quite novel. Unfortunately, it seriously underestimated the determination and ability of the animals to stick to traditional routes. Badger tunnels constructed to the RSPCA design and sited as close as possible to the traditional routes could well have solved fence excavation problems. This of course implies that traditional routes are known. There appear to have been three key points at the Grovebury sett.

1. A direct route from main sett to annex
2. A route along the hedge line separating flood plain from arable land
3. A route from the north eastern annex to the fields around the Grovebury farm buildings and industrial estate.

At the first point a tunnel may not have been possible as the road was in a cutting and flooding may have been a problem, but at both other points tunnels could have been installed at an early stage of construction. The timing of badger protection works is important. At Grovebury badger fencing went up at virtually the same time as the road opened to traffic. There was no chance to solve problems before badgers came into direct conflict with road users. Coupled with this was the problem that the bridge and associated works was the first project to be started but one of the last to be completed. Men and machines were present almost daily and fencing was incomplete at the underpass at a time when it was hoped that badgers would quickly adopt this route.

The fencing specifications quoted earlier were broadly in line with recommendations from badger experts. Unfortunately, last minute alterations by the contractor seriously limited the effectiveness of the fence. These alterations were made without reference to a badger "expert". Good well maintained fencing is essential if badgers are to be persuaded to rapidly adopt new routes. The inadequacies of the fence were on this occasion well compensated for by determined efforts made by construction staff to ensure that undermining of the fence was daily checked and blocked. Peanut trails were also laid to encourage use of the underpass. It is a testament to these efforts that only two casualties are known to have occurred on the fenced section of road. These deaths were within the first two months of the badger fence construction and road opening to traffic. Unfortunately, there have been four further deaths from the Grovebury group. Three of these were at the same spot on the Grovebury link road.

The post and rail fence either side of the road was constructed early in the life of the project. With hindsight I would suggest that two badger tunnels installed at this early stage coupled with slightly more than double the length of fence could have greatly reduced mortality at Grovebury. Cost would have been greater but man hours put into fence checking and repairs could have been reduced. During discussion of remedial measures a constant problem was the possibility that badgers would find their way into a fenced area and have problems escaping. The layout of roads and tracks east of Grovebury roundabout is such that fencing could be very complicated and lengthy and yet would only slightly reduce this risk. Maintenance would become a problem and, of course, badgers could

FISH

Report of the Recorder

It is convenient for this report of 1992 to discuss the sites which have been surveyed in the county together with their related fish species rather than to present a descriptive list of species as was done for the previous report. The linear waters in question are the Great Ouse upstream of Bedford and the Ivel and its tributaries — the minor rivers Flit, the Hiz and the Hit together with the Ivel Navigation. The only still water site comprehensively recorded during 1992 was Priory Country Park at Bedford, details of which are also included.

The National Rivers Authority (NRA) surveys of the Ivel tributaries were undertaken and completed during December 1991 and therefore to be exactly correct the results should have been included in last year's fish report. The report on these sites has only recently been made available to the Recorder and so, because of its importance, is included this year.

Several interesting new records have been received this year of species rare in Bedfordshire and these are listed separately together with some notes relating to the species involved.

Obviously it is necessary to refer to the various fish species many times and therefore scientific names will be used only once in the listings of species recorded. This will avoid a plethora of names where there is surely no fear of mis-identification of firmly established common names.

SITES RECORDED

Upstream Stretch of the Great Ouse

The stretch of the Great Ouse upstream of Bedford may possibly be regarded as the most important fish habitat site in the county. There is a wide range of habitat type provided as the river meanders towards Bedford with some rapidly flowing shallow runs, slow flowing stretches and long glides with occasional deep pools all of which prove attractive to a wide variety of fish species. The NRA survey of the river reports biological quality good to excellent with good water quality to support fish population.

Perhaps the most notable and encouraging feature this year is a further increase recorded in stocks of Barbel in this stretch of the river, with young fish from the 1989 year class dominant showing successful spawning in the recent warm summer. Biomass and density estimates for the Barbel are now the highest ever recorded with the species forming 11% of overall fish biomass. The NRA reports greatest density at the Turvey site and also large numbers at Harrold. This also confirms the opinion of anglers in the area. It is also pleasing to record an increase in the Common Bream population both as a contribution to total fish biomass and density since the previous NRA report of 1988. Fish from the 1990 year class were dominant with a notable absence of fish from 1985 — 1988 year classes reflecting sporadic spawning success of this species.

In total 14 fish species were recorded from this stretch of the river, the dominant species by weight being the Pike, contributing 26% of total fish biomass, with Roach sub-dominant. Numerically the Roach was the dominant species, recording a figure of 46% relative abundance, followed by Bleak and Perch. Large numbers of Roach from the 1989 — 90 year classes were found to be present again showing good spawning success in those years. It is also interesting to note the Bleak is maintaining its position as a successful species as this was considered a question of some doubt in the early 1980s. An overall increase in Perch was recorded since the last NRA report of 1988 and the species was found to be present at every site sampled with good numbers of specimen fish included. The Chub was found to be present at the majority of sites surveyed showing especially well upstream where conditions are most suited to this species. The total population of Chub has remained stable since

1988, providing 15% of overall fish biomass. Unfortunately there has been a decrease in the numbers of Dace since 1988 but the species was still represented at the majority of sites sampled. The presence of that interesting species, the Silver Bream, was noted this year but not in sufficient numbers to assess quantitative figures and this species must be regarded as declining in the Bedfordshire Ouse.

Five other species were recorded in low numbers although present and of equal interest to the naturalist.

The total list of species and hybrids recorded for the Bedfordshire stretch of the upper Great Ouse in 1992 is as follows:

Pike *Esox lucius*, Barbel *Barbus barbus*, Bleak *Alburnus alburnus*, Chub *Leuciscus cephalus*, Roach *Rutilus rutilus*, Common Bream *Abramis brama*, Silver Bream *Blicca bjoerkna*, Dace *Leuciscus leuciscus*, Perch *Perca fluviatilis*, Gudgeon *Gobio gobio*, Tench *Tinca tinca*, Ruffe *Gymnocephalus cernua*, Eel *Anguilla anguilla*, Three-spined Stickleback *Gasterosteus aculeatus*, Roach/Bream hybrid.

River Ivel

The River Ivel was previously surveyed by the NRA during the years 1983, 1985 and 1989. The biological quality is now reported to be good to excellent with moderate chemical water quality capable of supporting fish life. There has been an overall increase in fish stocks since 1983 with 15 species recorded during 1992. Pike is the dominant species by weight, with Roach sub-dominant as in the previously described Great Ouse, with Common Bream and Chub following. Roach were recorded from all sites sampled and are numerically the most important species accounting for 67% of total fish density and 24% of fish biomass. The Roach population has increased 400% since the 1989 survey, largely with young fish from the 1988—89 year classes as a result of the favourable weather conditions during spawning. Stocking by angling societies has also had some additional beneficial effect. As recorded for the Great Ouse there has been an increase in stocks of the Common Bream in the Ivel, with the species now representing 20% of total fish biomass and found to be present at 50% of the sites sampled. The high % biomass figure is largely due to the location of a large shoal of fish at a site near Biggleswade Common, which again highlights the difficulty of accurately assessing this species which is subject to shoaling and constant movement. A more significant fact is its presence at so many sites with fish recorded from all year classes back to 1977, although, as might be expected the species prefers the slower flowing, deeper parts of the river. The Chub is also a successful species in the Ivel and was found at 80% of sites sampled showing 100% increase in distribution since the previous survey, with a slight increase in numbers of fish also noted. Dace made a small contribution to the total fish biomass but again overall numbers have increased since the previous survey. The Gudgeon is the sub-dominant species numerically in the Ivel but, as this is a small fish species, the contribution to overall biomass is also small. A further nine species and one hybrid were recorded in small numbers.

A complete list of recorded species for the River Ivel during 1992 is as follows:

Pike, Roach, Chub, Dace, Gudgeon, Common Bream, Perch, Common Carp *Cyprinus carpio*, Rudd *Scardinius erythrophthalmus*, Ruffe, Eel, Tench, Bullhead *Cottus gobio*, Minnow *Phoxinus phoxinus*, Stone Loach *Noemacheilus barbatulus*, Roach/Bream hybrid.

River Ivel tributaries and Ivel Navigation

Since records began the minor river Flit has always suffered from poor water quality, but recent sampling by the NRA shows a marked improvement. Unfortunately the river Hiz is regarded by the NRA as one of the rivers most liable to dry up in the South East region. The third minor river considered is the Hit. Numbers of all fish species in these three rivers were found to be low but, in spite of this, the situation in the Hiz has shown a marked improvement since the previous survey. The dominant species in the Hiz is the Roach which constitutes 95% of total fish density. In the Hit and the Flit the Roach is replaced by the Dace, although in the Flit this is now only found downstream of the Shefford site. Roach now appear to be absent from the Hit where previously this was the dominant species. It has previously been reported that the dominant species in the Hiz was the Rainbow Trout (*Salmo gairdneri*) but this species appears to be no longer present and has been replaced by the Roach as noted above. It is perhaps not surprising that the Rainbow Trout has failed

to produce a permanently self-sustaining population, although successful for a few years, as this is not a native species and was thought to have been introduced as fish farm escapees.

The NRA reports a recent trend towards improvement of water quality in the Ivel Navigation. Roach density here has increased almost 500% since the 1989 survey, largely due to young fish from the 1989 and 1990 year classes as recorded for other sites. A slight decrease in the contribution of Pike to the total fish biomass has also been noted. Interestingly, the Navigation is the only Ivel tributary in which Chub and Ruffe occur.

A list of all species recorded during 1991 for the Ivel tributories follow:

Roach (Hiz, Flit, Ivel Nav.), Chub (Ivel Nav.), Ruffe (Ivel Nav.), Dace (Hit, Flit, Hiz, Ivel Nav.), Pike (Hit, Hiz, Ivel Nav.), Gudgeon (Hit, Hiz, Flit, Ivel Nav.), Three-spined Stickleback (Hit), Bullhead (Hit, Hiz), Minnow (Hit), Stone Loach (Hit), Perch (Hiz), Eel (Hiz), Spined Loach *Cobitis taenia* (Hit).

Priory Country Park

The lakes at the Priory Country Park, Bedford were the only still water site where comprehensive records were obtained during 1992. One specimen of the variety of Common Carp known as the Leather Carp was reported to have been taken by an angler from the main lake. This is the only recorded specimen of this variety of Carp (not a separate species) during the last fourteen years.

A complete list of species recorded during 1992 follows:

Perch, Common Bream, Pike, Roach, Tench, Common Carp, Bullhead, Spined Loach.



Priory Country Park

(Photo: Mary Sheridan)

NOTES OF UNUSUAL SPECIES AND NEW RECORDS

Three records of the Spined Loach were received this year. A single specimen was taken from the New Cut, Bedford and the species was noted as present (presumably a single specimen) by the NRA at one site well upstream on the river Hit. Another single specimen was found stranded when the main river Ouse overflowed at Priory Country Park, Bedford. We begin to suspect that this species may be more widely distributed in the county than previously thought as records are slowly accumulated. This is a most elusive little species which easily avoids capture and is rarely if ever seen by anglers or the casual observer. Any further information or records of the Spined Loach are always very welcome.

A second species worthy of special note this year is the Brown Trout (*Salmo trutta*) which was mentioned in last year's report as in need of a new record to establish its status in the county. Historical records exist for this species from the Hiz and the Ivel at Radwell Mill but the nearest site for the Brown Trout presently known to the NRA in linear water is at Water Stratford, Bucks where 2nd generation native stock has been found. During 1992 one specimen of 1¼ lbs was taken from the New Cut, Bedford and several small specimens noted which may possibly indicate spawning success over a short period. Water flow in the main Ouse river is not sufficient for the water aeration required by this species for successful spawning but may be just sufficient in the New Cut or Canal Stream.

NEW TETRAD RECORDS FOR 1992

Stone Loach — 3 tetrads, Brown Trout — 1 tetrad, Ruffe — 1 tetrad, Spined Loach — 1 tetrad, Pike — 1 tetrad, Gudgeon — 1 tetrad, Three-spined Stickleback — 1 tetrad, Minnow — 1 tetrad, Bullhead — 1 tetrad.

CONCLUSION

It will be seen that recent studies by the NRA show a general improvement in water quality and an increase in fish stocks at most sites surveyed. The warm weather conditions with corresponding high water temperatures at the time of spawning in recent years has benefitted many species, especially the Barbel which has increased dramatically in numbers and distribution in both the rivers Ouse and Ivel. Also the recent increase in numbers of the Common Bream may be due in some part to the same cause. At the turn to the present century the Bedfordshire Ouse was noted by anglers for its heavy catches of Common Bream but this situation rapidly declined for some reason not fully understood or explained. It is pleasant to think a return of the species to its former abundance may be under way.

Continued stocking of some sport species by angling societies and the activities of the NRA, together with an improvement in water quality generally (at least in our most important rivers) all encourage an optimistic view of the future.

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HARVEY R. WINTER

FRESHWATER CRAYFISH

Report of the Recorder

The National Rivers Authority (NRA) has commissioned Nottingham University to undertake a three year programme of research to assess the effects of introduced alien crayfish species and of crayfish plague disease on the native Crayfish (*Austroptamobius pallipes*) population and to formulate a policy of measures for their conservation. This has become necessary because of a decline nationally of the native species due to these causes and also as the result of pollution, waterway management schemes and recent low water levels. This decline has been particularly marked in recent years in southern England.

Several introduced species have succeeded in establishing wild populations (not in Scotland) particularly the Signal (*Pacifastacus leniusculus*) and the Narrow Clawed (*Astacus leptodactylus*) Crayfish together with the Noble Crayfish (*Astacus astacus*). It is now illegal to release alien species into the wild without a licence or to allow their escape into the wild.

Since 1986 the native species has also been protected by the Wildlife and Countryside Act 1981, Schedule 5. Our native European crayfish is one of the threatened species mentioned in the recent European Habitats Directive which requires member states to provide and protect areas for their conservation. If this is to be complied with by Britain up to date information of distribution of the species must be obtained and any threats to its survival must be identified. With a view to this the BNHS Fish Recorder received a request from the Ecologist at Bedfordshire County Council for any information held about crayfish in the county. What knowledge the recorder possessed was passed on and it was then suggested that it would now be an appropriate time for the freshwater crayfish to be properly recorded by the Society. This was approved by Council and this, the first report of the Recorder, is presented for the year 1992.

HISTORICAL RECORDS

Information on Crayfish in Bedfordshire is scanty and much is now historical, but such records as exist are best listed chronologically as follows.

18th Century

The first reference to crayfish in the county appears to be that in Lord Torrington's diaries, dated July 12 1793 when, staying at The Sun, Biggleswade he wrote:

"The crayfish at supper were some of the largest I ever saw; the River Ivel is famous for them". (Andrews, 1936)

19th Century

The Ouse and Ivel rivers are referred to in *Rural Sports* by Revd W.B. Daniel (1802) stating "Pike, Perch, fine Eels, Crayfish and common fish in abundance"

The next mention is in Lysons' *Magna Britannica* (1806) which states crayfish are "among the fish of the Ouse". There is further mention of the Ouse in 'Recent Records'.

Following this an extract from the diary of Joseph Ranson of Burnt Mill (Grove Mill) dated July 1816 mentions crayfish as present in the canal there.

20th Century

The next mention of crayfish is in the *Victoria County History of Bedfordshire* which notes that a Mr James Saunders writing from Luton in January 1902 states that "crayfish are abundant in the river Lea south of Luton Hoo" (this location referred to again in 'Recent Records').

A copy of the *Victoria County History* at Bedford Museum has hand-written notes by J.S. Elliott giving additional unpublished information which is now reproduced below:

- 20.5.1902. Very common in Shefford canal and overshoot with old river (J.S.E.)
- 25 October 1914. One taken from eel trap at Blunham and now in collection (J.S.E.)
- 7.11.1914. Sandy fishermen tell me they have seen 3 taken at Sandy at different times from River Ivel.

J.S. Elliott, writing in the *Zoologist* in 1914 states that he had never heard of crayfish in the River Ouse in his own time but that it had been reported to him as “not infrequently found in the river Ivel below Shefford”. He also records taking a crayfish from an eel trap at Blunham Mill on “October 25th last”.

The year 1934, with the publication of the *Natural History of the Hitchin Region* (Palmer, 1934), sees mention of crayfish with the species stated “to be scarce but to occur in the Ivel at Radwell and also more commonly in the Lea” (the most recent record obtained is from the Ivel as mentioned later).

The earliest recollection of crayfish by the present Recorder dates from the 1950s. At this time the native species was present in the Grand Union Canal near to the Leighton Buzzard town road bridge. This certainly appears an unlikely site for a species usually thought to require clean water conditions as the water there is very poor, perhaps more so in the 1950s when commercial barge traffic still existed. Whether the species still occurs at that site is not presently known.

RECENT RECORDS

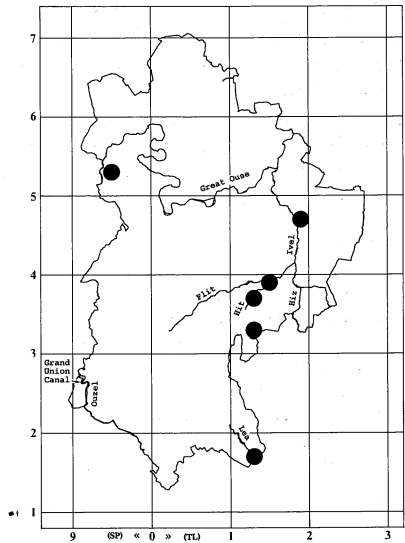
Recent records may be regarded as those established since 1980 and, of these, the first is again from the river Lea south of Luton Hoo. This is a site long associated with crayfish and the species is reported to have still been present as recently as ten years ago until finally eliminated by a discharge of pollution from the sewage works. Only a short stretch of the river south of Luton Hoo is actually in Bedfordshire and it is possible that this colony may have in fact been present at a location downstream, just out of the county.

About the same time it is reported that crayfish were present in a small stream running across private land near Pegsdon and also at a site well upstream on the river Hit near Gravenhurst. It is not presently known if the species still exists, particularly at Pegsdon where recent earthwork upstream has coloured the water and may have resulted in loss of the colony.

It is probable that all the above mentioned recent records were of the native crayfish species.

Next mention of crayfish is made by the NRA who have been maintaining records since 1986. Unfortunately these records do not differentiate between species and only mention the presence of *ASTACIDAE* sp. The only two NRA records relating to Bedfordshire from 1986 to the present are both of 1989, firstly from the Great Ouse at Turvey and secondly from the Flit at Shefford.

The most recent record received by the recorder is for the river Ivel between Biggleswade and Sandy during 1992, believed to be of the native species. Historically the Ivel and the Ouse have both been sites for crayfish as previously mentioned.



Crayfish records 1980-1992

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HARVEY R. WINTER

BIRDS Report of the Recorder

INTRODUCTION

Included with the Bird Report this year is a major review of the County List and the requirements of bird-recording within the County, based on consultations carried out with the County Rarities Panel. This task, last carried out in 1986, is one which has to be undertaken at regular intervals, and it has left relatively little space for other material. However, Paul Oldfield's account of the Red-rumped Swallow at South Mills NR was essential as a first record for the County, whilst as an example of field-work, Peter Almond's excellent study of the Bromham heronry in 1992 (a task he has performed annually since 1988) also merits its place.

With the arrival of the 'Hobby' newsletter, the expanding numbers of observers, and the popularity of bird-lines, the problem of 'lost' or unattributable records continues to grow. After toying with the idea of 'square-bracketing' records for which there are no adequate descriptions or sometimes even observer's names, I have decided to deny such reports even that doubtful legitimisation and consign them to a ghetto of their own at the end of the report. Descriptions for any of the birds listed there will be most welcome, and documented records will be published next year.

With the ever increasing number of records submitted, a further move has been made towards sectionalising the preparation of the Report, and thanks are again due to Dave Kramer for preparing species accounts for the Ducks, to Peter Smith for dealing with the Waders, and to Martin Palmer for again digging his way through the Gulls and Terns. Once this treatment can be extended to other groups and the process ironed out, speedier production of the Bird Report should become possible.

Finally, thanks to all the contributors who have made this report possible. I regret that I have not been able to reply personally to all correspondence, and I apologise profusely if I have inadvertently left anyone out!

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REVIEW OF 1992

For most observers 1992 lacked the spectacular rarities of 1991 but, even so, many unusual species occurred, and in the final year of atlas fieldwork there were notable developments for two of our rarest breeding species. If Yellow-legged Gull is to be considered a separate species, a total of 194 species were recorded in the County in the year.

The year opened with two excellent birds for the County remaining from 1991, the Great Northern Diver at Harrold and the Red-necked Grebe at Brogborough. The diver, which was already in partial summer plumage even at that early date, disappeared as the lake froze up completely between January the 24th and 26th, but the grebe, finding itself on the deeper waters of the clay pits, was able to remain until at least April 26th, by which time it had acquired full summer plumage. Other winter highlights included the now regular white-winged gulls, mainly in clay pit roosts, though an adult Mediterranean Gull was found on fields at Eaton Bray. Elsewhere there were good influxes of Long-eared Owls, with up to twelve at a roost in the south of the County, and an Egyptian Goose moved from Shuttleworth College to South Mills and Blunham. As winter ended, breeding activity began with reports of Goshawks including a pair displaying at a regular site, and, perhaps the best news of the year, the reappearance of Woodlark in the County for the second year running and signs of a pair holding territory.

With spring approaching, March water bird movements included a Red-breasted Merganser briefly at Priory and a Scaup at Battlesden which stayed into May, whilst April and May were to see a good passage of Common Scoter. March also produced a new County Recorder, who underlined his good fortune by finding himself (and many others) a new County bird in the form of three Twite at Willington, the first multi-observer record of this species for many years. At Blows Downs spring passage got under way in March with the first Chiffchaff on the 16th and the first Wheatear on the 17th. These were followed by Black Redstarts together with good numbers of Whinchats, Redstarts and Ring Ouzels (a remarkable maximum of 23 reported on April 24th) and a Pied Flycatcher also on April 24th.

Wader passage was concentrated in the Marston Vale clay pits, with Coronation in particular providing excellent habitat as it was pumped out. An Avocet at this site on April 26th was relocated later that day on the small lakes by the Kempston bypass, and was followed at Coronation by unprecedented numbers of Grey Plovers, with a maximum of 13 on May 17th, and a good Turnstone passage. Rookery also produced a few Grey Plovers, Turnstones and Oystercatchers and had a Sanderling on April 25th and two Little Stints from May 11th to 13th. Coronation replied with a Little Stint on May 22nd and a Knot on May 29th, but the latter was accompanied by one of the wader highlights of the spring for those who were lucky enough to catch up with them, the second of two Temminck's Stints found in the County during the month, the other having been briefly at Rookery on the 19th. These were the first accepted, multi-observer records of the species in the County since 1982. The other spring wader highlights were far removed from the clay pits; two superb Dotterels on a large pea field at Streatley on May 1st. On the same day a Hoopoe was present in a Pertenhall garden, having been first reported the previous day, and a second was seen briefly flying across the road at Bison Hill on May 10th. On a duller note, spring gull and tern movements through the County produced only average numbers of Black Terns and a few Little Terns, but there were fewer Arctic Terns than in most recent years and hardly any Little Gulls. There was an exceptional influx of Hobbies, with particularly large numbers reported at Coronation, but otherwise raptors were less well represented, though scattered May Buzzards hopefully included prospecting breeders. There were two Ospreys, one flying north at South Mills on April 20th and another eating a fish in a tree south of Cardington before soaring off north on May 30th.

Major rarities this spring were less obliging than those of 1991, with South Mills producing a fly-through Little Egret on April 1st (an appropriate date for a bird which remains so elusive in the County?), followed by an almost as brief Red-rumped Swallow on May 19th. At Priory another fly-through was the County's second Caspian Tern, a remarkable coup for the site's stalwart, and a bird which surely must have moved west through the County unobserved on its way from Lackford in Suffolk to Willen in Buckinghamshire, before being seen as it returned to the former site. Sadly, the only rarity to be seen by many observers was a Red-headed Bunting at Stewartby on May 9th and 10th, an excellent male, probably a first summer, but of a species normally presumed to be of doubtful origin.

For many observers, the summer of 1992 meant a final year of Breeding Atlas field work, concentrated mainly in the extreme north of the County. As a result, an influx of Quail was recorded almost as widely in the TL06 ten-kilometre square as in the traditional areas around Luton. Tree Sparrows continued to be thinly recorded, whilst Hawfinch seems to have practically disappeared. Some commoner species also showed worrying declines; there was a race between the County Recorder and the Atlas Co-ordinator to fill in the last atlas records for Dunnock and Song Thrush in adjoining tetrads in TL06—amusing because of the personalities involved, but disturbing because of the difficulty encountered by such experienced observers in finding these once abundant birds. On a brighter note, Nightjars returned to their traditional site and another was recorded in the east of the County, whilst a new pair of Long-eared Owls were found in the south. A number of Barn Owl road casualties were reported, and as a result the traditional Willington site seems to have been lost, but several new pairs were located. Of the County's other rarer breeding species, Hobbies seemed slightly scarcer than normal despite the spring influx, but Ruddy Duck were again present in force at Rookery and Luton Hoo, and feral Barnacle Geese bred again at Rookery (at least they are prettier than Canada Geese). Most remarkable was the breeding of Curlew at Thurlleigh Airfield where birds had summered in the two previous years, the first ever recorded breeding of the species in Bedfordshire. Also promising were displaying pairs of Siskin at a Greensand site, though breeding probably did not occur and would be very difficult to prove.

Autumn passage began on a quieter note than the spring. A summer plumaged Red-necked Grebe was at Dunstable Sewage Works from August 9th to 11th, and, together with the long-staying Brogborough bird, emphasised the breeding potential of the species. Three raptors of note were a male Montagu's Harrier passing through South Mills on July 19th and Marsh Harriers at Coronation on August 8th and at Rookery on September 5th. Coronation also produced a remarkable series of records of Yellow-legged Gull, a species newly split from Herring Gull. The rows of islets in the nearly drained pit attracted large flocks of gulls standing on bare mud, making identification from the bright yellow legs particularly easy. The vast majority of large gulls present in July and August were always Lesser Black-backed but, with up to six present at one time, Yellow-legged Gulls often outnumbered the few Herring Gulls present. This species obviously occurs in the County more regularly and in greater numbers than any of the 'white-winged' gulls and, though the first accepted record was as recently as 1987, it must have been overlooked previously. Also at Coronation were a Knot on July 27th, a Shag on August 15th (also seen at Stewartby), a Spotted Redshank for a week in late August and three Little Stints, with another at Dunstable Sewage Works in early September and a Curlew Sandpiper at South Mills on September 1st. Early autumn passerine migrants were well represented by Whinchats (seven at Blows Downs on August 30th) and Wheatears, but more exciting was the third Hoopoe of the year at Studham Common on July 7th. An unlucky Wryneck was taken by a cat at Eaton Bray, appropriately on September 13th, whilst a sprinkling of Redstarts included one, hopefully an omen for the future of the Marston Vale, in a hedge in the new Berry Farm Wood. The best well-watched birds of the autumn were however both in the clay pits, a Bittern at Rookery on August 29th, followed by a juvenile Pectoral Sandpiper at Coronation from September 11th to 15th. Though the Bittern stayed only one day at Rookery, an observer present the following morning was treated to the amazing spectacle of 68 Bar-tailed Godwits battling southwards into a gale, far and away a Bedfordshire record, as were 123 Black Terns at Stewartby on September 11th.

After this excitement, the late autumn and winter lapsed into relative quiet. A Black-necked Grebe at Brogborough on October 11th was followed by Slavonian Grebes at South Mills (December 2nd), Priory (December 11th to 25th) and Brogborough again on December 20th. The only seabird of note was a Manx Shearwater picked up in Kempston in September and released at Poole, Dorset—this species never seems to find its way onto the County's lakes! Later two White-fronted Geese were at Sandy early in December, whilst a rather early Pink-footed Goose, perhaps of doubtful origin, was in Luton Hoo in late October. The rarest bird of the year's last quarter was a Shorelark seen briefly by one fortunate observer in a quarry near Clophill on October 17th; unfortunately a contrastingly long-staying and much watched Eider at the rather under-visited site of Wyboston, found on November 15th, was still present in August 1993 and must be considered of suspect origin. The Shorelark was a second record for the County (as the Eider would have been), but another once more regular winter visitor showed signs of a return to its former status, with a good influx of Stonechats in late October.

SYSTEMATIC LIST FOR 1992

Nomenclature follows the 'British Birds' list of *Birds of the Western Palearctic* (1984).

The following abbreviations have been used in the text: BIS—Bird Information Service, BBRC—British Birds Rarities Committee, BTO—British Trust for Ornithology, CBC☆—Common Bird Census, CES☆—Constant Effort Site, ChP—Chalk Pit, CIP—Clay Pit, CP—Country Park, GP—Gravel Pit, NR—Nature Reserve, SP—Sand Pit, SW—Sewage Works. Place names for mineral excavations follow those by Nightingale (*Bedf. Nat.* 39 73-74) except for Barkers Lane (TL076493) which is now generally known as Priory CP. The name 'River Meads' has been used for the new area of parkland on the north side of the Ouse opposite Priory CP, on the site of the former Goldington Power Station.

- ☆ Common Bird Census (CBC)—The British Trust for Ornithology's main scheme by which breeding population levels of common birds are monitored in the U.K.
- Constant Effort Sites (CES)—A CES is one of more than 100 sites located throughout the U.K. and Ireland where birds are trapped in a series of mist nets during 12 morning visits spread evenly between May and August. Nets are erected in the same positions on each occasion, and from year to year, thereby allowing the BTO to monitor changes in the breeding success and survival of our common songbirds.

Non-passerines

Great Northern Diver *Gavia immer* The partial summer plumaged individual which arrived at Harrold CP in December 1991 remained until the lake froze completely in late January. It was still present on 24 January but was not seen on 26 January (TS).

Little Grebe *Tachybaptus ruficollis* Pairs bred at East Hyde, Luton Hoo, Houghton Regis ChP, Toddington Manor, Millbrook CIP, Rookery CIP (three pairs), Willington GP and South Mills NR (two pairs), and the species was also recorded in the breeding season at Chimney Corner CIP, Brogborough Lake and Coronation CIP. Also recorded in winter at Priory CP, Stewartby CP and Battlesden Lake with the highest counts 12 at Rookery North CIP on 12 September and 14 at Brogborough Lake on 20 January and again on 14 November.

Great Crested Grebe *Podiceps cristatus* Bred at Luton Hoo (four pairs), Houghton Regis ChP (two pairs), Grovebury Farm SP, Battlesden Lake, Brogborough Lake, Millbrook CIP (two pairs), Rookery CIP (two pairs), Coronation CIP (two pairs), Chimney Corner CIP, Bromham NR, Priory CP, River Meads, Willington GP, South Mills NR, Harrold CP (four pairs) and Melchbourne Park. In winter lower numbers than usual at Stewartby CP with 25 on 2 January the maximum recorded, and elsewhere maxima of 24 at Harrold CP (January), 22 at Brogborough Lake (April) and 17 at Grovebury Farm SP (August). Monthly maxima at Priory CP and Luton Hoo are tabulated below.

Monthly maxima of Great Crested Grebe at selected sites:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Priory CP	27	23	38	28	11	11	14	16	23	35	47	51
Luton Hoo	8	13	24	11	—	13	14	—	17	25	—	25

Red-necked Grebe *P. grisegena* The over-wintering individual present at Brogborough Lake from 1991 remained until at least 26 April (MJP), and was reported to BIS on 27 April. By the end of its stay it had acquired full summer plumage. Another present at Dunstable SW from 9 to 11 August was well described and was also in summer plumage (PT *et al.*). These records of summer plumaged birds should alert observers to the possibility of breeding, which has already occurred in a neighbouring county.

Slavonian Grebe *P. auritus* There were three records, all in the second winter period. One at South Mills NR on 2 December was the first at that site (PO). An immature at Priory CP from 11 to 26 December (DK, MJP *et al.*) had possibly been present since 5 December. Finally, an adult was at Brogborough Lake on 20 December (MG, RAN).



Red-necked Grebe, Brogborough Lake 20.4.1992

(Photo: L. Carman)

Black-necked Grebe *P. nigricollis* One at Brogborough Lake on 11 October was the only record of the year (DJO).

Manx Shearwater *Puffinus puffinus* One was found in distress at Kempston on 8 September and was taken to the Animal Rescue Centre. It was released at Poole Harbour, Dorset on 10 September. (Jack Stevens, per PT). A typical record for a species which normally occurs following severe winds, and is more often found under cars than flying around lakes! Happily, most individuals reported in recent years have been rescued and released on the coast.

Cormorant *Phalacrocorax carbo* Recorded widely in the Marston Vale clay pits and Ouse and Ivel valleys, and also at Luton Hoo, Grovebury Farm SP, Houghton Regis ChP, Woburn Park, Dunstable SW, and small numbers over well watched sites at Wavendon Heath, Whipsnade Zoo and Blows Downs. Numbers at the Brogborough roost were lower than in recent years; monthly maxima for the site (not necessarily roosts) are tabulated below. There was also a regular roost at Harrold CP (normally up to 12 birds, with 30 at the site on 27 December), and other high counts were 32 north over South Mills NR on 10 January (the highest ever count for the site), and 52 at Priory CP on 23 December. Several white-headed 'sinensis' type individuals were reported in spring, and a colour-ringed juvenile ringed as a nestling at Grune Point in Cumbria during June or July 1992 was present at Grovebury Farm SP from 4 October to at least 27 December.

Monthly maxima of Cormorant at Brogborough Lake:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
45	26	18	7	3	-	-	1	5	33	35	58

Shag *P. aristotelis* The only record was of an immature at Coronation ClP on the very early date of 15 August (DHB), moving to Stewartby CP on 17 August (DJO).

Bittern *Botaurus stellaris* One briefly at Rookery CIP on 29 August was well seen by many observers (T Plosjowski, MJP *et al.*), but another in Houghton Regis ChP from probably at least 10 December into 1993 was extremely elusive and initially gave only poor views (NRF, DM).

Little Egret *Egretta garzetta* One flying north at South Mills NR on 1 April unfortunately declined to stop off in the County, though surely long stayers will occur in the near future (PO).

Grey Heron *Ardea cinerea* Heronries were located at Southill Lake (14 occupied nests), Bromham Hall (11 nests raised young) and Luton Hoo (at least eight nests, with nine juveniles on 28 May). A detailed study of the Bromham Hall Heronry by Peter Almond is included elsewhere in the Journal. Notable post-breeding flocks were at Grovebury Farm SP (16 on 28 June) and Dunstable SW (12 on 14 September). Inevitably at least one was reported from Blows Downs, with a bird raiding urban gardens seen dropping into Evelyn Road, Dunstable on 29 March.

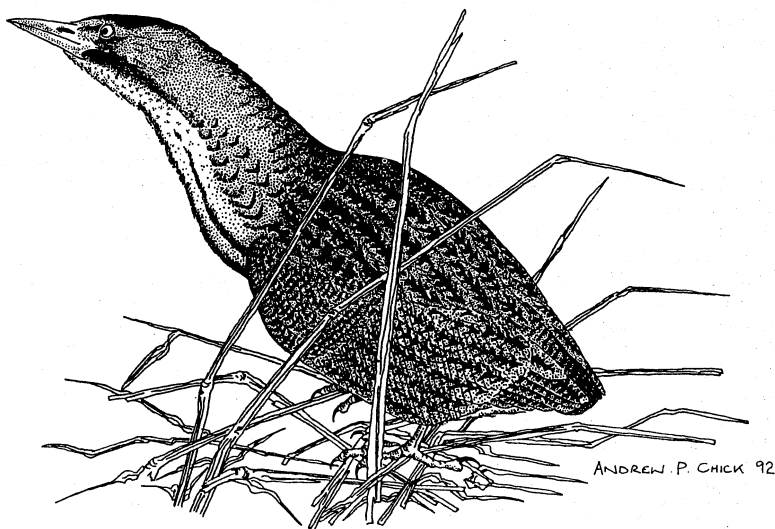
Mute Swan *Cygnus olor* Breeding was recorded at Battlesden Lake, Steppingley Reservoir, Brogborough Lake, Rookery CIP, Millbrook CIP, Stewartby CP, Chimney Corner CIP, Coronation CIP (2 pairs), Willington GP, South Mills NR, Bromham (2 pairs), Felmersham NR, Harrold CP (2 pairs), River Meads and elsewhere in the Priory CP area where three more pairs bred. Doubtless other pairs bred along stretches of river unvisited by observers. In winter, concentrations were recorded near Radwell GP/Bletsoe (maximum 75 on 27 February) and on the Ouse in Bedford (maxima of 69 on 24 February and 66 on 6 March—either side of the Radwell count, so presumably different birds). As in previous years large numbers of non- or post-breeders summered at Stewartby CP where there were a maximum of 81 on 14 June. Finally, 67 on the Ouse in Bedford on 6 December and 85 on 29 December.

Pink-footed Goose *Anser brachyrhynchus* One at Luton Hoo on 18 October, East Hyde on 23 October and Luton Hoo again from 2 to 6 November was somewhat early and should perhaps be considered as of unknown origin. Most records are in January and February and most of these probably relate to wild birds.

White-fronted Goose *A. albifrons* Records from the Roxton GP/Tempsford/Sandy area from 3 January to 17 February possibly related to the same birds and involved a maximum of two adults and a 1st winter—the adults may have been the two birds present at Blunham on 29 December 1991. Two were at Roxton GP on 3 January (RIB) and were reported to BIS at Tempsford 5 January; they were accompanied by a 1st winter at Roxton Weir on 11 January (GDP) and the 1st winter was still present on 9 February (RDM), whilst an adult and a 1st winter were at Sandy GP on 12 and 17 February (GDP). Two adults were at Sandy GP on 12 and 13 December (GDP, MJP *et al.*) and one was reported still present on 28 and 29 December.

Greylag Goose *A. anser* Two pairs bred at Millbrook CIP and three on the Ivel at Blunham, but no counts were received from the main breeding sites at Harrold CP and Radwell GP, or Roxton GP, apart from a report of large numbers of goslings at Radwell GP on 7 May. Highest winter count was 147 at Harrold on 4 January, whilst 72 at Southill Lake on 15 November and a maximum of c. 60 at Melchbourne Park were notable for the sites.

Canada Goose *Branta canadensis* Widely recorded in large numbers. Breeding was noted at most clay pits in the Marston Vale and at many other sites, and the largest numbers of young reported were 50 goslings at Luton Hoo on 4 June and 21 goslings at Brogborough Lake on 7 June. Largest post-breeding flocks recorded were 535 at Coronation CIP on 17 August and 417 at Rookery CIP on 5 September. During September some organised attempts to cull this species were made by farmers in the Marston Vale. These seemed to prove ineffective as the birds rapidly moved elsewhere, as shown by a flock of c. 200 at Dunstable SW on 13 September (some of which were obviously injured) 114 at Priory CP on 28 September and large numbers at Luton Hoo in September and October with 350 on 18 September increasing to 531 by 18 October. By December 174 were back at Stewartby CP. During August and September a few individuals which were apparently hybrids with Greylag Goose were noted at Rookery CIP and Coronation CIP. These show a much heavier, dumper structure than normal Canada Geese, with a thicker neck, diffuse face patch and greyer plumage tones, and some observers have coined the colloquialism 'Granada Geese' to refer to them.



Bittern

(A.P. Chick)

Barnacle Goose *B. leucopsis* A small party of feral birds, presumably including locally bred birds from previous seasons, were present in the Marston Vale all year, normally in the Stewartby/Rookery area. Peak counts were 11 in January and again in November/December and of these eight were noted forming four pairs at Rookery during May, with another paired with a Canada Goose. At least two birds were apparently on nests during May but no young were reported. Seven at Woburn on 14 March may have been from the Marston Vale, whilst elsewhere an odd individual, also presumably of feral origin, was noted at Luton Hoo from February into April.

Egyptian Goose *Alopochen aegyptiacus* One wandered the east of the County early in the year, being found at the Shuttleworth Park Lakes at Old Warden on 30 January (GRG, MJP) and remaining there until 2 February. It was relocated at Sandy GP on 16 February (GDP) before being seen at Blunham GP on 12 March (TR) and finally at South Mills NR on 16 and 20 March (PO). Presumably another was reported over Blows Downs on 30 April, though full details were not received (TD). One must question whether birds of this species are not local escapes rather than wanderers from the feral population in Norfolk, but as that population may be expanding, their occurrence in the County should be monitored.

Shelduck *Tadorna tadorna* After winter individuals at Brogborough Lake on 11 and 20 January, widely recorded between March and May at Houghton Regis ChP, Dunstable SW, Brogborough Lake, Brogborough No 2 CIP, Rookery CIP, Stewartby CP, Vicarage Farm CIP, Coronation CIP, Priory CP, Willington GP and South Mills NR, where there was also a male on 13 June. A pair and an odd male arrived at Grovebury Farm SP on 22 March, and subsequently one pair bred there, hatching ten ducklings of which five reached flying age, whilst another pair were present throughout the breeding season but did not breed. One young remained at Grovebury Farm SP until 4 October, and was accompanied by an adult from 31 August to 20 September. Elsewhere there were fewer autumn than spring records, with juveniles at Brogborough Lake and Bromham NR on 30 August, another at Brogborough Lake on 12 September, four at Houghton Regis ChP on 26 September and singles at Brogborough Lake on 1 November and Priory CP 20 November, with six at the latter site on 31 December.

Mandarin *Aix galericulata* One pair bred at Luton Hoo producing three young in June (AJL). A pair bred near Harlington Mill Pond and had produced five young by 31 July (R&BB). A pair visited a possible nest site near Northill. Small numbers (one-five) recorded during the first winter period from Brogborough Lake, Eversholt Lake, Luton Hoo, Mill Road Pond Ridgmont, River Ouse Bedford, Priory CP, Roxton Weir, Stockgrove Park (six on 5 January, six on 13 January and seven on 15 February) and Woburn. Woburn Lake was the main stronghold during the second winter period with three on 12 September increasing to 44 on 18 October, 27 on 21 November and 10 on 12 and 28 December (BJN). Maximum of five at Luton Hoo on 13 December. Also recorded from Shuttleworth College Lake and Eversholt Lake.

Wigeon *Anas penelope* Maxima of 55 at Harrold CP, 100 at Snelson Cobbs, 205 at Millbrook CIP, 104 at Priory CP and 50+ at Woburn Lake in January and 234 at Millbrook CIP in March. An adult female was present at Priory CP on 22 July. During the second winter period the only large flock was 156 at Harrold CP in November.

Gadwall *A. strepera* Breeding took place at Dunstable SW (one-two pairs), Luton Hoo (one pair raised four young), East Hyde (one pair raised eight young) and South Mills NR (one pair). Also recorded during May and June from the Coronation/Stewartby/Rookery area but no evidence of breeding reported. Recorded from all major waters. Luton Hoo and Dunstable SW were the main sites with monthly maxima as follows:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Luton Hoo	40	51	55	28	c.15	24	14	26	70	40	25	42
Dunstable SW	39	17	10	10	14	10	-	27	-	16	20	20

Other large numbers recorded were 20+ at Woburn Lake on 6 January, 23 on 7 January and 18 on 16 February, 17 at Priory CP on 18 January, 20 at East Hyde on 25 January and 18 on 1 April, 17 at Woburn Lake on 21 November, 14 at Stewartby CP on 6 December, 13 at East Hyde on 7 December and 14 on 19th.

Teal *A. crecca* Two pairs bred successfully at South Mills NR (PO). Recorded at most waters in the County, mainly in small numbers (less than 20). Larger flocks were recorded in the first winter period with maxima as follows: 33 on 12 January at South Mills NR, at Priory CP 62 on 19 January and 75 on 6 February. At Luton Hoo 52 on 28th and c.45 on 29 January. At Coronation CIP c.50 on 8 January, 153 on 25 January and 53 on 28 March. During the second winter period the largest numbers were recorded at Coronation CIP with 63 on 12 September, 44 on 21 October, 201 on 14 November and 106 on 19 December. At Woburn Lake 34 on 12 December with 27 on the following day.

Mallard *A. platyrhynchos* Recorded at all major waters. Probably a common breeding bird but reports of breeding were received from only a few sites. It was noted as a common breeding species at Luton Hoo. Bred at Brogborough Lake, East Hyde (1 pair), Leagrave Marsh (1 pair), Priory CP (10 pairs), South Mills NR (2 pairs) and Stewartby CP. Maxima recorded in the first winter period were c.100 at Luton Hoo, 65 at Grovebury Farm SP, c.100 at Priory CP and 200 at Harrold CP in January and 170 at Eversholt Lake on 9 February. During the second winter period 96+ at Coronation CIP on 28 July, 150 at Grovebury Farm SP on 6 September, 233 at Southill Lake on 13 September, 79 at Luton Hoo on 18 October, 115 at Felmersham NR on 12 December, 140 at Wyboston Lake on 13 December, and finally 200+ on the Ouse in Bedford and about 100 more at Priory CP on 29 December.

Pintail *A. acuta* In the first winter period one female over Dunstable SW on 1 January, a male at Coronation CIP on 5 January, and a female at Coronation CIP on 23 January, followed by a male at East Hyde from 14-19 February and a male at Houghton Regis ChP on 16 February. There were two males and a female at Rookery CIP on 30 March, and records of a pair at Stewartby CP on the same day, a pair at Rookery CIP on 2 April and again at that site on 8 April may have related to two of the same birds. Finally during spring a pair at Coronation CIP on 9 May. Records during the second winter period were fewer. A female circled over Priory CP on 10 October and a pair flew SW over Priory CP on 12 October. On 5 December eight (four males and four females) were at Brogborough Lake.

Garganey *A. querquedula* In spring, two males were reported to BIS at Rookery CIP on 29 March, and there was a male at that site on 1 April (PJR), followed by a pair at South Mills NR on 20 and 23 April (PO) and a male at Coronation CIP on 26 May (RED, DJO, JDS, JBT). In autumn one at Coronation CIP on 21 August (RIB, RED), followed by one reported to BIS at Rookery CIP on 11 September and one at Coronation CIP on 11-12 September (KO, MJP, JDS), almost certainly referring to the same bird. This species now requires a full description in view of its increased rarity in the County but, in line with its previous status, some records for 1992 have been published without such a description. This will not occur in future.

Shoveler *A. clypeata* Recorded in small numbers from all main waters. Three newly fledged immature birds at South Mills NR on 26 July suggested local origin. In the first winter period, maxima recorded were 22 at Dunstable SW on 1 January and 18 on 8 February, 17 at Woburn Lake on 8 January, 15 at South Mills NR on 2 February, 28 at Rookery CIP on 11 March and 13 there on 15 March. During the second winter period, 12 at Grovebury Farm SP on 6 September, 15 on 12 September at Coronation CIP, 22 at South Mills NR on 26 October and 17 on 1 November, 14 at Grovebury Farm SP on 15 November and 22 on 22 November, 16 at Southill Lake on 13 December and 42 at Willington GP on 28 December.

Red-crested Pochard *Netta rufina* A pair at Harrold CP on 3 and 6 January (TD, RDM, DT). An interesting bird thought to be a hybrid Red-crested Pochard/Mallard was present at Coronation CIP from 23-28 August (DHB, MJP).

Pochard *Aythya ferina* Though birds were present at Coronation CIP and Rookery CIP during May and June, no evidence of breeding was reported. Recorded at most waters in the County during the winter months. During the first winter period maxima recorded were 99 at Chimney Corner CIP, 31 at Coronation CIP, 21 at Dunstable SW, 64 at Luton Hoo, 225 at Priory CP and 46 at Radwell GP. Moulting movements involved 12 at Coronation on 28 July and 20 there on 30th. Ten June/July records at Priory CP. Second winter period maxima were 43 at Chimney Corner CIP, 49 at Elstow CP, 27 at Dunstable SW, 46 at Grovebury SP, 30+ at Harrold CP and 125 at Priory CP.

Maximum monthly counts of Pochard at Priory CP:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
135	225	197	-	-	10	9	8	9	20	73	125

Tufted Duck *A. fuligula* Breeding was noted from Brogborough Lake (2 pairs); Coronation CIP (1 pair); Dunstable SW (3 pairs), Summerfield Fruit Farm Lakes Haynes (1 pair), East Hyde (1 pair), Luton Hoo (7 pairs), South Mills NR (3-4 pairs), Stewartby CP (2 pairs) and Willington GP (1 pair). During the first winter period maxima of 300+ were recorded at Brogborough Lake on 2 January, 40 at Elstow CIP, 80 at Stewartby CP and 60 at Priory CP. A moulting gathering established at Coronation CIP with 70 on 12 July decreasing to 42 on 28th. During the second winter period maxima of 74 were recorded at Elstow CIP in September, 124 at Brogborough Lake in November, 60 at Priory CP in December and 67 at Woburn Lake in December.

Scaup *A. marila* An adult female was present at Battlesden Lake from 15 March to 3 May (PSm *et al.*) and an adult female was at Dunstable SW on 1 August (PT).

Common Scoter *Melanitta nigra* In spring seven males at Brogborough Lake on 20 April (RED, GDP, PT), whilst another seven (four males and three females) at Stewartby CP on 14 May (DJO) also visited Brogborough Lake on the same day (RED). One female at Willington GP on 28 May (DHB), a pair at Priory CP on 29 May (DHB, DK), one at Grovebury SP on 30 May (PSm, PT) and seven (three males and four females) at Stewartby CP on 11 June (RED, TD). In the second winter period one was reported to BIS at Coronation CIP on 5 November and six flew over Stewartby CP on 8 November (DJO, JDS).

Goldeneye *Bucephala clangula* Brogborough Lake was the main wintering area with monthly maxima as follows:

Jan	Feb	Mar	Apr	May	Oct	Nov	Dec
50	45	35	6	1	-	11	10

Counts of 50 at Brogborough Lake on 8 and 29 January were the largest gatherings ever recorded in the County. A female at Brogborough Lake on 4 May was the last of the first

winter period. Smaller numbers were also recorded at Battlesden Lake, Blunham GP, Harrold CP, Priory CP, Radwell GP, Rookery CIP and South Mills NR. The first of the second winter period was recorded at Priory CP on 10 October followed by records from Brogborough Lake, Rookery CIP, Harrold CP, Bromham NR, East Hyde, Priory CP, Southill Lake, South Mills NR, Stewartby CP, Woburn Lake and Wyboston GP.

Red-breasted Merganser *Mergerus serrator* An immature male was present on the Ouse between Priory CP and Cardington Mill on 7 March (EN).

Goosander *M. merganser* Widespread during both winter periods being recorded from Blunham GP, East Hyde, Eversholt Lake, Harrold CP (15 on 2 February), Luton Hoo (up to nine in March), Priory CP, Radwell GP (eight on 5 January, 21 on 8 January), Rookery CIP, South Mills NR, Woburn Lake (17 on 8 January, nine on 7 and 18 January and 16 February). Five flew west over Thurlough on 17 March. One at Luton Hoo on 8 April was the latest. The first of the second winter period were 12 at Brogborough Lake on 17 October. Others were recorded from East Hyde, Felmersham NR, Grovebury Farm SP, Harrold CP, Luton Hoo (seven on 13 December), Priory CP (nine on 8 November), Radwell GP, South Mills NR and Woburn Lake (eight on 8 November).

Ruddy Duck *Oxyura jamaicensis* A pair at Brogborough Lake produced two young, the first breeding record for this site. Two pairs bred at Rookery CIP producing five and three young. Small numbers (one-six) recorded from Brogborough Lake, Coronation CIP, Harrold CP, Luton Hoo, Priory CP, Rookery CIP, Stewartby CP and Vicarage Farm CIP. Maxima of 10 at Brogborough Lake in January, 16 at Rookery CIP on 22 March and nine at Luton Hoo in March and July.

Marsh Harrier *Circus aeruginosus* Two autumn records of juveniles, at Coronation CIP on 8 August (MJS), and at Rookery CIP on 5 September (KO), were both typical fly over sightings.

Hen Harrier *C. cyaneus* The only record was an adult male at South Mills NR on 20 January (PO).

Montagu's Harrier *C. pygargus* The only record was an adult male at South Mills NR on 19 July (PO).

Goshawk *Accipiter gentilis* Many observers recorded a pair displaying at a regular site between February and May. Also reported from five other sites. The status of this species in the County remains somewhat confused, due both to an understandable desire for confidentiality on the part of observers and the ever-present risk of confusion with Sparrowhawk. No full descriptions were received for circulation, and its occurrence away from the main site cannot be considered fully proven.

Sparrowhawk *A. nisus* The number of record cards submitted for this species was perhaps the highest of any this year and to detail sites or numbers would require far too much space. It seems to have practically completed its recovery from the population crash of the 1960s and can now be considered regular, even common (for a raptor) throughout the County (for example, 145 bird-days at South Mills NR and 120 bird-days at Priory CP). It probably now equals or even exceeds the much more visible Kestrel in numbers. At Dunstable SW, prey species recorded included Linnet, Starling, Pied and Yellow Wagtails, Goldfinch and House Sparrow.

Buzzard *Buteo buteo* Recorded as follows: Old Warden/Southill area, three in January (per BJN) and singles 16 August (DJO), 12 September (DHB) and 14 September (MJP), Dungee Wood, two 13 January (TS), Aspley Heath flying to Charle Wood 15 February (DHB), Steppingley 15 February (MP, presumably the same bird as at Charle Wood), Odell Plantation 19 March (TS), Shuttleworth 20 March (GRG), Wavendon Heath 5 April (DHR), Millbrook 16 April (KO), Maulden Wood 6 May (DHB), Coronation CIP 10 May (RDM, PT), Whipsnade Zoo, 6 June and two 29 June (AR, CT), Pegsdon Hills 17 June (TD *et al.*), Park Wood 28 June (RDM), Great Catsey Wood 8 September (TS), Lower Gravenhurst 15 September (MJS), Luton Hoo 29 September (BRS), Turvey 22 October (JM) and Chaul End 6 November (PJR). A remarkable series of records including an encouraging number in May and June, but sadly a first year bird was found shot at Studham on 15 October (per DA).

Osprey *Pandion haliaetus* Two in spring, one north over South Mills NR at 10.30 on 20 April (PO) and another eating a fish in a tree south of Cardington for forty minutes before soaring off north at 11.54 on 30 May (DHB, DJO).

Kestrel *Falco tinnunculus* Far fewer records were received than for Sparrowhawk, probably due to observers' differing perception of their relative rarity, though possibly there has been a slight long-term decline in Kestrel numbers.

Red-footed Falcon *F. vespertinus* After the national influx of this species, one Bedfordshire record remains under consideration by the BBRC, at Thurlleigh Airfield on 13 June. If accepted this will be the first record of the species in the County.

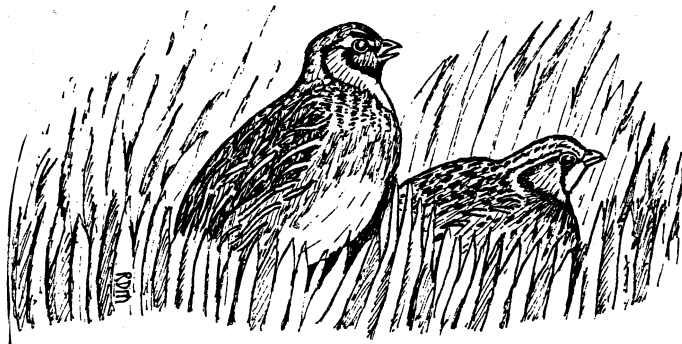
Merlin *F. columbarius* This species presents one of the greatest problems for the County Rarity Panel. Due to the normal behaviour of the species, most records are very brief views of flying birds, often without all identification characters being well seen. Despite national decline, numbers of claimed records in the County have increased in recent years, and it is difficult to be sure whether this is due to increasing numbers and competence of observers, or increasing opportunities for confusion with Sparrowhawks! Under these circumstances, records cannot be accepted without full notes of the sighting, and even with such descriptions, it must be acknowledged that there may be a tendency to more readily accept records from more experienced and better known observers. It is no disgrace to have a Merlin record rejected, the current County Recorder's first in the County was! Of eight full descriptions seen by the County Rarity Panel, only two have been accepted, a female or immature seen twice near Streatley on 24 October (MJS), and a male near Brogborough Lake on 23 November (RAN), which helpfully gave perched views. Other records of this species have been pending awaiting clarification and will probably eventually be published.

Hobby *F. subbuteo* After the first on 28 April at Brogborough Lake, there was a notable spring influx, with up to ten at Coronation CIP on 17 May, and twos or threes at several other sites. The last were at Priory CP and Biggleswade on 1 October. Despite the spring influx, there seemed to be fewer breeding pairs than usual, possibly due to cold wet weather in early summer. Records probably or possibly relating to breeding pairs were received from eight sites as follows:

- | | |
|------------|--|
| Site 1: | Breeding proved during atlas work. |
| Site 2: | Seen regularly July/August, twice carrying food, no nest located. |
| Site 3: | Seen on 11 dates July/September, three together on 25 August, adult and juvenile on 17 September, no nest located. |
| Site 4: | Four separate sightings on 14 July during atlas work, one carrying food, no nest located. |
| Site 5: | Birds recorded throughout to 15 July, three together on 28 June, no nest located. |
| Site 6: | Hunting birds seen 20 May to 26 September, three together on 28 July and two on 24 August, no nest located. |
| Sites 7-8: | Birds recorded in atlas work in three adjacent tetrads during breeding season but no nest located. |

Red-legged Partridge *Alectoris rufa* Records were received from 19 localities, though under-recorded, and more numerous and widespread than Grey Partridge. Most birds seen at South Mills NR through the year showed some Chukar characters, as did many of a party of 14 at Brogborough Lake on 2 January, and it would be interesting to have some detailed studies of populations and degrees of Chukar admixture.

Grey Partridge *Perdix perdix* Records were received from 27 localities, with proportionally more reports from sites on the Chalk downland than from other areas of the County. The highest count was 87 (in coveys of 12 to 15 birds) between Warden/Galley Hills and Butterfield Green on 29 December, though about 20 of these may have been over the Hertfordshire border. Coveys of about fifteen also reported from Duristable SW, Barton Hill Farm and Upper Caldecote. It was noted that numbers at South Mills NR have been stable over the last few years.



Quail

(R. Moore)

Quail *Coturnix coturnix* Another good 'Quail year', with records of calling males in the south of the County from Eaton Bray (1 August only), Totternhoe Knolls (two on 28 June and one on 1 August), Galley Hill (up to three from 11 June to 15 July) and Barton Hills (two, 21 June to 29 July). Also widespread further north, with some being located in the final year of atlas work, particularly in the TL06 ten kilometre square. Calling males at Cotton End (21 June only), Biddenham (22 July only), Begwary (28 June only), Knotting Hill (5 June only), Keysoe Row (10 June to 28 July), Upper Shelton (11 to 14 June) and a silent bird accidentally flushed elsewhere in Shelton on 9 June. Thirteen were first recorded between 5 and 28 June and two more between 22 July and 1 August, the latter at sites where they would probably have been detected if present earlier. Such late arrivals are typical, and these may be birds which have bred earlier in Southern Europe and moved north to breed again, or even juveniles attempting to breed in their first year, as this species can reach sexual maturity in the summer of hatching. Observers are reminded that this is a Schedule I species and that the use of taped calls to disturb breeding birds is illegal.

Pheasant *Phasianus colchicus* Remains widespread and numerous with, for example, up to 400 breeding females on the Southill Estate (per keeper).

Lady Amherst's Pheasant *Chrysolophus amherstiae* The Bird Club hopes to organise a detailed survey of breeding distribution, numbers and habitat requirements for this species. Breeding season records were received from Luton Hoo (where numbers were thought to have decreased), Charle Wood (at least five calling males), Flitwick Plantation, Kingshoe Wood, Breakheart Hill (at least three calling males), Maulden Woods (at least eight calling males), Chicksands Wood (a maximum of four calling males) and Home Wood Northill. The latter site is the most easterly at which this enigmatic and elusive bird has ever been recorded in the County.

Water Rail *Rallus aquaticus* In the first winter period recorded at East Hyde, Houghton Regis ChP (maximum three on 23 January), Southill Lake, Turvey Abbey Park, Priory CP (maximum two on 17 February), South Mills NR and Harrold CP. At Flitwick Moor it was recorded in every month, and this probably remains the only breeding site in the County, though presumed wintering birds remained at Priory CP until 20 April and Houghton Regis ChP until 25 April, and one was at Rookery CIP on 20 May. In the second winter period recorded at Houghton Regis ChP, with one as early as 7 July, Priory CP (where there were three on 3 October, the earliest ever return date for the site), South Mills NR (from 7 November with two on the 18th), and Wyboston GP.

Corncrake *Crex crex* Sadly, the first in the County for several years was found dead near Wyboston in late October, having apparently flown into wires. The corpse was supplied to the RSPB for analysis. It was in good condition and had large fat deposits, so could well have been departing after a migration stop-over in or near the County.

Moorhen *Gallinula chloropus* Six pairs bred at South Mills NR, but counts at Luton Hoo of 75 on 28 January and 100 on 4 December were excellent for this species, which now seldom occurs in such large concentrations.

Coot *Fulica atra* Monthly counts of wintering birds at selected sites are listed below, and maxima at other sites were 151 at Coronation CIP on 12 January, 100 at Luton Hoo on 4 December and 130 at Harrold CP on 27 December. Breeding was under-recorded with reports only from East Hyde, Coronation CIP and South Mills NR.

Monthly maxima of Coot at selected sites:

	Jan	Feb	Mar	Sep	Oct	Nov	Dec
Stewartby CP	118	51	75	84	95	93	57
Chimney Corner CIP	229	112	56	85	112	118	133
Millbrook CIP	140	72	38	82	79	85	54
Elstow CIP	53	—	51	45	72	73	64
Woburn Lakes	106	—	91	112	102	114	—

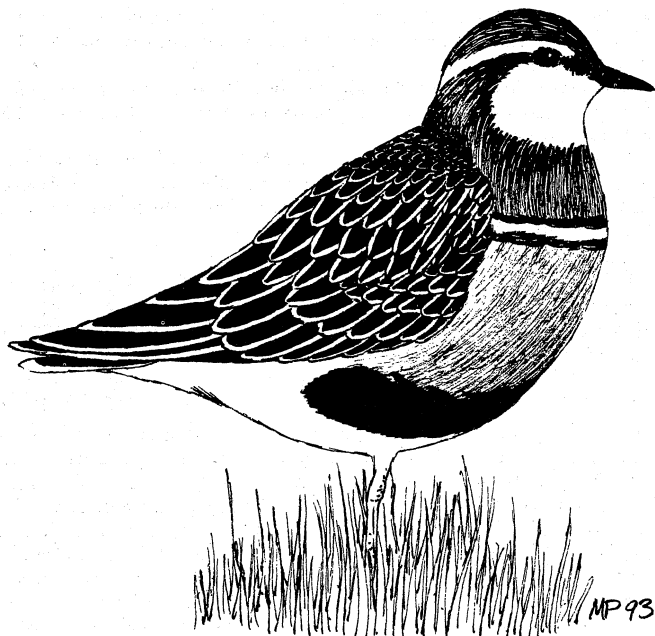
Oystercatcher *Haematopus ostralegus* Recorded on 16 dates involving a possible maximum of 30 different individuals, and recorded in every month except January, February and November. In contrast to last year birds were recorded on five dates in December. The earliest records were of singles at Priory CP and Coronation CIP 15 March and the latest of a single bird at Priory CP 29 December. There was a group of three birds at Coronation CIP on 15 May, three at Rookery CIP 20 September and an impressive count of five at Brogborough Lake 12 December with four at the same locality 28 December (presumably part of the same flock). Groups of two birds were recorded at Rookery CIP on 10 and 17 May and also at Coronation CIP on the latter date, and at Dunstable SW and Houghton Regis ChP, both on 9 August. All other records were of single birds.

Avocet *Recurvirostra avosetta* A single bird was found at Coronation CIP at 16.50 on 26 April. (PSm, MJP, RED *et al.*). Having left the former locality the bird was re-found later in the day on a lake adjacent to the Kempston Southern Bypass (GDP).

Little Ringed Plover *Charadrius dubius* The spring passage was widespread but slightly later than usual. The earliest arrivals were single birds at Houghton Regis ChP and South Mills NR on 27 March and the latest departure was of a juvenile at Dunstable SW 10 September. The largest concentrations of birds were of six at Willington GP 15 April, five at Willington GP 3 May and eight Coronation CIP 13 May. Pairs attempted to breed near ponds on Manor Farm, Lower Caldicote and at Dunstable SW. Successful breeding took place at Willington GP (two pairs produced at least five young of which at least two fledged), and Grovebury Farm SP (two pairs produced three fledged young). It is also probable that breeding took place in the Marston Vale Clay Pits, with at least four pairs displaying at Coronation CIP on 17 May, but no proven records were submitted.

Ringed Plover *C. hiaticula* Recorded throughout the County's wetlands from 9 February to 14 September. The high counts were 13 at Stewartby Lake on 2 March, 12 Stewartby Lake 14 March, 12 Stewartby Lake/Rookery CIP 3/4 April and 19 Coronation CIP 27 July. The only proved breeding was at South Mills NR where two pairs produced a total of eight pulli of which five were ringed but unfortunately there was a 75% mortality rate, resulting in only two fully fledged birds surviving. A pair with three well grown chicks was present at Rookery CIP and there was also suspected breeding at Coronation CIP. The pair at Grovebury Farm SP were unsuccessful.

Dotterel *C. morinellus* Two birds were found on 1 May in a pea field south of Barton Hill Farm Road, Streatley (MJS, also seen by PT, AJL, MDR *et al.*). The record has been accepted by the County Rarities Panel.



Dotterel

(M. Pocock)

Golden Plover *Pluvialis apricaria* Notable flocks in the first winter period were 100 Grovebury Farm SP 5 January, 500 over Priory CP 22 January, 650 Cranfield Airfield 24 February, and a fantastic 3,000 on Thurleigh Airfield 15 March with a further 1,000 at the same locality 28 March, 340 East Hyde 26 March, c. 490 Warden Hill 11 April and 135 Shillington 26 April. There was a remarkable record of a bird in winter plumage at Begwary on 14/16 June. The second winter period started with four at Coronation CIP 1 August and the largest flocks were 400 Radwell GP 10 November and at Elstow 19 December.

Grey Plover *P. squatarola* An amazing spring passage with the first bird at Priory CP 28 March (DK, EN) and a further three at Henlow Camp 31 March (AP). The main passage took place during May and June at Coronation CIP where the species was recorded on 13 dates, beginning with four on 13 May and peaking with a record County number of 13 birds on the 17th (DJO *et al.*), a further 12 on the 23rd (MJS, JB), and the last bird being seen at the locality on 7 June. Elsewhere during that period, the only records were three at Rookery 18 May, two NE over Priory 24 May and singles (different birds) at Willington GP on 24 and 25 May. The only return passage record was of a single bird at Priory CP 26 July.

Lapwing *Vanellus vanellus* Breeding noted at suitable localities throughout the County. Notable wintering flocks outside the breeding season were 2,000 Cranfield Airfield 8 January, 1,000 Eaton Bray 7 January, 300 East Hyde 19 January, 2,500 Cranfield Airfield 19 February, 1,600 Rookery CIP 12 July, a remarkable 10,000 Rookery CIP 14 August, 1,500 Grovebury Farm SP 16 August, 700 near Galley Hill 17 October and on the same day 2,000 over Cranfield, 1,500 Grovebury Farm SP 8 November, 1,600 flying south over Priory CP 28 November, 940 Elstow CIP 19 December and on the same day 750 Coronation CIP.

- Knot** *Calidris canutus* Only two records of this rare County wader. A partially moulted individual was found at Coronation CIP 29 May (KO, MJP *et al.*). A second full summer plumaged bird was found at the same locality on 27 July which stayed until the 28th (DHB, RED, JBT *et al.*).
- Sanderling** *C. alba* Only two records for the year. The first was of a single bird at Rookery CIP 25 April (KO, RED) and the second was of a non-breeding plumaged bird at Coronation CIP 12 May (CET).
- Little Stint** *C. minuta* An excellent year for this delightful small wader. The first spring passage record was of two at Coronation CIP 11 to 13 May (RD, KO, MJP *et al.*). A single bird was reported from Coronation CIP 22 May (RED, DJO) followed by another at the same locality on the 27th. The return passage started with a single bird at Coronation CIP 31 August (RED, PN RAN), followed by a single juvenile at Dunstable SW 3/4 September (RD, TD, MP, PT), then two juveniles at Coronation CIP 12 September (PA, PSm, PT *et al.*) and finally a single juvenile at Grovebury Farm SP (a first site record, PSm) 13 September. A total of nine birds were recorded on ten dates at three different localities in the County.
- Temminck's Stint** *C. temminckii* Two spring records of this extremely rare wader. A single adult was found at Rookery CIP 19 May (PA, TD *et al.*) and another summer plumaged adult was found at Coronation CIP 29 May (DHB, MJP *et al.*). Both records have been accepted by the County Rarities Panel and represent the fifth and sixth records for the County since 1946.
- Pectoral Sandpiper** *C. melanotos* A juvenile bird was present at Coronation CIP from 11 to 15 September (MJP, JDS, PSm, PT *et al.*). This record has been accepted by the County Rarities Panel and is the eighth for the County. For this species to have occurred in a small inland County like Bedfordshire so many times is quite remarkable.
- Curlew Sandpiper** *C. ferruginea* Only one acceptable record of a single immature/first winter at South Mills NR 1 September (PO).



Pectoral Sandpiper, Coronation Clay Pit 14.9.1992

(Photo: L. Carman)

- Dunlin** *C. alpina* Recorded on 70 dates covering every month of the year apart from February. A single bird was at Willington GP 19 January with the first genuine passage bird at Rookery CIP 4 March. There were eight birds at Coronation CIP 8/10 May and 10 were seen on a flooded field near Lower Gravenhurst 16 November.
- Ruff** *Philomachus pugnax* Another excellent year for this species, with a notable passage movement through both Coronation and Rookery CIPs. The earliest record was of 10 flying over Stewartby Lake 20 April and the last was of six at Rookery CIP 26 September. The passage movement peaked with 28 birds at Rookery CIP on 17 May. There was a single wintering bird during December at Sandy GP. Apart from the clay-pits and the single bird at Sandy GP the only other records came from Dunstable SW (one juvenile 31 July) and South Mills NR (one immature female 5 September).
- Jack Snipe** *Lymnocyptes minimus* During the first winter period there were a maximum of five at Houghton Regis CIP 3 January and three at Clophill Quarry 29 February, with the last record being of a single bird at South Mills NR 25 April. In the second winter period the first record was of a single bird at South Mills NR 6 October with a maximum of four at the same locality on 13 December. There were high counts of four to six birds at Grovebury Farm SP between 14-28 December.
- Snipe** *Gallinago gallinago* Breeding was confirmed at South Mills NR with three pulli being ringed. Probable breeding was reported from Rookery CIP, the River Ivel at Blunham and Houghton Regis ChP. Peak numbers were 25 Rookery CIP 15 November, 32 East Hyde 1 December and between 80-100 at Grovebury Farm SP 20-28 December. At South Mills NR it was reported that numbers were down by 60% on the previous year between September and November.
- Woodcock** *Scolopax rusticola* Roding recorded at Pegsdon Hills, Wavendon Heath/Aspley Heath (4), Flitwick Moor, Home Wood Northhill (2), Southill Lake, Sheerhatch Wood, Chicksands Wood (2), Melchbourne Park, Warden Warren (2), Old Warden CBC (2) and The Lodge at Sandy. Outside the breeding season birds were noted from the Aspley Heath Complex, Whipsnade Zoo, Caddington Golf Course, Kidney Wood, Houghton Regis ChP, Barton, South Mills NR, Pegsdon Hills, Maulden Woods, Steppingley Woods, Coronation CIP, Turvey and Lady's Wood Colesden.
- Black-tailed Godwit** *Limosa limosa* All records are published; three Rookery CIP 20 April (RED, RAN, PN), one in full summer plumage Rookery CIP 17 May (RED, DJO, JDS), two Coronation CIP 18 May (PA, RAN, PN), and also on the same day three at Rookery CIP (PA), and finally two at Coronation CIP, one in summer plumage and one heavily moulting on 3 August (RED, DJO).
- Bar-tailed Godwit** *L. lapponica* Only three records of this rarer of the two Godwit species in the County. Four flew north over Priory CP 9 May and there was a single bird north at the same location on 6 June (DK). A phenomenal 68 flew over Rookery CIP 30 August (PT). This number smashes the previous highest County total which was of eight birds at Colesden in May 1957.
- Whimbrel** *Numenius phaeopus* A poor year for this species in the County, being recorded on only eight dates. The spring passage started with three at Whipsnade 20 April (RC) followed by a single bird at Willington 29 April (RDM), one at Coronation CIP 11 May (RIB), four east at South Mills NR 10 May (PO), one Priory CP 13 May (DK) and two at the same location on 25 May (Arthur Stephens per DK). There were only two return passage records, nine over Blows Downs 18 July (TD) and one over Kempston on 29 August (DJO).
- Curlew** *N. arquata* After presence in May during the previous two years, a pair bred on Thurleigh Airfield in the north of the County fledging four young. This remarkable record is the first ever recorded instance of breeding in the County. Elsewhere, records of single birds from Sandy GP 24 February, Harrold GP 3 March, Priory CP 16 March, Willington GP and Priory CP both 25 March, Rookery CIP 26 March, South Mills NR 28 March, Blows Downs 24 April, Coronation CIP 30 May, Rookery CIP 8 June, Coronation CIP 19 June, Priory CP 27 June and again 3 July, Marston Thrift 26 July, Rookery CIP 1 August, Coronation CIP 3 August, Rookery CIP 19 August and the final record for the year at Coronation CIP 31 August.

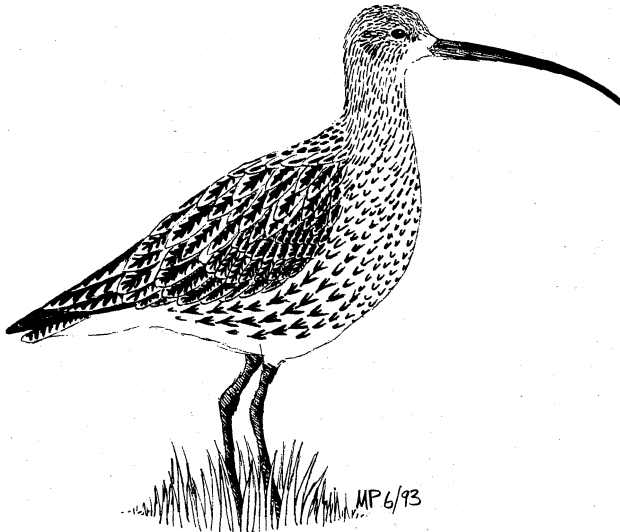
Spotted Redshank *Tringa erythropus* This attractive wader occurred three times during the year.

The first record was of an adult in partial breeding plumage at Coronation CIP 7 June (MJP, PSm *et al.*). The second bird which was very dull and probably a juvenile was also found at Coronation CIP 23 August and stayed until 30 August (PSm, PN, KMS *et al.*). The third bird was an immature found at South Mills NR on 9 September (PO).

Redshank *T. totanus* One pair were found on a nest at Manor Farm Lower Caldecote which was the only proved breeding record for the year. Probable breeding was reported from Willington GP, Dunstable SW (one or two pairs), Coronation CIP, Rookery CIP and South Mills NR. Outside the breeding season records were received from suitable wetland sites, although the majority came from the clay-pits. At South Mills NR the largest counts were 12 on 28 March, 12 on 1 April, 15 on 5 and 13 April and the highest of 16 on 20 April. Six were at Houghton Regis ChP between 19-25 March and a maximum of nine at Coronation CIP 19 May. Recorded in every month from January to August, but in the late autumn/second winter period only one record, at Houghton Regis ChP 5 December.

Greenshank *T. nebularia* A good year in the County for this enigmatic wader. The first records of the year were of one at Rookery CIP and a flock of nine over Coronation CIP on 20 April with the last two birds at Coronation CIP and two at Lower Gravenhurst both on 19 September. The pattern of dates shows the typical annual passage of this species through the County, being recorded on six dates in April, 18 in May, two in June, six in July, 18 in August and ten in September. The best count was of 21 at Rookery CIP on 16 May which was the second highest number ever seen in one flock in the County following the 46 over Priory CP on 27 August 1985.

Green Sandpiper *T. ochropus* Recorded across the County in every month of the year but curiously there was only one record for May. Recorded on 93 dates with the most in one month 22 in August followed by 11 in July. The highest count was of four at Willington GP 21 July and threes were reported from Houghton Regis ChP 1 August; Dunstable SW 3 September and Coronation CIP 11/12 September.



Curlew

(M. Pocock)

Wood Sandpiper *T. glareola* A maximum of six individual birds were reported in the County.

A single bird in breeding plumage was at South Mills NR on 28 April followed by a maximum of two at Coronation CIP between 15-20 May. Single juvenile birds were reported from Coronation CIP 6 August and at South Mills NR 18 August. The last record for the year was of a single bird flying over "Fountains" Blunham on 25 August.

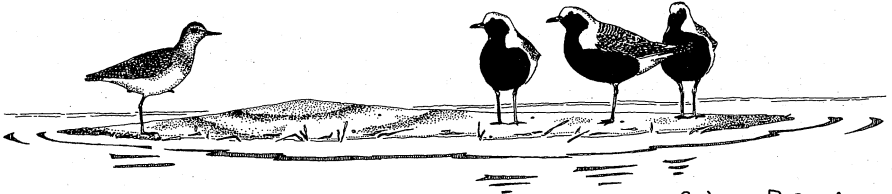
Common Sandpiper *Actitis hypoleucos* This common passage migrant was recorded on 94 dates during the year. The first record was of a single bird at South Mills NR on 15 April and the last a remarkably late bird at Radwell GP on 10 November. Maximum counts were 12 Stewartby Lake 21 July, six Dunstable SW 9 August, four Coronation CIP 14 August and five Grovebury Farm SP 16 August. Recorded on 11 dates in April, 16 in May, two in June, 15 in July, 26 in August, 22 in September and one each in October and November.

Turnstone *Arenaria interpres* Another good year for this species in the County, all records occurring in May, July or August. The first records were of two birds at both Coronation CIP and Rookery CIP on 16 May and a maximum of three birds were seen at Coronation CIP on 22 May. There was a single bird at Priory CP 15 July followed by singles at Coronation CIP 23 July and 29/30 July and another single bird at the same locality 14-16 August. The last records was of a single bird at Rookery CIP 21 August.

Mediterranean Gull *Larus melanocephalus* First of the year was a 1st winter individual in the roost at Brogborough Lake from 18 to 21 January (PN, RAN, MJP *et al.*) and probably the same bird was again at that site on 4 February (MG) and at Coronation CIP on 29 February (RAN *et al.*). A 2nd winter was seen at Brogborough Lake on 29 January (MG) and 8 February (RAH), possibly the same bird had been reported at that site on 25 January though no description was supplied for that date. On 8 February an adult in winter plumage was amongst a flock of Black-headed Gulls, Lapwing and Golden Plover at Stanbridgeford (PT). Probably two separate new and different 1st winters were recorded at Coronation CIP on 22 February (MS), and Brogborough Lake on 11 March (MG), whilst unusually a summer plumaged adult was at Coronation CIP on 18 July (MS). In the second winter period there were at least two further records, a 1st winter at Sandy GP on 4 October, the same or another 1st winter at Brogborough Lake on 30 November (RAN), and an adult at Stewartby CP on 22 December (RAH) and 28 December (KO). A minimum of eight, probably nine birds were therefore seen in Bedfordshire in 1992 bringing the total to at least 31 since 1982.

Little Gull *L. minutus* A paucity of records this year after some 36 in 1991. An adult was at Brogborough Lake on 13 April (DJO) and probably a different bird there on 22 April (PH). On 8 May, one was seen at Shuttleworth (RAH). A 1st winter was at Stewartby CP on 18 May (RAN) and presumably the same bird 20 May (MJP, JDS), when a 2nd summer was also present at the same site (PSm). An immature at Priory CP on 25 August was the only record at this well-watched Bedford site this year (DK). A juvenile at Stewartby CP on 20 September (DJO) was joined by an adult next day (TD) and was presumably the same juvenile/1st winter seen again on 26 September (RAN, PSm).

Black-headed Gull *L. ridibundus* The partial albino adult present in both 1990 and 1991 was reported again at Brogborough Lake on 4, 9 and 26 February (PA, JRG, MG), and a partially melanistic individual was seen at East Hyde on 15 December (BRS) with two there from 20 to 31 December (MDR). Breeding records came from Chimney Corner CIP with c.100 adults nest prospecting on 1 May and c.120 nesting pairs counted on 7 May. On 12 May nesting was noted at Rookery CIP but none at Millbrook CIP where water levels were higher than in 1991. Territorial interest was seen at Bromham Lake on 15 May with a juvenile on a raft on 6 June. Interesting counts during the year included 300 resting on ice at Priory CP on 26 January of which 10 bore aluminium rings, 327 northeast over the same site on 29 March including the partial albino, 33 in the roost at Stewartby on 2 May, 75 at Coronation CIP on 3 and 13 May, and 1,150 south southwest over Priory CP on 28 July indicating post breeding dispersal. On 10 September 4,300 were noted at Stewartby CP, 800 were seen at Sandy on 7 October, and finally an estimated 20,000 of c.28,000 gulls present at Stewartby CP roost on 29 November were of this species.



Coronation Clay Pit, 19/5/92

Andrew P. Chick.

Wood Sandpiper and Grey Plovers

(A.P. Chick)

Common Gull *L. canus* Very few winter counts were received but included 320 plus at Coronation CIP on 14 November and 120 at the same site on 19 December. With vast numbers of Black-headed Gulls present in the winter roosts at Broborough Lake and Stewartby CP, identifying accurate numbers of this species amongst them in diminishing light is almost impossible but several thousand are believed present. Late spring and summer records reported included a 1st summer bird at Priory CP from 23 May to 3 June and again 26 June, a second summer at Willington GP 30 May, and a second summer at Coronation CIP on 13 and 27 June. An adult was at the latter site on 21 and 28 July with three adults on 27 July and seven on 30 July. At Priory CP, adults were noted on 24 and 29 July with two on 30 July.

Lesser Black-backed Gull *L. fuscus* Generally in single figures only in the roosts in January increasing from about third week, 250 northeast over Priory CP on 26 January were therefore noteworthy. At Stewartby CP there were 870 on 7 March, and 500 of 600 gulls in the roost at that site on 20 April were this species as were the majority of 580 gulls in the Broborough Lake roost the following day. Just over 1,000 were in Coronation CIP on 23 April with 470 there on 13 May. A pair were holding territory at Millbrook CIP on 24 May but breeding outcome unknown; see also last year's report. Counts between 83 and 135 were made on playing fields in Kempston between 30 June and 21 July with 98 south over Priory CP on 29 July. At Coronation CIP between 17 July and 28 August counts range from 190 to 525 and by 30 August 500 plus were in the roost at Stewartby CP with over 1,050 counted on 11 September. At Cranfield Airfield 2,000 were estimated on 10th September of which 73% were adults. Many '*intermedius*' were seen during passage but hardly any of the Scandinavian race were reported—more details for 1993 please—an individual of *L. f. fuscus* was therefore noteworthy at Sandy on 5 October (RAH). By the end of the year numbers had fallen to single figures again. Migration of adults of this species is now proven to commence from as early as late January but usually early February but with a distinct northward movement of first year birds from mid-May.

Herring Gull *L. argentatus* Useful records from only three observers this year and no breeding activity reported. As usual some thousands were present during the winter months. Movements over Priory CP included 150 northeast on 26 January and 40 north on 28 March with 66 north next day. Under 30 were in the roost at Broborough Lake on 21 April and a late 1st summer was at Stewartby CP on 20 May. Single adults were recorded at Priory CP on 18 and 29 July. Two adults and one 2nd summer at Coronation CIP on 28 August, and six adults at Stewartby CP on 30 August. At Cranfield Airfield 100 on 10 September and around 5,000 at Stewartby CP on 29 November.

Yellow-legged Gull *L. (argentatus) cachinnans* Recording bodies in some European countries have regarded this form as a separate species from Herring Gull *L. argentatus* for some time, and it has been treated as such by *British Birds* magazine since January 1993, though the B.O.U. have yet to follow and some taxonomic arguments have been raised against the split. Nevertheless, there has been increased interest amongst observers in the County and many more records of Yellow-legged Gulls were submitted for 1992. Whatever the taxonomic status, the identification of adult and 3rd year individuals of this form in late summer is comparatively straightforward and such records can be published here, but as identification criteria are less clear for records outside the summer period and for younger immature birds, some other records are being held over by the local rarities committee pending expert referral. There were a remarkable series of late summer records from Coronation CIP, where the following occurrences have been accepted between 17 July and 9 August, and are probably best shown in tabular form:

Yellow-legged Gulls at Coronation CIP, (DHB, MJP et al.):

Date	July											August		
	17	21	23	24	26	27	28	29	30	31	3	5	8	9
Adults	2	1	3-5	2	1	3	1-2	1-2	6	2	3	1	3	1
3rd Years	1	3	3	-	1	-	-	-	-	-	1	-	-	-

Gulls assemble at this site in a pre-roost gathering, standing on clay islands and allowing the legs to be seen, making identification relatively easy. However, with much movement in and out of the flock even within each evening, and many of the birds doubtless returning over several days, the total number of individuals involved is very difficult to determine, though MJP who made a special study of the site estimated a total exceeding a dozen. Away from Coronation CIP, adults were recorded at Priory CP on 24 July and 2 August (DK), and an adult was on playing fields in Kempston on 9 August (MJP), these possibly being individuals which joined the Coronation CIP flock later in the day. Only full descriptions of this (sub) species will be considered, so please take copious notes should you find one.

Iceland Gull *L. glaucooides* After six in 1990 and four in 1991 to bring the County total to at least 17, there was only one acceptable record in 1992, a 1st winter bird at Brogborough Lake on 3 January (RAN, RDM et al.).

Glaucous Gull *L. hyperboreus* Record cards or forms were received from 17 observers. To be considered for acceptance, at least a brief account and description to satisfy separation from allied species and confirm age are required—simply stating an age and location is insufficient unless substantiated by other observers. From 1 January to 28 March there were two separable 1st winter birds seen at either Brogborough Lake or Stewartby CP, both remaining from the end of December 1991, descriptions being provided for both birds (RAH, RAN, MJP et al.), and an adult at Brogborough Lake on 3 January was also doubtless that present from late December 1991 (RDM). One or other was also reported from Rookery CIP 23 February and Coronation CIP and Vicarage Farm landfill site 28 March. In April, both were reported from Brogborough Lake on 5th, one was at Coronation CIP on 11th, and one, probably still one of the two January birds, was at Stewartby CP on 20th and 23rd and at Brogborough Lake on 21st and 24th. January claims of a 2nd winter bird at Brogborough Lake on 2, 26 and 29 January were not sufficiently well described to separate from the paler of the 1st winter birds present.

There were no reports during the later months of the year, thus there were probably no new additions to the County tally which still stands at around 40 birds. As the birds in January to April are not in the roosts every night, it is assumed they visit the Pitsford, Grafham or Willen roosts etc. outside Bedfordshire. Information from adjacent recorders would be beneficial.

Great Black-backed Gull *L. marinus* A much under-recorded species with useful records from just four observers received. On 11 January 105 adults and 15 of other ages were counted at Brogborough Lake and on 26 January c.200 moved northeast over Priory CP. On 23 April there were 23 at Coronation CIP and 30 plus at Stewartby CP. There were still ten

1st summer birds at Stewartby CP on 20 May and 12, including three adults, had returned there by 30 August. First-summer singles were noted moving south over Priory CP on 7 and 14 June, and an adult on 8 September at Dunstable SW was unusual for that site. An end of year count of 800 plus was noted on 31 December at Stewartby CP.

- Kittiwake** *Rissa tridactyla* Three adults were at Brogborough Lake on 22 March (JB) and another at Stewartby CP on 28 April (MJP). Another was reported to BIS at the latter site on 8 May.
- Caspian Tern** *Sterna caspia* An adult flying NE over Priory CP at 17.36 BST on 17 April (DK) has been accepted by the BBRC and is only the second occurrence of Caspian Tern in Bedfordshire—the first being at Harrold CP on 18 July 1976. This was undoubtedly the (unusually early) bird which had been present from 5 to 12 April at Lackford WR, Suffolk before going missing until 17 April when it appeared at Willen Lake, Buckinghamshire and was seen by several observers before flying off east at around 17.10. Amazingly it then returned to Lackford WR on 18 April following its fly-past of Priory CP. The flight time of only 26 minutes from Willen to Bedford suggests that the bird took a cross-country route over the Marston Vale rather than following the Ouzel and Ouse valley. It was looked for but not seen at Wyboston GP between 18.30 and 19.15 on the 17th, but would almost certainly have passed that site by then even if following the Ouse. It seems likely that it must have made a more leisurely unobserved westward journey through Bedfordshire at some time between 12 and 17 April.
- Sandwich Tern** *S. sandwicensis* Only three records last year and only two this year. A single a.m. on 17 April at Priory CP paled into insignificance later that day, see above (DK) and in the autumn, two flew over Turvey Abbey on 19 September (JM).
- Common Tern** *S. hirundo* The first were two at Priory CP on 16 April and 20 were present there by 7 May. Other first arrivals were 19 April at South Mills NR, and 20 April at Stewartby CP and Brogborough Lake. Recorded regularly during the summer from the Marston Vale and Ouse Valley. At least six pairs were noted breeding at Radwell GP on 7 May, and 18 to 20 nests were occupied at Chimney Corner CIP on 17 May. A pair bred on Manor Farm ponds Lower Caldecote fledging two young and a pair produced one flying young at Grovebury Farm SP. Black-headed Gulls drove away breeding attempts at Bromham Lake NR. The maximum count came from Priory CP where 61 were counted on 30 August (DK), next highest count being 30 at Stewartby CP on 16 May. There were a series of records from the south of the County where the species is unusual, with two at Dunstable SW on 7 July only the second record for an observer regularly visiting that site over 14 years! This was followed by one at Luton Hoo on 8 and 26 July, one at Woburn Park on 19 July, a pair again at Dunstable SW from 21 to 31 July, visiting Houghton Regis ChP on 23 July and 1 August and finally back at Dunstable SW on 30 August. Late records were eight at Stewartby CP 12 September, juveniles at Brogborough Lake on 13 September and at Stewartby CP the following day, one at Houghton Regis ChP on 19 September, one at Priory CP 23 September and lastly two at Stewartby CP on 26 September.
- Arctic Tern** *S. paradisaea* Record cards received from 13 observers mostly from Stewartby CP. The first, very early record, was of six at Stewartby CP on 15 April (TD), followed by three moving northeast through Priory CP on 18 April (DK). Five were reported there on 26 April (GDP), and at Stewartby CP there were four on 28 April (DJO), one on 1 May (PT) and two more reported on 3 May (G and CG). Another was at Priory CP on 4 May (DK), and at Stewartby CP there were four on 8 May (RED) and singles on 16 and 18 May (TD, RDM). Finally in spring one passed NE at Priory CP after rain on 29 May (DK). There were fewer in autumn with records only from Brogborough Lake, involving two on 30 and 31 August (Psm, PT) and a single on 12 September (Psm), and Stewartby CP where there were singles on 17 August (DJO), 30 August (KMS) and 11 September (DJO) and finally two on 13 September (MDR). An absolute maximum of only 39 birds this year.
- Little Tern** *S. albigrons* On 10 May an adult was first seen in Rookery CIP (PN) then relocated over Stewartby CP (Psm *et al.*). On 20 May, two adults were present at Stewartby CP (RAN, Psm, MJP, PA).

Black Tern *Chlidonias niger* Records received from 31 observers indicated strong passage again this year. First of the year were five at Stewartby CP on 13 May with a maximum of nine there next day, when there were also four in Rookery CIP. Four were at Stewartby CP and two were in Rookery CIP on 16 May, with five at the latter site the next day. Seven were at Stewartby CP on 18 May but just one on 19th. Three more were recorded at Stewartby CP on 23 May and two there on 24th when also two at Rookery CIP, two at Coronation CIP and three at Priory CP. The last in spring was a single at Stewartby CP on 28 May. A 'blotchy non-breeder' was reported at Radwell GP on 27 June, before the autumn passage began with a single at Stewartby CP on 7 August followed by two at Harrold CP on 8 August, six at Priory CP on 10 August then three at Stewartby CP on 17 August, 12 at Priory CP on 20 August, juveniles at Stewartby CP and Rookery CIP on 21 August, nine at Stewartby CP on 22 August and a single at Priory CP from 23 to 27 August plus two at Rookery CIP on 23 August. Three were at Brogborough Lake on 23 August, five on 29 and 31 August with six on the 30th when there were five also at Stewartby CP. On 11 September an astonishing 123 were counted at Stewartby CP (MJP, JDS, RAN, DJO), the highest ever total in Bedfordshire and part of a huge influx across southeast Britain (e.g. 1,000 in Thames estuary previously and 500 at Rutland Water on the same date, per BIS). On the same day 40 were present at Brogborough Lake at dusk, but only 11 were seen at Priory CP, whilst on 12 September, one observer recorded eight remaining at Stewartby CP, but for most only three were left! Also on 12 September there were three at Priory CP and two at Coronation CIP, whilst subsequently in September there were seven at Stewartby CP on the 13th and one on the 14th, three at Priory CP on the 17th and a juvenile on the 22nd, and finally at Stewartby CP three on the 24th and the 26th and a single on the 30th—the last of the year.

Feral Pigeon *Columba livia* No record cards received for this species which is ignored by most observers, but the normal population of probably several hundred birds was present in the urban area of Bedford.

Stock Dove *C. oenas* The largest flock recorded was 185 at Luton Hoo on 27 March. Breeding activity was noted at Priory CP, South Mills NR and Grovebury Farm SP, and pairs on the Old Warden CBC were up to eight from seven in 1991.

Woodpigeon *C. palumbus* The largest flocks noted were c. 800 at Stopsley Common in January and Bradgers Hill in February, with c. 750 at Warden Hill in March. Up to 300 roosted at Priory CP in February and maximum numbers in the Pegsdon Hills area were between August and November with over 500 generally present.

Collared Dove *Streptopelia decaocto* The maximum roost at Priory CP was 254 on 28 November, and another roost of 120 was reported at Sundon Park Industrial Estate. A leucistic individual was seen at Houghton Regis ChP on 5 April and early breeding was noted in Barton with eggs in January and a fledgling on 20 February.

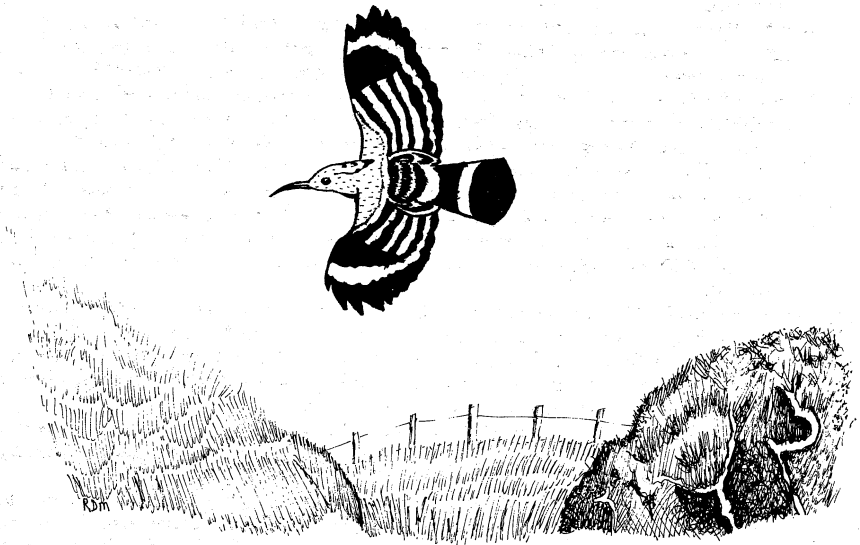
Turtle Dove *S. turtur* The first were on 25 April at South Mills NR, the Old Warden CBC and Pegsdon Hills, and the last was near Luton on 10 October. Spring passage at Priory CP was very poor and none bred, but though several observers commented on low numbers, breeding at the Old Warden CBC remained constant (three pairs) and the species remains widespread in the County though nowhere numerous.

Cuckoo *Cuculus canorus* The first was at Priory CP on 15 April and the last was an immature at the same site on 6 September. The main arrival was between 23 and 26 April when the species was reported from eight sites. Four singing males on the Old Warden CBC equalled the recent average, and singing was recorded up to 28 June at South Mills NR and Maulden Woods.

Barn Owl *Tyto alba* Breeding was recorded in the Old Warden area (up to three pairs with one pair raising two young), in the north of the County, and east of Bedford where adults were seen carrying food. Other breeding season records were received from Thorn, Eversholt and Wrest Park. Road casualties were found at Westoning (19 May) and Turvey Bridge (20 July), and another was reported near the traditional Willington Dovecote site which may have been abandoned as a result, though birds were observed there in February and July. Birds were also recorded at South Mills NR and in the Dunstable, Shefford and Bromham areas in the

first winter period and at South Mills NR again, Hatch, Brogborough and Ridgmont in the autumn and second winter periods. Four BTO-ringed birds were released at Whipsnade in June.

- Little Owl** *Athene noctua* Recorded in the breeding season from approximately 30 sites. This species remains widespread on farmland in the County and is probably normally under-recorded, as intensive atlas work has located pairs in many under-watched areas.
- Tawny Owl** *Strix aluco* This species remains widespread, though as the most highly nocturnal owl it is probably under-recorded. Breeding concentrations were noted at Luton Hoo (three/four pairs), Pegsdon Hills (at least three pairs) and Whipsnade (at least three pairs, two juveniles ringed from one nest).
- Long-eared Owl** *Asio otus* An influx in the first winter period produced at least three roosts in the south of the County with maxima of 12, six and two individuals. Elsewhere singles were noted at Houghton Regis ChP, Priory CP and South Mills NR where one was trapped and ringed on 5 March. Road casualties were found at Houghton Conquest in January and East Hyde in February. Two pairs bred in the south of the County, one of them at a new site, both raised two young. In the second winter period the only records were at Old Warden and Priory CP, both in October.
- Short-eared Owl** *A. flammeus* In the first winter period singles were recorded from Sewell/Barley Brow, Houghton Regis ChP, South Mills NR, Broom, Coronation CIP, Stewartby CP and Cardington Airfield. In March one was found freshly dead at Great Barford. The last in spring was at Coronation CIP on 23 April, whilst one east over Wavendon Heath on 4 April was presumably a migrant. In the second winter period the first was at South Mills NR on 11 October and there was a small influx at Henlow Airfield in December with up to three present. Others were seen at Coronation CIP and Luton Airport.
- Nightjar** *Caprimulgus europaeus* Two singing males returned to a traditional site in the west of the County on the early date of 14 May, and a female was seen at the same site on 22 May. Two males were present until at least 6 July and churring continued to be heard until 17 August. No young were seen but breeding probably occurred. A silent bird was seen at another site in the east of the County on 25 June.
- Swift** *Apus apus* The first was at Brogborough Lake on 24 April with two reported to BIS at Stewartby CP on the same date, but most observers' first records were between 8 and 10 May. The largest flock reported was 125 at Priory CP on 29 July and the last were two at the same site on 16 September.
- Kingfisher** *Alcedo atthis* Numbers were lower than average with breeding recorded at Blunham/South Mills NR (two pairs) and Bromham where a pair fledged six young. Territorial behaviour was also recorded at Priory CP and there were other breeding season records from Tempsford, Coronation CIP, Felmersham NR and Dunstable SW. The pair at South Mills NR bred successfully despite disturbance by photographers; observers are reminded that this is a Schedule I species and that a license is required for photography at or near the nest. The species was recorded more widely in the autumn and second winter periods, and an interesting winter record was of one perched on roadside wires in Leighton Buzzard on 20 December.
- Hoopoe** *Upupa epops* A remarkable year with no less than three records; at Pertenhall on 30 April and 1 May (SA), flying across the road at Bison Hill Whipsnade on 10 May (AJL), and again from a car at Studham Common on 2 July (PT).
- Wryneck** *Jynx torquilla* The only record of the year was an unfortunate individual killed by a cat in a garden at Eaton Bray on 13 September, a typical date for the autumn migrants which have occurred in many recent years (per PT). The specimen was passed to Bedford Museum.
- Green Woodpecker** *Picus viridis* Record cards were received for breeding season dates from fourteen sites, with non-breeding season records from a further nine sites, but undoubtedly under-recorded. Eight calling males at the Old Warden CBC were the highest ever total.
- Great Spotted Woodpecker** *Dendrocopos major* Breeding seasons records from eight sites and non-breeding season records from a further 12 probably represented even more under-recording than for Green Woodpecker.



Hoopoe

(R. Moore)

Lesser Spotted Woodpecker *D. minor* A well-watched pair nested in a Willow at Rink Island on Bedford Embankment a few yards from the Town Bridge. Other breeding season records came from Odell Great Wood, Turvey Abbey, New Wood Turvey, Marston Thrift, Flitwick Moor, Shuttleworth Park, Sandy, Woburn Park, Wavendon Heath, Charle Wood, Kidney Wood, and two drumming birds at Kings Wood, Houghton Conquest. The only record of the year on the Old Warden CBC was a male on 28 March. An adult female trapped and ringed at South Mills NR on 14 July was the first at the site for two years. In winter, when the species wanders, also recorded at Sharpenhoe, Bramingham Wood, Wardown Park, Legrave Marsh, Willington GP, Priory CP, Ickwell and Swiss Garden.

Passerines

Woodlark *Lullula arborea* Excellent news as this species was recorded in the County for the second year running after an absence of over twenty years. Many observers reported two birds at a site in the west of the County between 21 February and 6 March (JS, PSm *et al.*), and a singing male in the same general area was present into April (AH per DHB). Hopefully this represents the beginning of a re-colonisation, though it is interesting to note that the last records in the County were not far from this site, in an area which has generally been little watched, and that this species can be extremely elusive.

Skylark *Alauda arvensis* Few record cards for this still widespread species. Flocks of 100 were noted at Barton Hill Farm in January and 47 at South Mills NR in February.

- Shorelark** *Eremophila alpestris* One very briefly at a quarry near Clophill on the afternoon of 17 October was only the second record for the County, and coincided with an influx on the east coast (PSo).
- Sand Martin** *Riparia riparia* The first of the year was one at South Mills NR on 16 March, with another there on 22 March. Other March arrivals were noted at Brogborough Lake (maximum five on 18th), two at Willington GP on the 22nd, ten on the Ouse at Odell on the 24th and four at Priory CP on the 25th. Breeding colonies were found at Willington GP (a total of 100 nests in two groups of 60 and 40), Bedford Embankment up to ten pairs nesting in drainage pipes), Mentmore Road SP (50 nests) and Arnolds SP Billington Road (50 nests). There was no breeding at other former colonies in the Woburn/Leighton Buzzard area, and the site of the former large colony in the Fuller's Earth spoil heap at Aspley Heath was destroyed as the quarry was landscaped, but a new colony was found at Manor Farm Lower Caldecote with 16 nests. In autumn a good passage was recorded at Priory CP with a maximum of 300 on 9 September and the last were 40 still present at the same site on 17 September.
- Swallow** *Hirundo rustica* The first was at South Mills NR on 8 April, with the main arrival at most sites from about 20 April. A brood of albino young were noted flying at Keysoe on 18 August. On 20 September heavy passage was noted at Barton Hills with many hundreds passing south in a period of two and a half hours, and light movement was also noted at Eaton Bray on the same day. The last were two at Biggleswade on 22 October.
- Red-rumped Swallow** *H. daurica* One briefly at South Mills NR on the morning of 19 May has been accepted by the BBRC and is the first for the County (PO). A not unexpected addition to the County List.
- House Martin** *Delichon urbica* The first were two at Priory CP on 15 April, but main arrival in Eaton Bray was as late as 9 June. Highest numbers recorded on autumn passage were 120 around Woburn in late August, 250 at Luton Hoo on 8 September and 80 at South Mills NR on 20 September. The last were a party of six at Stopsley on 13 October.
- Tree Pipit** *Anthus trivialis* The first was one at Pegsdon on 19 April, and passage was also reported at Blows Downs, whilst two flying over South Mills NR calling on 3 May may have been a first record for the site. Singing males were recorded at Pegsdon Hills/Deacon Hill (three), Maulden Woods (two), Millbrook Warren (four), Aspley Heath (five or six in total in the whole complex) and on set aside at Woburn. The last was one flying over Whipsnade Zoo calling on 14 September.
- Meadow Pipit** *A. pratensis* In the first winter period highest numbers were 56 at Clophill Quarry, 50 at Old Warden and 60 plus at Willington GP in February, whilst at Pegsdon Hills spring passage peaked with a maximum of 42 in April. Breeding was noted at South Mills NR (four or five pairs), Yelden Airfield, Coronation CIP, Rookery CIP, Pegsdon Hills, Blows Downs and Bison Hill. In autumn a maximum of 45 at Pegsdon Hills in September, 50 at Barley Brow 12 September and 100 at Barton Hills 20 September, and in the second winter period 72 at East Hyde on 19 December.
- Rock Pipit** *A. petrosus* The only record was one at Willington GP on the typical date of 15 March (RED, RDM). It was probably of the British rather than Scandinavian race, though the latter also occurs as a spring migrant.
- Rock/Water Pipit** *A. petrosus/spinoletta* There were records at South Mills NR on 13 February (two together), 14 February and 1 March, presumably relating to two or three separate individuals in total (PO).
- Yellow Wagtail** *Motacilla flava* The first, a male at Stewartby CP on 3 April, was followed by a generally poor spring passage. Numbers at Priory CP were the lowest recorded with a maximum as low as seven on 9 May, and though disturbance at this site has increased over the years, passage was also poor at Pegsdon. Largest numbers recorded in spring were at Stewartby CP with 29 on 10 May and 60 reported to BIS on 24 April, and this site also recorded the highest numbers in autumn with 47 around the lake and village on 31 August. The last were three at South Mills NR on 27 September. Three males showing characteristics of the continental 'Blue-headed' race were recorded, at South Mills NR on 25 April and from 7 to 10 May (PO), and at Priory CP on 2 May (KO).

- Grey Wagtail** *M. cinerea* Breeding season records from Grovebury Farm SP and Grange Mill on the Ouzel, Jordan's Mill, Sandy Mill and Blunham on the Ivel and Bromham Weir on the Ouse. Breeding was proved at the latter site with two juveniles on 25 June. Also recorded in autumn and winter at Harrold CP, South Mills NR, Biggleswade, Willington GP, Priory CP, Kempston, Coronation CIP, Stewartby SW, Amphill, Woburn Park, Barton Hills, Legrave Marsh, Sundon Park, Dunstable SW, Eaton Bray, Whipsnade Zoo, East Hyde and in central Luton. Also a migrant flying over Blows Downs on 28 March, nearly a site first, and demonstrating that almost any species will eventually turn up at a well watched site.
- Pied Wagtail** *M. alba* In the first winter/spring passage period the highest count was 30 at Luton Hoo in March. In the second winter period a roost at Cranfield peaked at 100 in December. Birds showing characteristics of the continental 'White' race were recorded at Willington GP on 15 and 22 March with two on the latter date (RDM), on the paddocks at Blows Downs on 22 March (RD), at Stewartby CP with one on 11 March (PM), two on 3 April and three on 15 April (TD) and one on 1 May (KO), and at South Mills NR on 18 and 19 April and 10 May (PO). One was also reported to BIS at Stewartby CP on 3 May.
- Wren** *Troglodytes troglodytes* At the County's more intensively recorded sites there were 38 pairs on the Old Warden CBC (up from 35 in 1991), 43 pairs at Priory CP and six pairs at South Mills NR. Interesting retraps at the latter site included a bird ringed in late 1989 as an adult and therefore at least four years old, a good age for this species. Results at Waterloo Thorns CES followed national trends.
- Duncock** *Prunella modularis* Six pairs at South Mills NR were stable and numbers of adults at Waterloo Thorns CES were up slightly from the 1991 low point, but ten pairs at the Old Warden CBC were the lowest ever, down from 12 in 1991 and only a fraction of the 108 pairs at the peak in 1975. Duncock was recorded in every tetrad in the new County Atlas, but in some farmland tetrads surveyed late in the atlas period, even to locate the species proved a struggle, pointing up long term declines. However, on a brighter note numbers of juveniles at Waterloo Thorns CES were good.
- Robin** *Erithacus rubecula* Varying population trends with 27 pairs at the Old Warden CBC up from 24 in 1991 and average for recent years, and five pairs at South Mills NR up from three in 1991, but 11 pairs at Priory CP low and no adults trapped at Waterloo Thorns CES, though the latter site usually exaggerates national trends for this species.
- Nightingale** *Luscinia megarhynchos* After one at Blows Downs on 25 April, the next were recorded on 3 May at Home Wood Northhill, Stopsley and Waterloo Thorns. In the area of the latter site there were a maximum of six pairs and the Stopsley individual also continued to hold territory with, most unusually, fledged juveniles seen in late June. The Home Wood bird also held territory until at least 10 May and other singing males were recorded at the Old Warden CBC (two), Sutton Fen and Coronation CIP. Another at Stewartby CP was recorded on 18 May only, and at this well visited site was probably a late passage bird. The last was a female trapped at Waterloo Thorns CES on 31 August, a control of a bird ringed at Landguard, Suffolk in April 1989 and therefore at least four years old.
- Black Redstart** *Phoenicurus ochruros* After one at Blows Downs on 4 March (MP), a series of records of a female at the eastern end of the same site between 23 and 29 March presumably related to the same individual (RD, TD) though there was probably also a different bird at the paddocks on the last date (TD). An immature male was again on the paddocks at Blows Downs on 4 May (RD, TD, MJP). In between one was reported at Priory CP on 21 April (Sheila Wilmot per DK). Others were also reported to BIS at Blows Downs on 9 and 23 April.
- Redstart** *P. phoenicurus* The first, a male at Blows Downs on 21 and 22 April (MDR, PH), was followed by a small fall on 25 April with three males and a female at the same site (RD, MJS *et al.*), one male and the female remaining until 27 April. There was a female at Pegsdon Hills on 1 May (JCP). In the Aspley Heath area two singing males were first recorded on 3 May and held territory, with singing recorded until 17 May, a male at a nest box on 17 June and the last record on 7 July (TD, KMS, PSM *et al.*). In autumn a male trapped at Houghton Regis ChP on 21 August had been ringed the previous autumn in West Sussex (NRF), and two first-year males were trapped and ringed at South Mills NR on 29 August and 20 September (PO). The last was a female in a hedgerow at the new Berry Farm Wood site at Wootton on 29 September (DHB).

Whinchat *Saxicola rubetra* Spring passage commenced with a strong influx at Blows Downs, with six on 25 April, and birds continued to be recorded there up to 13 May. Elsewhere in spring recorded at Biggleswade Common (a male on 26 April), Pegsdon Hills (a male on 1 May), set aside at Harlington (a male and female on 1 and 3 May), Houghton Regis ChP (a female on 13 May) and South Mills NR (males on 17 and 21 May). In autumn even more widely recorded from Blows Downs (maximum seven, possibly eight, on 30 August), Warden Hill, Bradgers Hill, Pegsdon Hills (maximum six on 31 August), Houghton Regis ChP, Dunstable SW, Stewartby CP, Coronation CIP, Shefford, Biggleswade Common, South Mills NR, Biddenham and Keysoe Hatch End. The last was at Warden Hill on 30 September.

Stonechat *S. torquata* Spring passage began early with a male at South Mills NR from 9 to 11 February, a male at Wavendon Heath on 1 March, a first year male at Willington GP on 21 March, a female at Blows Downs on 31 March, a male at Henlow on 16 April and finally a female at Stewartby on 3 May. After a male at Houghton Regis ChP on 26 and 27 September and one at South Mills NR on 1 October, a good influx in late autumn with birds (females/immatures unless otherwise stated) at Houghton Regis ChP (18 to 26 October), Harlington (21 to 24 October), Bradgers Hill (a male on 29 October), Bedford SW (31 October), Bromham NR (31 October, a pale individual), Grovebury SP (1 to 8 November), Beeston (7 November), Steppingley Reservoir (two, 8 November), Priory CP (14 to 17 November), Wyboston GP (a pair 16 to 21 November) and Coronation CIP (a pair 29 November to at least 4 December). The pairs at Wyboston GP and Coronation CIP were both reported to BIS on 5 December. Males and females of this species have a tendency to winter as pairs, and the large number of late autumn records may promise a welcome return to the species' former status as a regular winter visitor.

Wheatear *Oenanthe oenanthe* The first of an excellent spring passage was a female at Bradgers Hill on 15 March, followed by two at Priory Business Park and a male at Blows Downs on 17 March. In March, 104 bird days were recorded at Blows Downs with the main passage from the 20th to the 24th and a maximum of 18 birds on the 22nd. A lull followed with only seven bird days in the first eleven days of April before 82 bird days in the latter part of the month, with main passage from the 24th to the 26th peaking with 16 on the 26th. Eighteen further bird days were recorded in May with the last a male on 13 May. Elsewhere spring passage was recorded from Whipsnade Zoo, Warden/Galley Hills, Stopsley Common, Sharpenhoe, Streatley, Pegsdon Hills, Houghton Regis ChP, Harlington, Grovebury Farm SP, Aspley Heath, Rookery CIP, Stewartby CP, Coronation CIP, Biddenham, Priory CP, Cardington, Willington GP, South Mills NR, Portobello Farm Sandy and Knotting. Birds showing characteristics of the Greenland race were recorded at Blows Downs (one on 20 April and two on 26 April), Grovebury Farm SP (26 April), South Mills NR (two on 30 April and possibly another on 8 May) and Streatley (1 May). There were a number of late spring records, with a male and two females at Coronation CIP on 10 May with one female remaining until 15 May, two at Biddenham and a female at Priory CP on 13 May and another at Rookery CIP on 17 May, and a male was observed holding territory at Yelden on 7 May. Autumn passage was quieter and was noted at Blows Downs (maximum ten on 14 August), Sundon Park, Streatley, Warden Hill, Pegsdon Hills, Dunstable SW, Coronation CIP, Biddenham/Kempston Mill and Willington GP, the last being at Biddenham on 14 October.

A 'bird day' is referred to in this account and in that for Ring Ouzel; one 'bird day' normally implies that one individual of a species was present on one date. It is a rather arbitrary unit of measure, as one bird present for nine days or nine birds present for one day both count as nine bird days, and (to steal a beautiful phrase which appeared in a letter in British Birds a few years ago), a day when there are birds but no observers is reckoned as equivalent to a day when there are observers but no birds (both count as zero bird days!). Despite these limitations, it can be useful to summarise occurrences of scarce migrants at well-watched sites, and is therefore used here for Blows Downs records.

- Ring Ouzel** *Turdus torquatus* The first was a male at Blows Downs on 20 March followed by another at Houghton Regis ChP on 5 April, but the main spring passage at Blows Downs commenced with a male on 15 April and totalled a maximum of 118 bird days including a remarkable peak of 23 birds in two parties of eight and fifteen on 24 April. The last was on 9 May. Elsewhere in spring recorded at Whipsnade Zoo with a male and female on 22 April, Flitwick Moor a male on 23 April, Houghton Regis ChP again with two on 26 April, Pegsdon Hills with a female on 2 May and Bison Hill with a female on 15 May. In autumn a remarkable record of a flock of 20 to 30 at Priory CP on 23 August was followed by a first winter female at Bradgers Hill and a male at Houghton Regis ChP, both on 4 October coinciding with large movements of Redwings.
- Blackbird** *T. merula* A peak count of 39 at Priory CP in the first winter period, and a good breeding season with 18 pairs at the site. Numbers at South Mills NR stable at eight pairs, but 26 pairs at Old Warden CBC was down on 1991 and an all-time low for the site. Ringing results at Waterloo Thorns CES were poor for adults but average for juveniles. Influxes were noted in October with 20 at Houghton Regis ChP on 11 October and an increase at Priory CP on 17 October, and numbers at the latter site built to a maximum of 53 in December.
- Fieldfare** *T. pilaris* Largest numbers in the first winter period were two flocks of 500 at Woburn and Old Warden, both on 28 March, with 300 at Woburn and 250 at Harlington in February. Other flocks of 100 recorded at Blunham, Brogborough Lake and Pegsdon Hills in January, and 110 at Great Oaks Farm Turvey on 2 April. The last in spring were three in Woburn Park on 22 April, and the first in autumn two at South Mills NR on 11 October. In the second winter period the largest flock was up to 270 at Bromham NR in late December, and there were no large influxes in early October as there were with Redwing.
- Song Thrush** *T. philomelos* The population at South Mills NR was stable at five pairs, and 12 pairs at Priory CP produced good numbers of young, but seven pairs at the Old Warden CBC equalled the lowest ever total, and ringing results at Waterloo Thorns CES were the worst ever. Generally the population in the County followed the downward national trend, and in atlas work it became difficult to find in farmland in the last year of field work, and was not recorded at all in one tetrad in the TL06 ten kilometre square.
- Redwing** *T. iliacus* In the first winter period large flocks included 100+ at Stopsley Common and 100 at Priory CP in January, with a large southward cold weather movement of 600 at the latter site on 22 January. In late February there was a flock of 106 at Popes Meadow Luton, with c.150 there on 3 March, and subsequently flocks of 113 at Blows Downs on 1 March, and 166 at Turvey Abbey Park and 200+ at Stopsley Common both on 5 March. The last in spring was at The Lodge on 17 April. In autumn the first was heard over Blows Downs on the night of 3 October, whilst strong NE winds produced a notable movement in the south of the County on the following day including 100+ at Blows Downs, c.200 west over Woburn, parties of 10-20 passing Hill Farm Ampthill all day and hundreds over Eaton Bray in the afternoon and evening, with movement continuing through the following week. In contrast the first at Priory CP were four on 5 October, though 142 passed west on the 10th. Finally, a flock of 170 were in Turvey Abbey Park on 8 December.
- Mistle Thrush** *T. viscivorus* Two pairs were recorded breeding at South Mills NR, and the largest parties noted were 14 at Boughton End in June, 16 at Eversholt in July, 36 around Whipsnade Zoo on 9 September and 15 over Eaton Bray on 10 October coinciding with other thrush movements.
- Grasshopper Warbler** *Locustella naevia* The first two at Warden Little Wood on 19 April were quickly followed by others at Coronation CIP on the 21st and South Mills NR and Brogborough Lake on the 22nd. Males held territory at Whipsnade, Galley/Warden Hills, Pegsdon Hills, Toddington, Maulden Woods (two), Old Warden CBC (four), Coronation CIP, South Mills NR and Knotting. Breeding was proved at South Mills NR with two newly fledged juveniles trapped on 1 July. Others were recorded reeling on one or two dates only at Dunstable Downs, Blows Downs, Barley Brow, Sundon Country Park (two), Grovebury Farm SP, Charle Wood, Ampthill Park, Steppingley Reservoir, Wood End Marston, Home Wood Northill (two), Broom, Arlesey, Blunham, Bromham, Harrold Park Farm, West Wood Souldrop and Newton Gorse, and though some of these were doubtless only migrants

not all the sites were revisited and birds probably stayed to breed at some. The last was heard reeling at Coronation CIP on 3 August.

- Sedge Warbler** *Acrocephalus schoenobaenus* The first was on 10 April at Priory CP where 44 males held territory, one less than in 1991. Main spring passage at South Mills NR was from 10 to 25 May with 31 new birds trapped during the month. Two pairs bred in the ringing area at that site and there were ten more in the area, possibly with some overlap with 13 pairs recorded on the Ivel Waterways Bird Survey area at Blunham/Girtford. On autumn passage at South Mills NR 114 birds were trapped in July (87 juveniles between 14th and 26th), 20 in August and six more in September with the last on the 13th. A total of 189 new birds ringed during the year was a best ever total for the site. The last were two at Priory CP on 22 September.
- Reed Warbler** *A. scirpaceus* The first was at Stewartby CP on the early date of 20 April, though there was no count of breeding pairs for that site or for Brogborough Lake. At South Mills NR 33 were trapped on spring passage. Breeding colonies were located at Houghton Regis ChP (22 pairs), Battlesden Lake (five pairs), Priory CP (31 males held territory) and South Mills NR (five pairs, with three more in the Ivel Waterways Bird Survey area possibly including some overlap). There were other breeding season records of singing males at East Hyde SW, Grovebury Farm SP, Steppingley Reservoir and Rookery CIP (two). Autumn passage at South Mills NR was steady from 18 August with peaks from 7 to 12 and 17 to 24 September, and a total of 79 birds were ringed at the site during the year. A female controlled at Houghton Regis ChP on 7 August had been ringed as an adult at South Mills NR on 16 July 1990. The last was at Priory CP on 17 October.
- Lesser Whitethroat** *S. curruca* The first was at Priory CP on 18 April and at least one pair bred there. As in 1991 none bred on the Old Warden CBC, and only eight were trapped at South Mills NR all year, but numbers of both adults and juveniles trapped at Waterloo Thorns CES were slightly up. The last were on 27 September at Priory CP and Pegsdon Hills.
- Whitethroat** *S. communis* The first were on 24 April at Newton Bromswold and Priory CP. Nine pairs holding territory at the latter site were well up from one pair in 1991, but only three pairs at the Old Warden CBC (as in 1991) equalled the lowest ever total. Two pairs bred at South Mills NR and the total ringed there was up from 20 in 1991 to 23, and though numbers of adults ringed at Waterloo Thorns CES were 50% down on 1991, productivity was good and juveniles were at 180% of 1991 numbers. The last was at Priory CP on 27 September.
- Garden Warbler** *S. borin* The first were two at Barton Hills NNR on 12 April. At Priory CP 14 pairs held territory, but only one pair at the Old Warden CBC was the lowest ever, compared to a peak of ten pairs in 1984. Two pairs bred at South Mills NR and 50 new birds were ringed during the year with spring passage from 7 May into June and autumn passage peaking from 15 to 28 July. A juvenile controlled at Houghton Regis ChP on 15 August had been ringed at Felixstowe, Suffolk three weeks earlier. At Waterloo Thorns CES numbers of adults and juveniles were both up. The last was at Pegsdon Hills on 31 August.
- Blackcap** *S. atricapilla* Wintering individuals were recorded at Cutenhoe Road and Vauxhall Park in Luton and at Houghton Regis and Flitwick in January, and at Crawley Green Road in Luton and at Meppershall in February. Presumed migrants appeared at Blows Downs on 18 March and at Bromham Hall and Priory CP on 4 April. At the latter site 19 pairs held territory, up from 12 in 1991, but ten pairs at the Old Warden CBC were slightly down on 1991. At South Mills NR 26 were ringed during the year, and both adults and juveniles were up at Waterloo Thorns CES with excellent juvenile survival. In the second winter period recorded at Cutenhoe Road again through November and December, and also at Blunham in both months, at Barton and Turvey Abbey in November and at East Hyde, Houghton Regis, Ampthill and Upper Caldecote in December.
- Wood Warbler** *Phylloscopus sibilatrix* The first was at Blows Downs on 21 April (MG), and return to the traditional site at Aspley Heath was on the early date of 23 April (TD). Two singing males were located in the same area on 3 May (DHB, BJN), and one was still present on 16 May but there were no further reports and breeding apparently did not occur. Another at Whipsnade Zoo on 11 May was also presumably a migrant (CT), and it seems that after a poor spring passage this species did not breed in the County this year, the only other record being an autumn migrant at Sewell on 11 August (not 10 August as stated in the Hobby, PM).

- Chiffchaff** *P. collybita* Wintering individuals were recorded at Priory CP on 7 January and 2 February, Eversholt and Houghton Regis ChP, both on 9 February, and Stewartby on 24 February. At South Mills NR there were wintering birds on 14 February and 1 March, the former being a bird showing characters of the northern/eastern forms *abietinus/tristis* and the latter a grey-green *collybita/abietinus* type. Presumed migrants were at Priory CP and Bramingham Wood on 13 March, Stanbridgeford 18 March and Blows Downs, Stopsley and Willington GP 19 March. There were two breeding pairs at Priory CP, whilst 12 at the Old Warden CBC was an average number. Main autumn passage at South Mills NR was from 12 September to 8 October and 48 birds ringed during the year was the highest ever total. In the second winter period recorded only at Blunham (7 November), County Hall Bedford (17 December) and Priory CP (seven dates between 18 October and 28 December).
- Willow Warbler** *P. trochilus* The first records were at Tiddenfoot CP on 5 April and Priory CP on 7 April, with a widespread arrival from 10/11 April. Main spring passage at South Mills NR occurred between 19 April and 19 May with a total of 52 birds ringed, and four pairs bred on and around the site. At Priory CP 27 males held territory, but at the Old Warden CBC a long term decline continued with only four pairs the lowest ever total, and numbers at Waterloo Thorns CES were also down. Juvenile dispersal/autumn passage at South Mills NR was prolonged with 69 birds ringed between June and September, and the last were six at Priory CP on 19 September.
- Goldcrest** *Regulus regulus* The only records submitted were from sites away from the main woodland breeding areas. Three were trapped at South Mills NR in spring and another in September before an autumn influx with five on 6 October and another on 8 October. The latter birds were followed by similar influxes at Stewartby CP, with at least eight on 11 October, and at Priory CP from 11 to 17 October, with about ten on the latter date. It would be interesting to have ringing data on the origin of these influxes. Finally two more trapped at South Mills NR on 15 November accompanied a flock of Long-tailed Tits.
- Spotted Flycatcher** *Muscicapa striata* The first were two at Whipsnade Zoo on 12 May, quickly followed by other arrivals at Luton Cemetery and Blunham on 13 May and Blows Downs and Newton Bromswold on 15 May. Only two pairs bred at Priory CP and other observers commented that it was a poor year for the species. The last was at Stopsley on 27 September.
- Pied Flycatcher** *Ficedula hypoleuca* A male at Blows Downs on 24 April was seen by many observers (TD, PSm *et al.*).
- Long-Tailed Tit** *Aegithalos caudatus* Eleven pairs bred at the Old Warden CBC maintaining recent good numbers, though numbers at Waterloo Thorns CES were slightly down. About four pairs bred at Priory CP and the largest number recorded was 46 in two parties at that site on 18 August.
- Marsh Tit** *Parus palustris* Seven pairs at the Old Warden CBC maintained the recent average, and also reported from Houghton Regis, Pegsdon Hills, Woburn, Flitwick, Flitwick Plantation, Maulden Woods, Marston Thrift, Shuttleworth and Potton.
- Willow Tit** *P. montanus* Breeding season reports from Pegsdon Hills, Woburn, Flitwick Moor, Holcot Wood and Temple Wood Sharnbrook, and in winter also from Kingshoe Wood, Maulden Woods and Chicksands Wood.
- Coal Tit** *P. ater* The only records noted were for birds at unusual sites away from the main populations in coniferous woodland. One at Stewartby CP on 26 January was a site first for the observer, there were two on the Ouse Embankment in Bedford on 18 April and one at Priory CP on 6 September was only the third record for this site.
- Blue Tit** *P. caeruleus* At the Old Warden CBC 37 pairs were down from 46 in 1991 but still at about average for the last ten years, but results at Waterloo Thorns CES were poor with both adults and juveniles down about 60% and the former at only a fifth of their 1988 numbers.
- Great Tit** *P. major* Numbers at Waterloo Thorns CES were down, though not by as much as for Blue Tit, whilst 17 pairs at the Old Warden CBC were also down from 21 in 1991, and the lowest since 1983.
- Nuthatch** *Sitta europaea* Records received from only six sites certainly represented severe under-recording. Some penetration of the Luton urban area was noted at Wardown Park, Popes Meadow and Legrave Marsh.

- Treecreeper** *Certhia familiaris* Five pairs at the Old Warden CBC maintained the recent average, and also noted in the breeding season from the Swiss Gardens and Pertenhall, but as usual relatively few records submitted.
- Jay** *Garrulus glandarius* As in previous years, most records were only submitted for sites where the species is unusual. One at Chimney Corner CIP on 26 April was a site first for the observer, whilst an October influx included two at Green End Kempston on the 5th, one at Stewartby CP and four over Dunstable SW on the 11th and one at Rookery CIP and at least ten in Luton Hoo on the 18th. There were further records from unusual sites at Stewartby on 15 November and Chimney Corner CIP again on 13 December.
- Magpie** *Pica pica* The only cards received for this ubiquitous and increasing species were for large parties, with 11 at Great Barford South GP on 25 January and 17 at Galley Hill on 28 October.
- Jackdaw** *Corvus monedula* Hundreds were noted roosting with Rooks at Bromham Hall Wood in both winter periods, and other good counts were 150 at Turvey Abbey Park on 19 March and 100 at Luton Hoo on 30 March.
- Rook** *C. frugilegus* Hundreds were noted roosting with Jackdaws at Bromham Hall Wood in both winter periods, with another roost suspected at Wootton Wood. Two new Rookeries were established in the south of the County, with 26 nests at New Bedford Road Luton and 40 nests in Whipsnade Zoo, the latter the first large numbers breeding at the site for about twenty years. The regular Rookery at Stewartby, which presumably gave Rookery CIP its name, had 51 nests, whilst the largest Rookery reported was of 80+ nests at Newton Bromswold. Counts of 487 over Flitwick Moor on 13 October and 300 near Eversholt on 31 October were also of note.
- Carrion Crow** *C. corone* An individual with white markings, in the form of white wingbars and rump, was in the Bromham area in the first half of the year. As noted in the 1991 Report, such marking are not unusual. A count of 90+ at Whipsnade Zoo on 2 March was notable for this not very gregarious species, whilst one was observed to kill a Marmot at Bison Hill on 15 May (presumably within the grounds of Whipsnade Zoo, as Marmots are not indigenous to Bedfordshire).
- Starling** *Sturnus vulgaris* Roost movements over Priory CP peaked at c. 50,000 in November, whilst another large roost at Toddington Service Area in October numbered many thousands. Despite these large numbers at winter roosts, there has been a decline as a breeding species in some rural areas, and only one pair bred on the Old Warden CBC (the peak was 42 pairs in 1973). A partial albino with white rump and tail was noted at East Hyde on 9 February.
- House Sparrow** *Passer domesticus* Once again no record cards were received for this species, which however remains ubiquitous in urban areas although there may have been slight long term declines.
- Tree Sparrow** *P. montanus* Birds were noted in the breeding season, or parties including fledged juveniles were seen, at East Hyde, Eaton Bray, Dunstable SW, Totternhoe, Galley Hill, Grovebury Farm SP, Battlesden Lake, Potsgrove, Aspley Guise, New Inn Farm Silsoe, Lower Gravenhurst, Boughton End, Marston Wood End, Holcot Wood, Shefford, Cotton End, Shortstown, Cardington, Riseley, Lower Shelton, Newton Bromswold and Yelden. No breeding site held more than five pairs, and for the first time in many years there were no records at Whipsnade Zoo. Birds were also seen outside the breeding season at Sewell, Warden Hill, Barton, Sundon, Tebworth Marsh and Brogborough Manor Farm, and the largest parties recorded were 20 at Boughton End on 26 January and 20 at Warden Hill on 19 September.
- Chaffinch** *Fringilla coelebs* At Priory CP 22 pairs were up slightly from 19 in 1991, whilst 41 pairs on the Old Warden CBC maintained the recent average. At Waterloo Thorns CES numbers of adults ringed were well down, but juveniles were slightly up. Visible passage was noted at Priory CP in October with a maximum of 88 passing west on 11 October.
- Brambling** *F. montifringilla* A poor year with no large numbers. In the first winter period recorded in January and February from Luton Hoo, Legrave Marsh, Wavendon Heath, Brogborough Manor Farm, Stewartby CP, Broom, The Lodge and Bolnhurst, mostly only in ones and twos with the largest party six at Brogborough Manor Farm. Some signs of passage in late

March and April with ten at Chicksands Wood on 28 March and other records from Whipsnade Zoo, Ridgmont, Maulden Wood, Haynes, Old Warden and Willington GP and also again at Stewartby CP and The Lodge, the last being three between Ridgmont and Woburn on 22 April. In the second winter period the first were three at Whipsnade Zoo on 29 September, with October records from Eaton Bray and Priory CP where 16 passed west on 17 October, three at Pegsdon Hills in November, and finally a party of up to seven near The Lodge in December.

- Greenfinch** *Carduelis chloris* Only three pairs at the Old Warden CBC was the lowest ever total (compared with 26 in 1975), and for the first time ever none were caught at Waterloo Thorns CES. Outside the breeding season the largest parties reported were 100+ roosting at Stewartby in March and 50 at Roxhill Manor Farm in December.
- Goldfinch** *C. carduelis* One pair at the Old Warden CBC was the lowest ever, compared to 17 in 1975. Outside the breeding season parties of c. 100 were recorded at Priory CP in March and August and c. 130 roosted at County Hall Bedford in March.
- Siskin** *C. spinus* In the first winter period the largest parties were 120 at Legrave Marsh on 21 January, c. 150 at Swiss Garden on 1 February, 180+ at Flitwick Plantation on 15 March, 130+ at Kingshoe Wood on 28 March and c. 100 at Warden Warren on 8 April. Smaller parties were also recorded at East Hyde, Luton Hoo, Stopsley, Legrave Marsh, Stockgrove CP, Battlesden Lake, Eversholt, Horse Moor Farm Woburn, Aspley Heath, Flitwick Moor/ Flitwick, Brogborough Lake, Stewartby CP, Bromham, Kempston, Priory CP, Southill, Blunham, Felmersham NR and Harrold. In the Aspley Heath area two pairs were noted in display flight on 11 April and a male was still present at one of the sites on 8 May, whilst another was in a Woburn garden on 9 May, and calling birds were seen over Whipsnade Zoo on 8 April and 25 June. Breeding in the County seems a distinct possibility, though it would be very difficult to prove. Less numerous and widespread in the second winter period; arrivals began from 10 October at Felmersham NR, the largest party was 90 at Flitwick Moor on 28 November, and also recorded from Luton Hoo, Legrave Marsh, Dunstable SW, Eversholt, Woburn, Southill, Brogborough Lake, Kempston and Priory CP.
- Linnet** *C. cannabina* Five pairs on the Old Warden CBC was the highest figure since 1986. Outside the breeding season the largest parties noted were up to 180 at Willington GP from January to March, 123 at Brogborough No 2 CIP in January, 120 at Darley (near Luton Airport) in August and c. 100 at Dunstable SW in September and October.
- Twite** *C. flavivestris* After a possible sighting in January, screening of the large Linnet flock at Willington GP finally resulted in the definite identification of three Twite on 14 March (DHB *et al.*), the first record in the County since 1986. These were subsequently seen by many observers, with two still present on 21 March.
- Redpoll** *C. flammea* No large flocks were noted, but parties of between 15 and 20 were recorded at Eversholt Lake, Wavendon Heath, Flitwick Moor, Old Warden and The Lodge.
- Crossbill** *Loxia curvirostra* A poor year after the 1990/91 influx, with a return to normal numbers. Three in Maulden Wood on 2 January increasing to five on the 12th were followed by four at Old Wavendon Heath on 29 February, a male at Warden Warren on 8 April, this year's largest party of eight at Sandy on 10 April, three at Charle Wood on 17 May and finally two females in a garden at Stopsley Way Luton on 29 August. Many of the records earlier in the year fell within the species' breeding season, but no evidence of breeding was reported.
- Bullfinch** *Pyrrhula pyrrhula* Numbers at Waterloo Thorns CES were down slightly for adults and rather more for juveniles. This is another passerine species which (certainly subjectively), seems to have suffered a general decline, though not as great as that of e.g. Tree Sparrow, but it can now be quite difficult to find in some areas. Unfortunately, as it has always been considered a common species by most observers, relatively few records have been submitted in the past to provide a baseline for comparison, and it would be useful if more careful monitoring of numbers could be undertaken at sites where it occurs regularly.
- Hawfinch** *Coccothraustes coccothraustes* A very poor year for this species, which seems to have suddenly and dramatically declined almost to the point of extinction in the County, though it can be so elusive that it is almost impossible to prove absence from an area. Only recorded from three sites, with a party of seven at Maulden Wood on 12 January (KMS), and four or

five reported to BIS at the same site in March, one in flight over Wardown Park on 6 June (MP), and a series of records from Luton Hoo on four dates between 31 May (a pair) and 5 July when a party of three were seen (AJL).

Yellowhammer *Emberiza citrinella* At the Old Warden CBC only five pairs bred, down from 11 in 1991 and another lowest ever figure. (Peak numbers were 25 pairs as recently as 1987.)

Elsewhere the largest parties noted were 80 at Shuttleworth Park in February and 100 east of Stopsley Common in December.

Reed Bunting *E. schoeniclus* There were 15 territorial males at Priory CP. At the Houghton Regis ChP roost, maxima of over 400 were present in the first winter period and 750 in the second winter period, and a Belgian ringed bird was trapped on 31 December.

Corn Bunting *Miliaria calandra* Though this species has suffered serious declines nationally, it continues to be widely recorded in the County in numbers comparable to those of previous years. Of two local breeding populations which have been monitored fairly regularly, at least 10 pairs in the 'Biddenham Loop' area was typical of numbers over the last ten years, though up to 10 singing males on Stopsley Common showed some decline since the mid 1980s, probably because of habitat loss due to development. A total of 44 singing males were found in eight tetrads in the Eaton Bray area in July. A flock of 100 were present in the Stopsley Common area in December, whilst elsewhere there were c. 70 at Elstow Storage Depot and 33 at Sewell in January and 45 at Sharpenhoe in February. Roost sites which have been regularly monitored gave maxima of 141 at Priory CP in January, and 130 at Houghton Regis ChP in the first winter period and 170 in the second winter period, whilst a count of 36 came from the smaller roost at Brogborough Lake on 18 February. Many more records were submitted for this species this year, and these will help to flesh out data acquired in the national survey taking place in 1993. Please keep up the good work!

BIRDS NEW TO BEDFORDSHIRE (1992)

Red-rumped Swallow *Hirundo daurica* South Mills, 19th May 1992

This description of a Red-rumped Swallow seen by Paul Oldfield at South Mills Ringing Station is the first record of the species in Bedfordshire. This record has been accepted by the British Birds Rarities Committee.

"Having just completed processing a number of birds from the last net round I walked out of the Ringing Hut towards my normal vantage point overlooking the pit. As I did this three swallows flew between myself and the marsh. One of them clearly possessed a white rump. I then hurried to my vantage point where my scope and bins were and managed to obtain some excellent views of the Red-rumped Swallow. The following description and sketch* have been copied from the Ringing Log:

The bird appeared somewhat broader winged than Swallow though this was partly due to the bird gliding more often for reasonably long periods. The tail at this time was always fanned. Blue cap. Orange collar and face (ear coverts to collar). Mantle and wing coverts same colour as Swallow. Underparts off-white. Underwing uniform off-white/dusky. Primaries appearing brownish in some light angles. Orange lower back and white rump. Black upper and under-tail covers with no white. Tail streamers somewhat shorter than Swallow and broader.

The bird was watched for about 15-20 minutes in excellent light at distances between 60-150 metres. I had to interrupt the viewing to do a net round and after c. 15 minutes returned to my vantage point but unfortunately I could not relocate the bird."

(* Unfortunately Paul's original sketch had to be submitted to the BBRC and the photocopy retained for the County archives was not of adequate quality to reproduce.)

OTHER RECORDS – BIRDS KNOWN OR CONSIDERED TO BE OF CAPTIVE ORIGIN:

- Whooper Swan** *Cygnus cygnus* A total of three at Blunham GP on 25 January were presumably all feral birds.
- Black Swan** *C. atratus* Up to three at Dunstable SW between May and October, and presumably one of the same briefly at Houghton Regis ChP on 6 June.
- Bar-headed Goose** *Anser indicus* One in the Stewartby/Millbrook/Coronation area from January to August, and presumably a different bird at East Hyde in January and February and Luton Hoo in April.
- Snow Goose** *A. caerulescens* One at East Hyde 19 January.
- Canada × Greylag Goose** *Branta × Anser* See remarks under Canada Goose.
- Ruddy Shelduck** *Tadorna ferruginea* A female at Woburn Lake on 16 February and possibly a different bird at the same site 12 September.
- Wood Duck** *Aix sponsa* Recorded on the Ouse in Bedford throughout the year, with a pair up to August and probably a different pinioned female up to the year end. More remarkably, at Ickwell a pair bred producing six young.
- Bahama Pintail** *Anas bahamensis* One at Harrold CP 30 December may have been present for about three weeks.
- Eider** *Somateria mollissima* A male was present at Wyboston Lakes from 15 November into 1993 (GDP *et al.*). Though at first thought to be a wild vagrant, presumably the same bird was still present on 3 August 1993, and in view of its extremely long stay, lasting throughout the summer, it must be considered of doubtful origin. Rather surprisingly, this species is sometimes kept in quite small wildfowl collections.
- Peacock** *Pavo* A male at Great Oaks Wood on 12 June was not too remarkable, but does a later report of a female and two young at the same site presage a vocal addition to the County's feral species?
- Golden Pheasant** *Chrysolophus pictus* One in a Kempston garden on 25 April can probably be safely assumed to be neither a feral wanderer from the East Anglian populations nor a survivor of the one-time Bedfordshire feral birds.
- Chukar** *Alectoris chukar* One at Whipsnade Zoo 20 March was the only record submitted for this species, but see remarks under Red-legged Partridge.



Red-headed Bunting, Stewartby 10.5.1992

(Photo: M. Palmer)

- Scarlet Macaw** *Ara macao* One occasionally reported in the Ashburnham Road area of Bedford is a free-flying captive bird (and a spectacular and initially confusing sight).
- Amazon Parrot sp.** *Amazona* sp. One at Woburn 10 November.
- Cockatiel** *Nymphicus hollandicus* Several escapes, at Barley Brow in April, Bromham in June, central Bedford in July and East Hyde in September.
- Budgerigar** *Melopsittacus undulatus* The survival chances of two at large in Ampthill on 6 February cannot have been good.
- Eagle Owl** *Bubo bubo* One at Battlesden 22 April and presumably the same Tebworth 25 April.
- Red-headed Bunting** *Emberiza bruniceps* A first summer male at Stewartby CP on 9 and 10 May was seen by many observers (T Plosjowski, MJP *et al.*), and there was no doubt as to its identification. However, birds of this species have always been considered to be of suspect origin and it is not on the official British list. It must however have the potential to occur as a wild vagrant, and whether there have been changes in numbers imported and kept in captivity which might lead to eventual re-consideration of its status, only time will tell. Although signs of feather damage and a foot injury were claimed by a few observers, these were not noted by most observers or apparent in photographs.

UNVERIFIED RECORDS

Records as listed below were variously reported to BIS, the Hobby or elsewhere, but adequate documentation to justify publication in the Report was not received. Further information would be welcome.

Red-necked Grebe, Priory CP, 15 June; Bean Goose, a party, Stewartby CP; Hen Harrier, Barton Cutting, 1 January; Osprey, Priory CP, 2 and 10 July, Houghton Regis ChP, 4 September; Mediterranean Gull, Brogborough Lake, 8 February and a 1st winter 20 and 22 February; Coronation CIP, two 2nd summers 28 April; Ring-billed Gull, Rookery CIP, 3 March; Little Tern, Stewartby CP, 3 June; Ring-necked Parakeet, Blows Downs, 3 January, 4 March, 16 March and 10 May (it should be pointed out that a full description is required for this species due to the possibility of confusion with other escaped Parakeets, and a verbal description of this bird suggests that it had yellow underwing coverts implying some other species); Dipper, Priory CP, 17 August; Firecrest, Blows Downs, 27 and 28 April, Maulden Woods, 30 April. In addition, notes for the following were submitted too late to circulate in time for publication: Bewick's Swan, party of eight adults, Rookery CIP, 26 December.

ADDITIONS TO 1991 REPORT

- White-fronted Goose** *Anser albifrons* A group of two adults and two first winters of this species, forming a typical family party, flew north over Luton Hoo on 17 February 1991 (AJL). There seems little doubt that such family parties must be wild birds.
- Brent Goose** *Branta bernicla* A party of 15 briefly visited Coronation CIP in misty conditions on the morning of 17 November 1991 (MJP). All but two lacked the neck bands present on adult birds, and as would be expected, all were of the Dark-bellied race. This is one of the largest parties of this species ever recorded in the County.
- Hen Harrier** *Circus cyaneus* A record of a ringtail seen from the Leighton Buzzard bypass near Dunstable SW on 23 December 1991 (AJL).
- Montagu's Harrier** *C. pygargus* A 1st summer bird in the Broom area was seen by many observers between 26 and 28 July, and had probably been present in the area since at least 18 July (M Langman *et al.*). No description was submitted in time to allow publication in the 1991 report—a regrettable but not uncommon occurrence with such multi-observer records where all assume that someone else has done the task. The finder considered the bird to be a 1st summer female, but it was thought by some observers to show grey plumage tones suggesting the possibility of a 1st summer male.
- Radde's Warbler** *Phylloscopus schwarzi* As anticipated, the October 1991 individual was accepted by the BBRC.
- Lapland Bunting** *Calcarius lapponicus* A male at South Mills NR on 18 October 1991 was only the second County record (PO). A species which could turn up more often if observers are alive to the possibility of its occurrence.

DAVE BALL

BEDFORDSHIRE COUNTY BIRD LIST (1993)

The Bedfordshire County List has recently been reviewed by the County Recorder and County Rarities Panel, a task last performed in 1986. In recent years the problem of records of unusual species being lost because observers do not submit notes has become more severe, and there has been a regrettable tendency on the part of even some experienced observers to give rather perfunctory descriptions. Some of this reluctance may have been caused by the requirement to submit full notes for species which are unusual in Bedfordshire but easily seen at coastal localities, and to cater for such species a new category of 'Minor Local Rarity' has been introduced. Records for species in this category will be submitted on a card of the same size as a standard record card, one card for each record of that species submitted by an observer. Species in this category will be those that are common in national terms (and therefore familiar to observers), but unusual, though regular, in Bedfordshire. Species which are nationally scarce, or genuinely rare in Bedfordshire, or which present identification problems, will still require a full description.

The record card for a minor rarity will assume that the observer has correctly identified the species, but will ask for numbers, exact locality, dates and times, other observers present, and all available information on age, sex and any other plumage features which will allow the bird(s) to be individually identified as far as possible and the record tied in with other records of that species. Where the record seems unusual, the Recorder (or Rarities Panel through the Recorder) may request full notes.

With the introduction of the new 'Minor Local Rarity' category, an improvement will be expected in the standard of submissions for species for which full notes are still required, and inadequately documented records will not be published. It is a far less serious error to lose a few genuine records (which is after all only equivalent to no observer seeing the bird, which must often happen anyway), than for incorrect reports to be published, as this can permanently distort the historical record.

For rarities it will greatly help the work of the Rarities Panel if notes can be submitted as soon as possible after the event. This is not at present true for record cards (though this may change if we move to a computerised recording system), but it will be helpful to have records as soon after the end of December as possible, and **it is vital to receive all record cards by the end of February at the absolute latest.** It is also helpful if observers submitting more than a few records can do so on standard record cards, as records submitted in letters must be transcribed to cards. Record cards are heavy and expensive to post in worthwhile numbers, and should be available at all indoor Bird Club meetings and often also from Rarity Panel members or Club Officers, so it will help if they can be picked up in person. Finally, I will be extremely pleased if observers can avoid putting different species on the same card. In the 1992 Report, apart from those records nearly missed as a result (and overlooking those that have still been missed), seven Common Scoters at Brogborough nearly found their way onto the historical records as Grey Plovers!

The categories are as follows:

The Recorder requires records of large numbers and unusual dates or localities for all species. For 'common' species, regular recording in a fixed area is also particularly valuable for monitoring changes in population or status. Other categories are denoted by the following codes:

- Dates — Arrival and departure dates required by Recorder
- Breed — All breeding records required by Recorder
- All — All records required by Recorder (species in this category which may breed are highlighted as 'All/Breed' and breeding records for these species are particularly important)
- Brief — Brief notes required by County Recorder
- Full — Full written description required by County Rarities Panel
- BBRC — Full written description required by British Birds Rarities Committee; please submit through County Recorder

Species	Records	Notes	Species	Records	Notes
Red-throated Diver	All	Full	Long-tailed Duck	All	Full
Black-throated Diver	All	Full	Common Scoter	All	Brief
Great Northern Diver	All	Full	Velvet Scoter	All	Full
Little Grebe	Breed		Goldeneye	Dates	
Great Crested Grebe	Breed		Smew	All	Brief
Red-necked Grebe	All	Full	Red-breasted Merganser	All	Full
Slavonian Grebe	All	Full	Goosander	All	
Black-necked Grebe	All	Full	Ruddy Duck	All/Breed	
Fulmar	All	Full	Honey Buzzard	All	Full
Manx Shearwater	All	Full	Black Kite	All	BBRC
Storm Petrel	All	Full	Red Kite	All	Full
Leach's Petrel	All	Full	White-tailed Eagle	All	BBRC
Gannet	All	Full	Marsh Harrier	All	Full
Cormorant	Breed		Hen Harrier	All	Full
Shag	All	Full	Montagu's Harrier	All	Full
Bittern	All	Full	Goshawk	All	Full
Night Heron	All	BBRC	Sparrowhawk	Breed	
Little Egret	All	Full	Buzzard	All	Brief
Grey Heron	Breed		Rough-legged Buzzard	All	Full
Purple Heron	All	Full	Osprey	All	Full
White Stork	All	Full	Kestrel	Breed	
Mute Swan	Breed		Merlin	All	Full
Bewick's Swan	All	Full	Hobby	All/Breed	
Whooper Swan	All	Full	Peregrine	All	Full
Bean Goose	All	Full	Red-legged Partridge	Breed	
Pink-footed Goose	All	Full	Grey Partridge	All/Breed	
White-fronted Goose	All	Brief	Quail	All/Breed	Brief
Greylag Goose	Breed		Pheasant		
Canada Goose	Breed		Golden Pheasant	All	Full
Barnacle Goose	All/Breed		Lady Amherst's Pheasant	All/Breed	
Brent Goose	All	Full	Water Rail	All/Breed	
Egyptian Goose	All	Full	Spotted Crake	All	Full
Shelduck	All/Breed		Corncrake	All	Full
Mandarin	All/Breed		Moorhen		
Wigeon	Dates		Coot		
Gadwall	Breed		Oystercatcher	All	
Teal	Breed		Black-winged Stilt	All	BBRC
Green-winged Teal	All	Full	Avocet	All	Full
Mallard			Stone Curlew	All	Full
Pintail	All	Brief	Collared Pratincole	All	BBRC
Garganey	All/Breed	Full	Little Ringed Plover	All/Breed	
Blue-winged Teal	All	BBRC	Ringed Plover	All/Breed	
Shoveler	Breed		Kentish Plover	All	Full
Red-crested Pochard	All	Full	Dotterel	All	Full
Pochard	Breed		American Golden Plover	All	BBRC
Ring-necked Duck	All	BBRC	Golden Plover	All	
Ferruginous Duck	All	Full	Grey Plover	All	Brief
Tufted Duck	Breed		Lapwing	Breed	
Scaup	All	Full	Knot	All	Full
Eider	All	Full	Sanderling	All	Full

Species	Records	Notes	Species	Records	Notes
Little Stint	All	Full	Guillemot	All	Full
Temminck's Stint	All	Full	Razorbill	All	Full
Baird's Sandpiper	All	BBRC	Little Auk	All	Full
Pectoral Sandpiper	All	Full	Puffin	All	Full
Sharp-tailed Sandpiper	All	BBRC	Feral Pigeon		
Curlew Sandpiper	All	Full	Stock Dove		
Purple Sandpiper	All	Full	Woodpigeon		
Dunlin	All		Collared Dove		
Ruff	All		Turtle Dove	Dates	
Jack Snipe	All		Ring-necked Parakeet	All	Full
Snipe	Breed		Cuckoo	Dates	
Great Snipe	All	BBRC	Yellow-billed Cuckoo	All	BBRC
Woodcock	All/Breed		Barn Owl	All/Breed	
Black-tailed Godwit	All	Brief	Little Owl	All/Breed	
Bar-tailed Godwit	All	Brief	Tawny Owl	Breed	
Whimbrel	All	Brief	Long-eared Owl	All/Breed	Brief
Curlew	All/Breed		Short-eared Owl	All	Brief
Spotted Redshank	All	Brief	Nightjar	All/Breed	
Redshank	All/Breed		Swift	Dates	
Greenshank	All		Kingfisher	All/Breed	
Green Sandpiper	All		Bee-eater	All	Full
Wood Sandpiper	All	Brief	Roller	All	BBRC
Common Sandpiper	All		Hoopoe	All	Full
Turnstone	All	Brief	Wryneck	All	Full
Wilson's Phalarope	All	BBRC	Green Woodpecker		
Red-necked Phalarope	All	Full	Great Spotted Woodpecker		
Grey Phalarope	All	Full	Lesser Spotted Woodpecker	All/Breed	
Pomarine Skua	All	Full	Woodlark	All/Breed	Full
Arctic Skua	All	Full	Skylark		
Great Skua	All	Full	Shorelark	All	Full
Mediterranean Gull	All	Full	Sand Martin	Dates/Breed	
Little Gull	All	Brief	Swallow	Dates	
Sabine's Gull	All	Full	Red-rumped Swallow	All	BBRC
Black-headed Gull	Breed		House Martin	Dates	
Ring-billed Gull	All	Full	Tree Pipit	All/Breed	
Common Gull	Dates		Meadow Pipit	Breed	
Lesser Black-backed Gull	Breed		Water Pipit	All	Full
Yellow-legged Gull	All	Full	Rock Pipit	All	Full
Herring Gull	Dates/Breed		Yellow Wagtail	Dates	
Iceland Gull	All	Full	all other races	All	Full
Glaucous Gull	All	Full	Grey Wagtail	All/Breed	
Great Black-backed Gull	Dates		Pied Wagtail		
Kittiwake	All	Brief	White Wagtail	All	
Caspian Tern	All	BBRC	Waxwing	All	Full
Sandwich Tern	All	Brief	Wren		
Common Tern	Breed		Duncock		
Arctic Tern	All	Brief	Robin		
Little Tern	All	Full	Nightingale	All/Breed	
Black Tern	All		Bluethroat	All	Full
White-winged Black Tern	All	BBRC	Black Redstart	All/Breed	Brief

Species	Records	Notes	Species	Records	Notes
Redstart	All/Breed		Tree Sparrow	All/Breed	
Whinchat	All/Breed		Chaffinch		
Stonechat	All/Breed		Brambling	All	
Wheatear	All/Breed		Serin	All	Full
Ring Ouzel	All		Greenfinch		
Blackbird			Goldfinch		
Fieldfare	Dates/Breed		Siskin	All/Breed	
Song Thrush			Linnnet		
Redwing	Dates		Twite	All	Full
Mistle Thrush			Redpoll		
Grasshopper Warbler	All/Breed		Arctic Redpoll	All	BBRC
Sedge Warbler	Dates		Crossbill	All/Breed	
Reed Warbler	Dates/Breed		Bullfinch		
Subalpine Warbler	All	BBRC	Hawfinch	All/Breed	
Lesser Whitethroat	Dates		Lapland Bunting	All	Full
Whitethroat	Dates		Snow Bunting	All	Full
Garden Warbler	Dates		Yellowhammer		
Blackcap	Dates		Cirl Bunting	All	Full
Radde's Warbler	All	BBRC	Reed Bunting		
Wood Warbler	All/Breed	Brief	Corn Bunting	Breed	
Chiffchaff	Dates				
Willow Warbler	Dates				
Goldcrest					
Firecrest	All	Full			
Spotted Flycatcher	Dates				
Pied Flycatcher	All	Brief			
Bearded Tit	All	Full			
Long-tailed Tit					
Marsh Tit	Breed				
Willow Tit	All/Breed				
Coal Tit					
Blue Tit					
Great Tit					
Nuthatch					
Treecreeper					
Penduline Tit	All	BBRC			
Golden Oriole	All	Full			
Red-backed Shrike	All	Full			
Great Grey Shrike	All	Full			
Woodchat Shrike	All	BBRC			
Jay					
Magpie					
Jackdaw					
Rook					
Carriion Crow					
Hooded Crow	All	Brief			
Raven	All	Full			
Starling					
Rose-coloured Starling	All	BBRC			
House Sparrow					

The following species have not been recorded in the county since 1946:

American Bittern	All	BBRC
Little Bittern	All	BBRC
Spoonbill	All	Full
Little Crake	All	BBRC
Great Bustard	All	BBRC
Pallas's Sandgrouse	All	BBRC
Dipper	All	Full
Marsh Warbler	All	Full
Red-breasted Flycatcher	All	Full
Lesser Grey Shrike	All	BBRC
Two-barred Crossbill	All	BBRC

It is considered doubtful that the following species have been recorded wild in the county, but records are required to assess status:

[Snow Goose]	All	Full
[Ruddy Shelduck]	All	Full
[Wood Duck]	All/Breed	Full
[Golden Eagle]	All	Full
[Chukar]	All	
[Eagle Owl]	All	BBRC

DUNSTABLE SEWAGE TREATMENT WORKS A BRIEF HISTORY

by Paul Trodd (Honorary Warden)

The disposal of sewage at Dunstable Sewage Treatment Works, situated on the northern outskirts of the town near Thorn, probably goes back to the latter part of the Victorian era when human waste would have been spread out to dry on the surrounding fields. By the 1940s effluent was pumped to site and flooded out through a single pipe to form a shallow lake of water and sludge with obvious attractions to migrating waders in what was, in retrospect, the halcyon days of the sewage farm for the few local birdwatchers who were active at that time. However, in the late 1950s the treatment process was changed to a more controlled and mechanised system that included the utilisation of four shallow settlement lagoons, which are still with us today.

The 1980s saw a period of rapid growth in the Dunstable area, both industrial and housing, which prompted Anglian Water to expand and upgrade the works in order to meet the increased demand. The civil engineering project which followed, to install the new "Farmgas" process, was on a large scale and commenced in July 1990 with the official opening ceremony on 19 March 1993. Prior to, and during the reconstruction period, the Society, through the good offices of Anglian Water and their contractors, was actively involved in negotiations to construct a purpose-built wader scrape on a redundant part of the site adjacent to the existing settlement lagoons.

The Society's birdwatchers have a past history of recording at this locality with entries in *The Bedfordshire Naturalist* going back to the 1950s, and so it was fitting that local naturalist Bill Drayton set the ball rolling in the late 1980s, convincing the water authority of the importance of the site for wildlife in general, and migrant birds in particular. When Bill moved away from the county towards the end of 1991 a steering committee was formed comprising Dave Anderson, Don Green, Rob Dazley and myself to see the project through to fruition. Even allowing for the fact that Anglian Water were spending £11 million on modernizing the plant I still feel that Bill and the rest of us sewage works aficionados were surprised at the final outcome.

South Bedfordshire now has, at long last, a small area of habitat created specifically for birds. Measuring 150 × 50m it will be a significant addition to the pulling power of the four existing lagoons and, with control over the water level, should allow optimum wader conditions throughout the passage seasons — frustrating flyovers will now be a thing of the past at Dunstable Sewage Works! On 21 July 1992 the scrape was flooded for the first time, with a hide being installed by December (opened officially by Bill Drayton on 19 March 1993). Work parties in early 1993 set about capping the islands with shingle and stone of varying dimensions and on 14 March, shortly after the final session of the winter, a Little Ringed Plover alighted on the shingle-capped island equalling the earliest county record of this classic breeding wader!

With the Society's birdwatchers firmly in control of access to the site and conservation policy these are exciting times indeed. Already improved coverage has led to a number of interesting records and it now seems certain that the birds of Dunstable Sewage Treatment Works will continue to feature prominently in the county bird reports for years to come. Finally, I would like to thank Rob Dazley, Don Green and Barry Squires for comments on an early draft of this article.

Address: 17 Northall Road, Eaton Bray, Beds LU6 2DQ



Official opening of the Drayton Hide, Dunstable Sewage Treatment Works, 19 March 1993
L to R — Bill Drayton (BNHS), David Gooda (AW), David Anderson (BNHS),
Rob Dazley (BNHS), Nina Sage (AW), Paul Trodd (BNHS), Don Green (BNHS),
Pete Fensome (AW)

(Photo: Anglian Water)

BROMHAM HERONRY 1992

by Peter Almond

The Bromham Heronry is on private land and I have the owner's permission to visit and observe the herons. I have been doing this since 1988, when I learnt that the heronry was not being recorded. In 1988 I recorded five nests and extracts from my notes were published in the Bird Report (Trodd 1989). Since then the number of nests in the colony has gradually increased from five to twelve in 1992.

I usually visit the site about once a week and stay about an hour on each occasion. I am very careful not to cause disturbance and you will see from the recent records that the herons do not fly away.

The results of my observations are reported to the B.T.O. by completing a "Heronries Census" card, a colony record sheet and a copy of the table which I submit to the County Recorder. The table in this report is for the year 1992.

In 1992 there were nine nests in oak trees: Five in one tree, two in another and a single one in two other trees, all 40ft to 50ft above ground level. There were also two nests in a poplar tree, about 70ft high and one in a plane tree, about 50ft high. Eleven of the twelve nests produced 32 young birds of which 29 should have fledged. There were no other nests in the immediate vicinity of the herons.

REFERENCES

TRODD, P. 1989 Birds Report of the Recorder *Bedf. Nat* **43** 36-37

Address: 22 Northampton Road, Bromham MK43 8PE

Date	Nest 1	Nest 2	Nest 3	Nest 4	Nest 5	Nest 6
	No. 2 in 1990 No. 1 in 1991	No. 2 in 1988 No. 3 in 1989 No. 3 in 1990 No. 2 in 1991	No. 3 in 1988 No. 4 in 1989 No. 4 in 1990 No. 3 in 1991	No. 4 in 1991	No. 5 in 1991	No. 5 in 1990 No. 6 in 1991
1/3	1 adult standing on nest.	1 adult sitting on nest.	1 adult sitting on nest.	1 adult sitting on nest & 1 standing near.	1 adult standing on nest.	1 adult standing on nest.
21/3	1 adult stood up & flew away.	1 adult sitting, stood up & turned eggs.	1 adult sitting.	1 adult sitting.	No Heron seen.	1 adult sitting, stood up & turned eggs.
28/3	No Heron seen.	1 adult sitting, stood up & chased off Magpie.	1 adult sitting.	No Heron seen.	2 adults standing on nest.	1 adult sitting, stood up & did nest maintenance.
4/4	No Heron seen.	1 adult sitting, stood up & preened.	1 adult sitting.	1 adult sitting & then stood up.	1 adult sitting, stood up & turned eggs.	2 adults standing on nest.
11/4	1 adult standing on nest, flew off, chased from another & returned to nest.	1 adult standing & 3 very small young fed. 2nd adult flew in & change over.	1 adult standing on nest, 3 young seen, larger than in Nest 2.	1 adult sitting & then stood up.	1 adult sitting & then stood up.	1 adult standing on nest & then sat down.
18/4	1 adult standing on nest, 2nd flew in - change over & sat down.	1 adult standing on nest, 2nd adult flew in, 3 young fed & change over	1 adult standing on nest, 1 quite large young seen.	1 adult standing on nest, 2nd flew in - change over & sat down.	1 adult sitting.	1 adult sitting, stood up & fed 2 very small young.
25/4	1 adult sitting, stood up & turned eggs, sat down.	1 adult standing on nest & 2 young seen.	1 adult standing on nest.	Could not identify nest.	1 adult standing on nest, 2nd flew in with nest material. 1st adult then sat down & other stood nearby.	1 adult standing on nest, preened
3/5	1 adult sitting.	1 young seen sitting on nest.	1 adult standing on nest & 1 young preening.	No nest.	1 adult standing on nest.	1 adult standing on nest & 1 young seen in nest.
8/5	1 adult sitting.	3 young huddled together, adult flew in & fed them.	1 young sitting in nest.		1 adult sitting.	3 young moving around in nest.
17/5	1 adult sitting, stood up & turned eggs. 2nd flew in & fed sitting bird. Nest maintenance.	3 young seen, 1 standing in nest & 2 near nest.	1 adult flew in & stood above nest, & 1 on nest flew off.		1 adult standing on nest, 3 young in nest.	3 young seen (1 testing its wings).

Nest 7	Nest 8	Nest 9	Nest 10	Nest 11	Nest 12	Remarks
No. 4 in 1988 No. 5 in 1991 No. 6 in 1990 No. 7 in 1991	No. 5 in 1988 No. 6 in 1989 No. 7 in 1990 No. 8 in 1991	In tree attempted in 1990. Opposite side of river.	In tree used in 1988, 1989 and 1990.	In tree used in 1988, 1989 and 1990.	In same tree as Nest 8.	
1 adult sitting & 1 adult standing near.	1 adult sitting on nest.					10 adults seen
1 adult sitting.	1 adult sitting, 2nd bringing in nest material.					
1 adult sitting.	1 adult sitting, 2nd bringing in nest material.					After strong winds
1 adult sitting, stood up & did nest maintenance.	1 adult flew in, small head seen, adult eating from nest.					10 adults seen
1 adult standing on nest.	1 adult standing on nest, 1 much larger young seen.	(2 adults standing near Nests 3 & 4, another near Nest 8 & a second joined it, bill clapping, twig pulling & one attempted bobbing motion to sit.)				13 adults seen
1 adult standing on nest, 2nd flew in & 4 very small young fed by incoming bird.	1 adult standing on nest, 2nd flew in & fed 1 quite large young. Change over.					
1 adult standing on nest & one small young seen.	1 very large young standing on nest. 1 adult flew in but no feeding.	1 adult standing on new nest, flew off & returned to stand on nest.				
1 adult standing on nest & 2 young seen in nest.	1 very large young standing on nest.	No adult seen but 1 possibly sitting.				
3 young huddled together.	1 young standing on nest.	1 adult standing on nest & then sat down.				
Adult flew in & fed 3 young - noisy & scrapping.	1 young standing on nest, flew off & landed nearby.	1 adult flew away twice & returned to stand nearby.				

Date	Nest 1	Nest 2	Nest 3	Nest 4	Nest 5	Nest 6
23/5	1 adult sitting, 2nd flew in, possibly fed young. Change over.	Young moving about in branches.	Nest not visible through branches.		2 young standing in nest, preening & testing wings.	2 young standing near nest, 3rd in nest.
6/6	1 adult standing on nest, 1 young seen.	No young in nest.	No young in nest.		3 young sitting in nest.	No young in nest.
13/6	3 young in nest.	Empty.	Empty.		3 large young standing nearby.	Empty.
20/6	3 young standing on nest - 1 testing its wings.				1 large young on nest.	
4/7	2 young standing on nest & 1 sitting in nest.		Young flew in & landed near nest.		Empty.	
12/7	3 young near nest		Empty.			
18/7	Adult flew in, 1 young flew up from river & joined other 2 in nest. All 3 fed.					
26/7	1 young standing near.				Adult standing on nest.	
3/8	Empty.				Empty.	
11/8						
16/8						
22/8						

Nest 7	Nest 8	Nest 9	Nest 10	Nest 11	Nest 12	Remarks
Young seen moving about in branches.	1 young standing on nest.	1 adult standing on nest, 2nd flew in & chattering of young heard.	(Young Herons flying around)			
No young in nest.	1 young standing on nest.	Not checked.				1 young at riverside.
Empty.	1 large young standing on nest.	Movement seen in tree top.	Nest found when adult flew in with nest material. Another adult sitting, another adult standing nearby.	Found next to Nest 10. 1 adult sitting, stood up & did nest maintenance.		
	Empty.	Young heard, 1 testing its wings.	1 adult sitting, 2nd flew in & change over.	1 adult sitting.	Nest found when adult flew in with nest material. 2nd adult sitting.	1 young at riverside.
		2 young standing on nest testing wings.	1 adult standing near flew off. 4 quite large young preening.	1 adult sitting, came off to chase away another Heron.	1 adult standing on nest & 1 small head seen.	
		2 young testing wings near nest.	3 young standing on nest testing wings.	1 adult standing on nest & 1 small head seen.	1 adult standing on nest & 1 small head seen.	
		1 young flew down to river.	4 young seen, another landed near & chased off by adult standing on Nest 11.	1 adult standing on nest & definitely 2 young seen.	1 adult standing on nest, flew off & 3 young seen.	
	1 young sitting on nest then stood up.	Empty	4 young seen, 3 standing near & 1 on nest.	3 young seen, 1 standing on nest & 2 sitting in nest.	1 adult sitting & 1 adult standing preening.	
	Adult standing on nest.		1 young standing on nest.	1 young standing on nest & 2 sitting.	2 young standing on nest preening.	
	Empty.		Empty.	2 young sitting in nest.	2 young standing near nest & 1 young flew up into nest.	2 young at riverside.
			1 young flew off nest.	Adult flew in & 3 young fed.	2 young standing on nest.	
			Empty.	Adult flew in & 3 young fed, they had been standing near nest.	Empty.	

BIRD RINGING REPORT 1992

Report of the Co-ordinator

A creditable total of 5282 for the year, again largely made up from the Ivel Ringing Group. However, numbers were boosted this year by the Blunham Wildfowl figures.

A mixed and varied number of species including Scaup, Water Rail, Long-eared Owl, Redstart and Whinchat. Mute Swan numbers were extremely high, thanks to the efforts of Errol and his team. It will be interesting to see what movements we get from this total in coming years. Indeed, a number of Mute Swan recoveries have been included in this report giving some indication of their movements. All these recoveries have come from the Gloucester, Worcestershire area where there is a considerable amount of effort put into ringing this species.

The goose research in north Bedfordshire was again successful in its catch rate this year. Indeed, we had to let some 80 geese go as we ran out of rings. Finally we have received long distance movements of two Greylag controlled at Radwell which were originally ringed in Sevenoaks, Kent. Perhaps now the populations are reaching saturation point we will begin to receive more long distance movements. In an effort to increase our recovery data we will be colour ringing a number of Greylag next year.

As you can see from the list of recoveries we have had a very interesting year for passerines. Looking at the birds in species order, the Jack Snipe NI62357 and Fieldfare RC12429 have been included as they were retrapped in subsequent winters at the exact site of ringing which is quite unusual for these species. The Nightingale and Redstart were both controlled whilst migrating to their wintering grounds. There is an interesting selection of Sedge and Reed Warbler recoveries, a number of which are made up of recoveries from Ickersham in Sussex. Highlights in these two species are obviously the Sedge Warbler caught in its first visit south through France in 1990 and controlled at South Mills in July 1991 and the Reed Warbler caught as a youngster, and a late youngster at that, at Priory Country Park, Bedford and controlled on its wintering grounds in Djoudj, Senegal.

Not to be outdone by the Acrocephalus warblers, we received an excellent Blackcap recovery; F315444 was ringed as a juvenile bird at Everton in August 1989 and recovered dead in April 1992 in Morocco, no doubt on its return to this country.

The Willow Warbler recoveries have been included both for their longevity and also because this pair has stayed together for five years now.

The Waxwing is a stunning recovery, indeed, it is a stunning county record, made that much more interesting in that due to its being colour ringed we have been able to track its movement south through the country as the winter of 1990/91 elapsed.

Finally, we move to two excellent Reed Bunting recoveries, both controlled at the Houghton Regis roost, one from the Netherlands and one from Norway.

I think you will agree that 1992 has been an excellent year which makes for interesting reading.

ACKNOWLEDGEMENTS

Once again my thanks go to those ringers who have put in much effort over the year and also for taking the time to submit their records to me, without which this report could not be produced. P. Adams, G. Buss, P. Cannings, N. Finan, D. McKee; E. Newman, J. Nyles, P. Oldfield, M. Hughes, J.M. Reed, P. Wilkinson, R. Wooding, A. Zwetsloot.

D.S. WOODHEAD

RINGING TOTALS FOR 1992

Mute Swan	105	Great Spotted Woodpecker	1	Blackcap	218
Greylag Goose	237	Lesser Spotted Woodpecker	1	Chiffchaff	90
Canada Goose	83	Sand Martin	2	Willow Warbler	348
Wigeon	305	Swallow	9	Goldcrest	14
Gadwall	111	House Martin	41	Spotted Flycatcher	5
Teal	33	Meadow Pipit	4	Long-tailed Tit	119
Mallard	2	Yellow Wagtail	7	Willow Tit	3
Pochard	370	Grey Wagtail	2	Coal Tit	5
Tufted Duck	322	Pied Wagtail	22	Blue Tit	247
Scaup	1	Wren	126	Great Tit	123
Sparrowhawk	8	Dunnock	148	Treecreeper	9
Water Rail	1	Robin	134	Magpie	2
Moorhen	6	Nightingale	6	Starling	47
Little Ringed Plover	1	Redstart	2	House Sparrow	5
Ringed Plover	8	Whinchat	3	Chaffinch	55
Lapwing	12	Wheatear	2	Greenfinch	67
Jack Snipe	6	Blackbird	198	Goldfinch	50
Snipe	25	Fieldfare	11	Linnet	36
Common Sandpiper	1	Song Thrush	58	Redpoll	4
Common Tern	13	Redwing	8	Bullfinch	71
Turtle Dove	2	Grasshopper Warbler	6	Yellowhammer	39
Woodpigeon	1	Sedge Warbler	317	Reed Bunting	362
Cuckoo	1	Reed Warbler	204	Corn Bunting	32
Long-eared Owl	1	Lesser Whitethroat	68		
Swift	20	Whitethroat	155		
Kingfisher	11	Garden Warbler	144	Total	5282

SELECTED LIST OF RECOVERIES

Entries are arranged in Voous order. After species, ring number and age code, ringing details are given on the first line and recovery details on the second and subsequent lines. Abbreviations used are given below the recovery data.

Species	Ring Number	Age Code	Ringing and Recovery Dates	Ringing and Recovery Locations	Recovery Manner	Distance (km) and Direction
Mute Swan	U1845	3	20.11.91	Kelverton, Warwicks	V	112 E
			13.03.92	Tewkesbury, Gloucs.		
	16.08.92	Bedford				
	17.01.93	Bedford				
	Z73545	5F	25.04.91	Brownyard, Hereford		
Z73501	5M	04.04.92	Bedford			
Z70207	5F	5M	24.12.90	Worcester, Worcs	V	112 E
			16.08.92	Bedford		
	23.09.90	Feckenham, Worcs				
	25.07.91	Evesham, Worcs				
	15.10.91	Stratford, Warwicks				
13.02.92	Tewkesbury, Gloucs					
28.02.92	Bedford	104 E				
Greylag Goose	5150801	3J	26.06.88	Sevenoaks, Kent	V	114 NW
	5157783	3J	27.06.92	Radwell GP		
			24.06.90	Sevenoaks, Kent		
27.06.92	Radwell GP	V	114 NW			
Jack Snipe	NV62357	6M	08.03.92	Houghton Regis		
			28.11.92	Houghton Regis		
Fieldfare	RC12429	3F	30.12.89	Blunham		
			24.01.92	Blunham		
Nightingale	E676139	4	24.04.89	Felixstowe, Suffolk	V	112 N
			31.08.92	Everton		
Redstart	H170262	3M	02.09.91	Worthing, Sussex	V	115 N
			21.08.92	Houghton Regis		

Wren	5F8297	5	06.01.92 21.08.92	Blunham Nr. Royston, Herts	X	24	SE
Sedge Warbler	H872089	3	29.08.92 14.09.92	Blunham Icklesham, Sussex	V	153	SE
	H355997	3J	24.07.92 02.08.92	Blunham Icklesham, Sussex	V	153	SE
	F805227	4M	20.07.90 17.05.92	Icklesham, Sussex Houghton Regis	V	138	NE
	H273028	4	25.05.91 03.05.92	Wyboston Bedford	V	11	WSW
	F482587	3	31.07.89 10.08.91 03.05.92	Linford, Bucks Wyboston Wyboston	V V V	31	ENE
	363.5174	3	05.08.90 25.07.91	Etang de Trunvel, Finistere, France South Mills	V	551	NNE
Reed Warbler	H010985	3	25.09.91 10.04.92	Bedford Djoudj, Senegal	V	4211	S
	H597589	5M	16.05.92 19.08.92	Houghton Regis Icklesham, Sussex	V	139	SE
	H597682	5M	14.06.92 07.08.92	Houghton Regis Icklesham, Sussex	V		
	F434623	4	18.08.89 18.08.92	Icklesham, Sussex Chalton	V	140	NW
Blackcap	F315444	3J	02.08.89 29.04.92	Everton Taunat, Morocco	X	1907	S
		3	30.07.89 21.07.92	Hounslow, London Bedford	V	76	N
	H460394	3J	28.06.92 25.07.92	Everton Bedford	V	10	W
	H597701	3J	23.06.92 05.09.92	Houghton Regis Bedford	V	27	NNE
	Garden Warbler	H484497	3	12.07.92 15.08.92	Alton Water, Suffolk Houghton Regis	V	113
Willow Warbler	7P3256	4F	29.04.88 25.05.92	Everton Everton	V		
	7P3259	4M	29.04.88 04.05.92	Everton Everton	V		
Waxwing	NV43945	3F	11.11.90	Inverurie			
			30.11.90	Aberdeen	VV		
			22.12.90	Edinburgh	VV		
			20.01.91	Nr. York	VV		
			24.02.91 03.03.91	Biggleswade Biggleswade	VV VV	594	SSE
Reed Bunting	B811153	3F	05.10.91 22.10.91	Ijsselmeerpolders Houghton Regis	V	397	W
	E342051	3M	06.10.91 27.10.91	Lisrafjord, Norway Houghton Regis	V	800	SW

Euring Age Code:

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

Recovery Manner:

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

Sex:

- M — Male
 F — Female
 B — Breeding

THE RISE AND FALL OF THE HOLLY BLUE BUTTERFLY by Richard Revels

Few naturalists can have missed the remarkable abundance during the past three years of the Holly Blue butterfly *Celastrina argiolus*. This was a welcome contrast to the general scarcity of this butterfly in Bedfordshire during most of the 1980s when in several years I failed to see any at all.

It was in the spring of 1990 that it suddenly became common, moving into Bedfordshire from counties to the south and west where I had seen it in some numbers the previous year.

The Holly Blue is a very mobile butterfly. In the country it can be seen wandering over shrubby hillsides, along hedgerows and through woodland rides, but it is also just as much at home in towns where it may have strongholds in parks and gardens where there are ivy clad walls and an abundance of shrubs and trees. In contrast to our other species of blues that usually form discrete colonies in restricted habitats, the Holly Blue is a continual wanderer, and, thanks to this behaviour, it can rapidly expand its range when weather and other factors are favourable.

There are two broods a year of this butterfly which is on the wing in the spring from late March until mid June, while the summer brood emerges in mid July and lasts until early September. A small partial 3rd brood may occur after long hot summers, and any butterflies that are seen in late September and early October will belong to a third brood.



Holly Blue butterfly, female

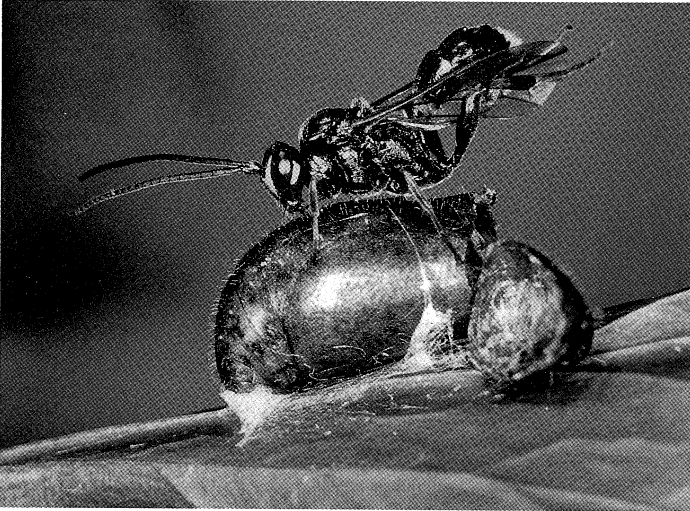
(Photo: R. Revels)

In Bedfordshire, Holly Blue numbers built up during the 1990 summer and it became very abundant during 1991 and the spring of 1992, but the 1992 summer brood almost failed, with only the occasional sighting compared to many hundreds in the previous two years. This butterfly has always been very volatile in its appearance, having a pattern of several generations when it is common followed by a collapse of numbers when it may become locally extinct for several years before numbers build up again. A parasitic Ichneumon wasp *Listrodomus nycthemus*, that is restricted to the larvae of the Holly Blue as its only known host, has been blamed for causing these dramatic fluctuations, but few if any monitoring programmes have been carried out to confirm this.

Address: 73 London Road, Biggleswade, Beds SG18 8EE



Holly Blue butterfly larvae feeding on Pyracantha fruits; note the holes left after feeding
(Photo: R. Revels)



Ichneumon wasp parasite Listrodomus nycthemus standing on the Holly Blue pupa from which it has just hatched

(Photo: R. Revels)

I decided to record any parasite build-up in the Bedfordshire Holly Blues. This was done by collecting up fully grown larvae from the wild, and recording what insects hatched, before releasing them.

While searching for Holly Blue larvae I would sometimes see the Ichneumon wasps patrolling the ivy and other plants searching for small Holly Blue larvae, which they would "stab" with their long sting-like ovipositor injecting an egg into their host. The parasite grub hatches and develops inside the healthy looking larva without killing it until the change to pupa had taken place. Even then the pupa looks normal until the last few days before emergence, when the pupa case becomes discoloured in patches and the wasp can be detected inside it if held up against a light.

Holly Blue larvae feed mostly on the flower buds and developing fruits of a number of both wild and cultivated shrubs. In the spring Holly *Ilex aquifolium*, Dogwood *Cornus* spp., Gorse *Ulex* spp., Bramble *Rubus* spp., Spindle *Euonymus* spp., *Pyracantha* spp., and *Cotoneaster* spp. are frequently used, while the second generation feed mostly on Ivy *Helera helix* and to a lesser extent on Gorse and Bramble.

Although well camouflaged the larvae are fairly easy to find as they leave tell-tale holes in the buds and fruits on which they have been feeding.

From the wild collected larvae I had the following hatches:

Larvae from August/September 1990, hatched spring 1991: 180 holly blues, 7 parasites.

Larvae from June 1991, hatched July/August 1991: 31 Holly Blues, 57 parasites.

Larvae collected August/September 1991, hatched spring 1992: 91 Holly Blues, 183 parasites.

Larvae collected June 1992, hatched July 1992: 1 Holly Blue, 77 parasites.

No larvae could be found August/September 1992 and the butterfly was very scarce.

From the above findings there seems to be little doubt that this parasitic Ichneumon wasp is the main controlling factor in the fluctuating fortunes of this butterfly, with the weather playing a rather less important role than with some other butterflies. No other species of parasite hatched from my wild collected larvae however, Mr R.M. Craske, an entomologist living in Sussex, unexpectedly had the parasitic Tachinid fly *Phryze vulgaris* emerge from some wild larvae collected in Hove, Sussex in 1984 and again in 1990. This is a common parasitoid of a number of Lepidoptera larvae, but had not been recorded as using the Holly Blue as a host before. Further monitoring is needed to find out if this Tachinid parasite has any effect in the normal Holly Blue cycles of abundance and scarcity, and if it has started to use the Holly Blue as a host for its grubs country-wide, or just in isolated pockets, perhaps because of a scarcity of its usual hosts in some years.

Remarkably little is known about parasitoids of British butterflies, and a survey is currently being carried out by Dr M.R. Shaw and Dr M.G. Fitton. They would welcome help by naturalists who breed butterflies from wild-collected larvae and have parasites hatch. The parasites should be sent loosely wedged (e.g. with cotton wool in a tube) so that they do not rattle and break in the post, and need to be well packed to survive transit, to Dr Mark Shaw, National Museums of Scotland, Chambers Street, Edinburgh, EH1 1JF, giving data of host, foodplant from which it was collected, the dates of collection and emergence and O.S. grid reference of the site.

DRAGONFLIES (Odonata) Report of the Recorder

Several species of dragonfly, the so called 'spring species', have a synchronised emergence during the early months of the season. Such species have been affected by the cool, wet weather which has been a feature of the last few springs. However, during 1992 one of the warmest Mays this century contributed to the abundance of dragonflies during the month and into June. The earliest species to appear is the Large Red Damselfly *Pyrrosoma nymphula* which started to emerge on the 3rd May and during the month was reported in higher numbers than for some years. Four-spotted Chasers *Libellula quadrimaculata* and Black-tailed Skimmers *Orthetrum cancellatum* also benefitted from the warm weather with mass emergences being witnessed at several sites.

Small ponds around the area of Haynes, have been the subject of special study by Dave Parsons and John Adams, who have reported some interesting observations over the last few years. Several ponds were reported to have dried out in the last two summers, but at Cow Pond dragonfly numbers this year had recovered dramatically.

SYSTEMATIC LIST

Zygoptera (Damselflies)

Banded Demoiselle *Calopteryx splendens* Very high numbers (500+) reported from sites along the River Ouse

New tetrad records SP92Q, TL02C, TL03K, TL04T, TL14B

Emerald Damselfly *Lestes sponsa* This species continues to turn up at small ponds throughout the county, especially where dense emergent vegetation has developed.

New tetrad records TL14F

White-legged Damselfly *Platycnemis pennipes* In previous years this species has been on the wing from early June, but numbers were already high along the R. Ouse by the third week of May.

Large Red Damselfly *Pyrrosoma nymphula* The earliest species on the wing, emerging on 3rd May at Flitton Moor pond.

New tetrad records TL03Y, TL04Q

Blue-tailed Damselfly *Ischnura elegans* Common and widespread everywhere.

New tetrad records TL13E

Scarce Blue-tailed Damselfly *Ischnura pumilio* High numbers at Sundon (see below), but only just 'hanging on' at its only other site at Houghton Regis quarry.

This national rarity is the county's only key species and subject of special study, following its discovery in the county in 1988. During the 1992 flight season a mark-recapture study was undertaken at Sundon Springs between the months of May through September.

628 individuals were uniquely marked on a wing with Lumocolor permanent marker pen using a system of dots and dashes. The site was visited on a frequent basis and all individuals caught with a net. This work, which will be published elsewhere, has yielded new data on age related colour changes in females, as well as providing an estimate of the total population size. Figure 1 shows the total numbers of males and females either observed or caught and released throughout the flight season. Figure 2 shows the percentage of individuals recaptured during each visit. The first recaptures were made several weeks after marking suggesting some movement away from the seepage areas immediately after emergence. By the end of August the flight period had come to an end.

Observations of eggs and larvae have shown that this species is well able to survive the shallow water and drought conditions of a seepage zone habitat (Cham 1992).

Common Blue Damselfly *Enallagma cyathigerum* Common and widespread. At South Mills GP on 21st May emerging adults were rising into the air only to be predated by the many hirundines flying over the water.

New tetrad records TL13E

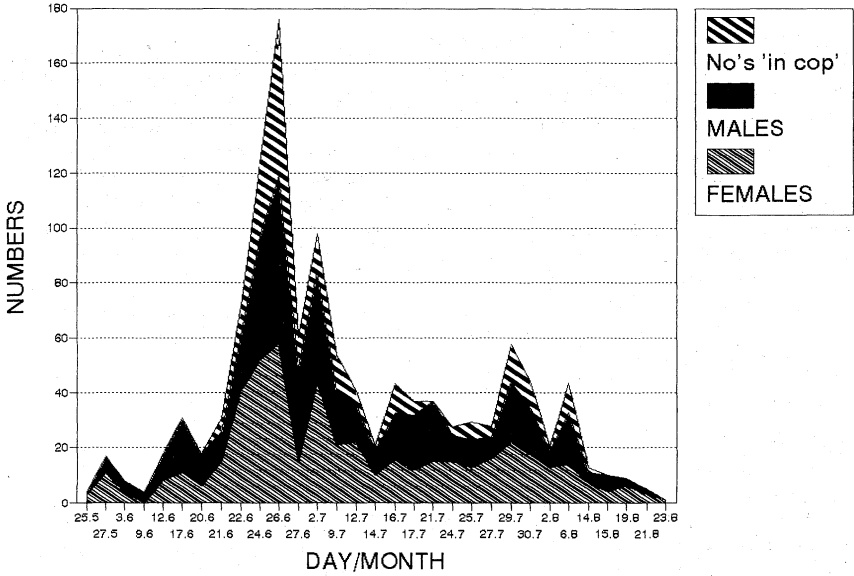


Figure 1 Population counts of *Ischnura pumilio* at Sundon Quarry in 1992

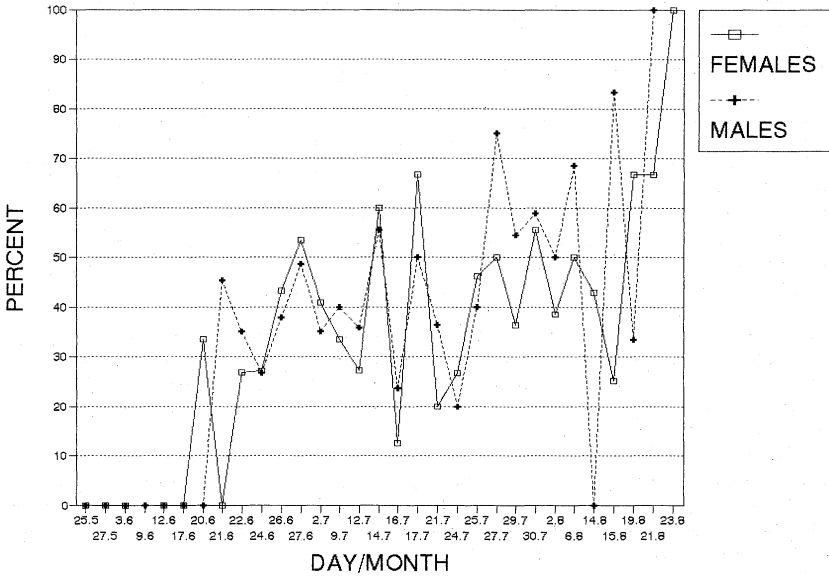


Figure 2 Percentage of marked *Ischnura pumilio* recaptured at Sundon Quarry in 1992

Azure Damselfly *Coenagrion puella* Reported in good numbers at small ponds throughout the county.

New tetrad records TL02S, TL04Q, TL13E, TL15K

Red-eyed Damselfly *Erythromma najas* This species clearly benefitted from the warm May, with high numbers at many sites; 500+ at the BCWT reserve at Begwary Brook. At the small lake at Summerfields Fruit Farm, Haynes, a site regularly studied by D. Parsons, it was recorded for the first time.

New tetrad records TL14B

Anisoptera (Dragonflies)

Brown Hawker *Aeshna grandis* Common and widespread. At Felmersham GP one individual was observed by Joan Childs to catch a Large White Butterfly in flight and then land on an elderberry bush to consume it.

New tetrad records TL04QR

Southern Hawker *Aeshna cyanea*

New tetrad records TL03K, TL04QR

Migrant Hawker *Aeshna mixta* Reported widely in the late summer but not as prevalent as in previous years due to cool, wet weather at this time.

New tetrad records TL04R

Emperor Dragonfly *Anax imperator*

New tetrad records TL13E, TL14A

Scarce Chaser *Libellula fulva* This species had a successful year along the R. Ouse at Huntingdon (Cambridgeshire), but further searches in Bedfordshire failed to discover it.

Broad-bodied Chaser *Libellula depressa*

New tetrad records TL03F, TL04Q, TL14A, TL15K

Four-spotted Chaser *Libellula quadrimaculata* Mass emergence at Felmersham GP during third week of May. Dozens of exuviae were found having emerged on vegetation a few metres away from the water's edge. J. Childs reported one individual of the f. *praenubila* form at Felmersham. This form which has smokey wing tips occasionally turns up in some populations.

New tetrad records TL14A, TL15K

Black-tailed Skimmer *Orthetrum cancellatum* Numerous individuals were observed emerging at Houghton Regis marl lake on 23rd May. Emergence was concentrated along the northern margins of the lake which were more sheltered and warmer. Most were emerging on rushes at varying distances from the water. One exuvia was found 11 metres from the shore!

New tetrad records TL03K, TL13E, TL14A

Common Darter *Sympetrum striolatum* Common and widespread.

New tetrad records SP95U

Ruddy Darter *Sympetrum sanguineum*

New tetrad records TL04R, TL14F, TL15K

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CHAM, S.A. 1992 A cautionary note on the identification of the larva of *Ischnura pumilio*. *J.Br.Dragonfly Soc.* **8 no.2** 10-12

ACKNOWLEDGEMENTS

Recording work depends heavily on those who take time to note their observations during the course of the year, whether it be 'out in the field' or from a garden pond. All records are of value and to those who sent in records for 1992 I extend my thanks.

J. Adams, A. Aldhous, J. Childs, P. Oldfield, D. Parsons, S. Pittman, P. Trodd, Mr. and Mrs. K. Weedon.

STEPHEN CHAM

MACRO-MOTHS (Lepidoptera)

Report of the Recorder

In the process of compiling this report it soon became clear that 1992 was not a particularly good year for moths, or for moth records. A number of recorders, myself included, were unable to do much trapping and some were unable to provide any information at all.

The weather was rather mixed during the year, being wet or cold at the height of the moth trapping season. Records were, however, obtained from two new sites during 1992. Mrs N.H. Browne provided a very comprehensive list of moths from her very mature garden in Luton, and D.C.G. Brown submitted an interesting list from Maryland College, Woburn. Ian Woiwod continued with his investigation into the moths of the northern section of Potton Wood and it is hoped that further work can be done in this and other under recorded areas of Bedfordshire.

SPECIES LIST

The following list contains new species, comments on species of particular interest, and an update of the current status of some of the County's moths. Species marked * are new County records. All numbers and English names as per *A Recorder's Log Book or Label List of British Butterflies and Moths* by J.D. Bradley and D.S. Fletcher (Curwen, London 1979).

- 17 **Common Swift** This species has now been recorded from all of the 10 Km squares in Bedfordshire.
- 1638 **Fox Moth** One taken at a Rothamsted trap at Houghton Regis on 28th July 1991.
- 1655 **Poplar Lutestring** An uncommon Bedfordshire moth, recorded at light from the northern section of Potton Wood by I. Woiwod on 4th August 1992.
- 1681 **Clay Triple-Lines** At light in Mrs N.H. Browne's garden in Luton in 1992. This uncommon species was last recorded in the County in 1982 also from a garden in Luton.
- 1715 **Plain Wave** At light in Mrs N.H. Browne's garden in Luton in 1992. A scarce local moth.
- 1754 **The Phoenix** Six specimens of this uncommon moth were taken at a Rothamsted trap at Houghton Regis between 10th and 27th July 1991. Also at Aspley Guise in 1991 and from Mrs N.H. Browne's garden in Luton in 1992.
- 1769 **Spruce Carpet** One at light on 24th May 1992 from I.K. Dawson's trap in Tempsford, and another also at light on 29th September 1992 from Miss J. Kemp-Gee's trap at Dell Farm, Whipsnade.
- 1778 **May Highflyer** One at I.K. Dawson's trap at Tempsford on 21st May 1992, and one at a Rothamsted trap at Cockayne Hatley on 31st May 1992.

7	257	247	112		
6	356	347	296	206	
5	337	248	424	366	
4	334	412	276	279	
3	397	341	215		
2	155	304	222		
1					
	9	(SP) « 0 » (TL)	1	2	3

Number of species recorded in each 10km square — as at 31.12.1992.

- 1782 **The Fern** One, at a Rothamsted trap at Houghton Regis on 2nd August 1991. This moth appears to have become uncommon over the last few years.
- 1799 **Winter Moth** This species has now been recorded from all of the 10 Km squares in Bedfordshire.
- 1897 **The V-Moth** At light in Mr & Mrs E. Bowskill's trap in Stotfold in 1990 and 1991. An uncommon, local Bedfordshire moth.
- 1972 **Convolvulus Hawk-moth** One specimen was found dead by Mr P. Almond in his garden in Bromham on 16th September 1992. This moth was last recorded in the county by A.H. Chapman at Everton on 31st August 1983, and by R. Passley from Pavenham on 8th September 1983.
- 1978 **Pine Hawk-moth** A good year for this species with records from Woburn; Aspley Guise; The Lodge, Sandy and from I.K. Dawson's trap at Tempsford, on 16th July 1992.
- 2033 **Black Arches** A good year for this attractive moth. Recorded by J.B. Barnwell from Aspley Guise, I. Woiwod from the northern section of Potton Wood, I.K. Dawson from The Lodge, Sandy and from Flitwick Moor by the Recorder & D.V. Manning on 26th July 1992, when it came to light in good numbers.
- 2118 **True Lover's Knot** Recorded at light by J.B. Barnwell from Aspley Guise during 1992, and in most previous years. The larvae of this moth feed on heather, so it can be found in suitable locations along the Greensand Ridge.
- 2157 **Light Brocade** One specimen from a Rothamsted trap at Houghton Regis on 11th July 1991. This moth is local and uncommon in Bedfordshire.
- 2237 **Grey Shoulder-knot** A local and uncommon moth in the county. Recorded in 1992 from a Rothamsted trap at Cockayne Hatley; The Lodge, Sandy; from J.B. Barnwell's garden in Aspley Guise; Mrs N.H. Browne's garden in Luton and by the Recorder from near Whitehill Wood, Butterfield Green on 29th November 1992.
- 2271 **Orange Sallow** Recorded from J.B. Barnwell's garden in Aspley Guise in 1990, 1991 and 1992. An uncommon, local moth in the county which is surprising as the larvae of this species feed on Lime.
- 2298 **Svensson's Copper Underwing** At light in the northern section of Potton Wood by I. Woiwod on 19th August 1992.
- 2335 **Slender Brindle** At light, Flitwick Moor, 26th July 1992 by the Recorder. An uncommon, local Bedfordshire moth.
- 2364 **Frosted Orange** Recorded during 1992 from a Rothamsted trap at Cockayne Hatley; Mr & Mrs E. Bowskill's garden in Stotfold and from J.B. Barnwell's trap in Aspley Guise.
- 2386* **Mediterranean Brocade** One specimen of this migratory moth is in Glenn Ping's collection, dated "1979, Clapham, Beds." No other details are available.

ACKNOWLEDGEMENTS

My sincere thanks go to the following for help and assistance: J. Adams, T. Aldhous, P. Almond, C. Baker, J.B. Barnwell, Mr & Mrs E.G. Bowskill, D.C.G. Brown, Mrs N.H. Browne, Mrs V. Chadwick, Ms J. Childs, I.K. Dawson, L. Greenwood, Dr P. Hyman, Miss J. Kemp-Gee, E. King, P. Madgett, D.V. Manning, A.R. Outen, D. Parsons, Mrs V. Peck, A.M. Riley, B. Squires, M. Townsend, H. Winter and I. Woiwod.

V.W. ARNOLD

MICRO-MOTHS (Lepidoptera) Report of the Recorder

My report of 1992 includes the recording of nineteen species new to the county list. One existing record is also corrected.

ADDITIONS TO THE BEDFORDSHIRE LIST

Nepticulidae

Ectoedemia quinquella (Bedell) Cockayne Hatley Wood, TL 25Q (10 October)

Incurvariidae

Nemophora cupriacella (Hb.) Pegsdon Hills, TL 12J (15 July)

Tineidae

Nemapogon ruricolella (Stt.) Cockayne Hatley Wood, TL 25Q (25 June)

Gracillariidae

Phyllonorycter leucographella (Zell.) Stotfold, TL 23 (winter 1991/92)

Choreutidae

Choreutis sehestediana (Fabr.) Cooper's Hill, TL 03I (14 August)

Coleophoridae

Coleophora adjunctella (H.-S.) West Wood, Knotting, SP 96W (27 September)

C. saturatella (Stt.) Sandy, near railway station (Uffen, 1971)

C. niveicostella (Zell.) Pegsdon Hills, TL 12J (15 July)

Elachistidae

Elachista humilis (Zell.) Potton Wood, TL 25K (14 June)

Gelechiidae

Monochroa palustrella (Dougl.) Cockayne Hatley, TL 24P (June)

Aristotelia ericinella (Zell.) Cooper's Hill, TL 03I (26 July)

Chionodes fumatella (Dougl.) Sharnbrook, SP 95Z (27 July)

Caryocolum kroesmanniella (H.-S.) The record in Barrett (1904) of *Lita hubneri* (Haworth) is a synonym of this species (Huemer, 1988). I wrongly attributed this record to *Caryocolum huebneri* (Haw.) which is now deleted from the county list.

Scythrididae

Scythris crassiuscula (Hb.) Pegsdon Hills, TL 12J (15 July)

Tortricidae

Acleris boscana (Fabr.) Cockayne Hatley, TL 24P (July)

Dichrorampha aeratana (Pierc. & Metc.) Thurleigh Cutting, TL 05I (7 June)

Pyralidae

Scoparia basistrigalis (Knaggs) Flitwick Moor, TL 03M (11 July)

Achroia grisella (Fabr.) Sharnbrook, SP 95Z (14 July)

Ancylosis oblitella (Zell.) Cockayne Hatley, TL 24P (1976) pers. comm. I. Woiwod

Pterophoridae

Pterophorus tridactyla (Linn.) Pegsdon Hills, TL 12J (22 June)

In 1986 a new record for the county was *Coleophora vestianella* (Linn.) (synonym *C. laripennella* (Zett.)). My attention has been drawn to the restricted distribution of this species, which is known from Breckland and Lancashire sandhills (Emmet, 1988). The 1986 record is withdrawn until the specimen can be dissected.

I do, in fact, have two dissected specimens of this species recorded from the RIS trap at Cockayne Hatley in July/August 1991. My microscope slides 136 (female) and 137 (male) are identified from Patzak (1974) figures 337 and 203. The food-plant of this species is *Atriplex patula* (Common orache).

The same trap has again provided a number of specimens of *Coleophora therinella* (Tengst.), and single specimens of *Phlyctaenia perlucidalis* (Hb.) and *Synaphe punctalis* (Fabr.).

ACKNOWLEDGEMENTS

I would like to thank the following for records and assistance: Mr & Mrs E.G. Bowskill, A.M. Emmet, R. Passley, M.C. Townsend, I. Woiwod.

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D.V. MANNING

BUGS (Hemiptera-Heteroptera) Report of the Recorder

This has been a good year for bug recording in the county. Three new species were added to the County List bringing the total to 329 species, which gives us 58% of the species known from the British Isles.

Jim Ashby found the smallest of the new species, *Pachycoleus watli*, which is only 1.6mm long. He found three in a pitfall trap on Flitwick Moor on 8th August 1992. This is a southern species of wet *Spagnum* recorded from only five counties in Britain; Bedfordshire is the most northerly. Jim Ashby also found other species of interest which included another *Xylocoris galactinus* in his flight trap at Dunstable; the tiny lace-bug *Campylosteira verna* in a pitfall trap at Totternhoe Knoll NR, and a female *Myrmedobia exilis*, another tiny species, at Flitwick Moor also in a pitfall.

In September I found two species new to the county, surprisingly in that most thoroughly worked of sites, Maulden Wood. Even more surprising, both were on the same tree! I visited the wood to examine a group of *Chamaecyparis lawsoniana* trees near the Lodge to see if the shield-bug *Elasmostethus tristriatus* was present, as indeed it was, in good numbers, with many nymphs on green cones. As I was looking at these I noticed some Lygaeids on old cones in the sunshine, evidently *Orsillus depressus* a species first seen in Britain in 1987 in Surrey (R.D. Hawkins, *Ent. mon. Mag.* 125, 241-242). There were a few adults and many 4th-5th instar nymphs, the identity of which I subsequently confirmed from Hawkins' description. This species has a south-eastern distribution in Europe but has recently spread into Germany, Luxemburg, Belgium and The Netherlands, usually being found on species of Cupressaceae, as in the present instance.

The following week, on 20th September, I returned to the same trees to show a friend, and beat two very slender bugs from the foliage. One was *Empicoris vagabundus*, a fairly common arboreal species. The other was much more surprising, *Berytinus hirticornis*. This is an uncommon southern species in Britain, about 9mm in length, normally found in dry grasses. In 1959 at the time of publication of Southwood and Leston's *Land and water bugs of the British Isles* it was known only from Devon. In recent years it has been found more generally across southern England, including as far north and east as Essex. The Maulden site was adjoining suitable grass heath but this is not a bug I was expecting in Bedfordshire, especially in a tree.

In previous reports I have documented the decline of a population of a Red Data Book Category 1 ('Endangered') bug, *Placochilus seladonicus*, at Leighton Buzzard. This year I am happy to report two new sites. One is the new Beds & Cambs Wildlife Trust reserve at Pegsdon Hills. On 11th July 1992 I found seven males, two females and a considerable number of 3rd-5th instar nymphs, all on the large scabious *Knautia arvensis*, as at Leighton Buzzard. Later the same day I found another population, on the same host-plant species, on a roadside verge about 1.5km to the west, on Gravel Hill, Hexton, which is just in Hertfordshire. Here I saw eight males.

This has been a good year for the less common species of shield-bug. On 19th April I saw a single *Troilus luridus* at Barton Hills NNR, on Dog's Mercury beside the stream. I swept a specimen of *Aelia acuminata* from dry grassland adjacent to Cox's Hill Quarry at Sandy on 2nd August. This is about 2km from the only known site in the county. Finally, on 2nd August at College Wood, Northill, I found two 3rd instar nymphs of *Palomena prasina*, a species which is very scarce in the county. This year I also saw unusual numbers of a near relative of the shield-bugs, *Coreus marginatus*, which is usually scarce and local. All this perhaps points to more suitable weather for all these species over the past year or two.

In 1992 I saw the pond-skater *Gerris gibbifer*, belatedly added to the County List two years ago, at a second site, a concrete water-tank in Maulden Wood where there appears to be an established population.

The only down-beat note is that in the River Great Ouse at Radwell, usually a site rich in *Aphelocheirus aestivalis*, an extended search on 20th September yielded only one specimen.

ADDITIONS TO THE COUNTY LIST

Lygaeidae

Orsillus depressus Dallas A few adults and good numbers of 4th-5th instar nymphs at the edge of Maulden Wood (TL067386) on 12th and 20th September 1992, further details above.

Berytinidae

Bertinus hirticornis (Brullé) A single specimen on the same tree as the *Orsillus depressus* on 20th September 1992.

Dipsocoridae

Pachycoleus waltli Fieber Three adult male brachypters in a pitfall trap at Flitwick Moor NR (TL046350), found by Jim Ashby.

B.S. NAU

ROESEL'S BUSH CRICKET *METRIOPTERA ROESELII* (HAGENBACH) IN BEDFORDSHIRE

by S. A. Cham

The discovery in 1990 of three male Roesel's Bush Crickets at separate sites in the county, represented the first county records for this species (Rands 1991). This attractive bush cricket has recently enjoyed a rapid expansion in its range in south eastern England (Marshall and Haes 1988). A northward spread over the last few years has been recorded in neighbouring Hertfordshire where at some sites it is found in high numbers (Widgery 1991a, b). Its arrival in Bedfordshire had been expected.

During hot summers the macropterous or long-winged form *f. diluta* often occurs in relatively high numbers. This form, which occurs in both sexes, is capable of free flight and therefore acts as an effective dispersal mechanism during favourable summers. All three 1990 specimens were of this form and it seemed likely at the time that they had flown in from the surrounding areas. During the same summer in Hertfordshire all new records were of *f. diluta* males (Widgery 1991b).

However, on 19th August 1992 two males of the short-winged form were observed 'singing' from the tops of grass stems along the same bank at Sundon (TL 042267) where they were discovered in 1990. They were also observed on subsequent days. Despite searching no females were found.

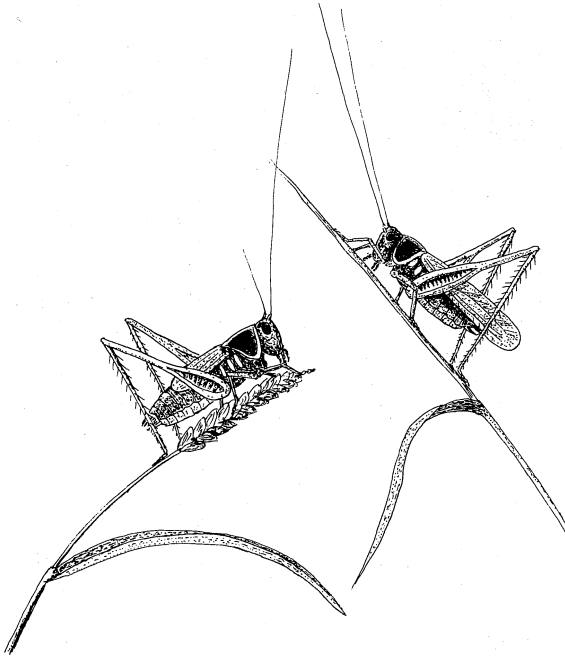
The summer weather of 1992 was poor for orthoptera and it seems likely that these short-winged individuals would have hatched from eggs laid nearby. Although further study and searching is required to discover breeding sites, it would appear that Roesel's Bush Cricket has established itself in the county. Future generations of county orthopterists now have a time point of entry into the county on which to base further study.

It is hoped that this short note will act as a stimulus for other naturalists to look for this species, which is most often discovered by the song of the males. They produce a continuous high pitched sound which has been described as 'intensely penetrating' and likened to an electrical discharge such as is emitted from an electricity pylon in damp weather (Marshall and Haes 1988).

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Address: 45 Weltmore Road, Luton LU3 2TN



Roesel's Bush Crickets (Metrioptera roeselii) (Hagenbach) — males
Short-winged and macropterous form f.diluta (Charpentier).

(Steve Cham)

LACEWINGS Report of the Recorder

Only one record of any importance appears to have been made during the past two years.

Drepanopteryx phalaenoides (L.). Tempsford, found on ceiling of dining room of house in Station Road after use of MV light trap outside the room, TL 173538, 10. x. 1991, I. Dawson. There were six pre-1960 records from Great Britain only one of which was from the south.

A further six records were made between 1960 and 1979 but since then there have been 25 records including one from Ireland. This is the second from the county.

Chrysopa carnea Steph. Pegsdon, bridleway at county boundary, Icknield Way, 29. viii. 1992, B. Verdcourt. This was the only result of much sweeping in the area.

I would still like any dead lacewings found on window-ledges etc. anywhere in the county.

B. VERDCOURT

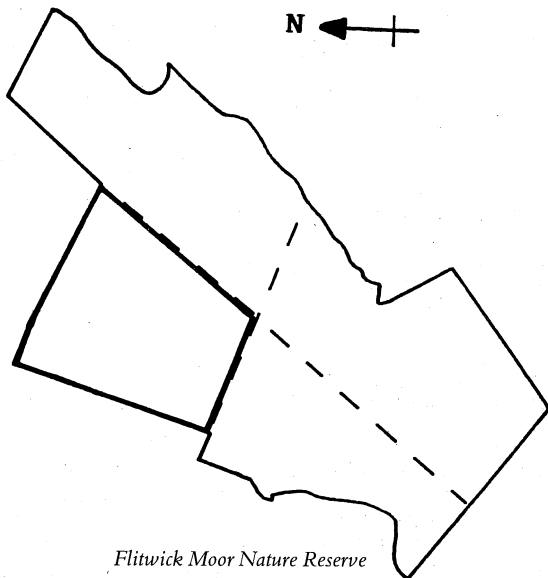
BEETLES (Coleoptera) Report of the Recorders

Of the sites investigated during 1992, a major part of our effort has been spent in the completion of the first year of a four year survey at Flitwick Moor. Comprehensive surveys have also been carried out at Duck End Nature Reserve and Maulden Church Meadow, after the tentative investigations which were reported at these sites last year (Ashby & Powell, 1991). In addition to other sites which have been sampled to varying extents by the Recorders, material has been collected by Richard Wilson and Tom Thomas, and passed on to us for identification.

Flitwick Moor (TL046354) SSSI

In planning the four year survey of Flitwick Moor, the area of the site has been divided into four approximately equal parts, with one quarter to be studied each year. The dashed lines on the plan indicate the four quarters, and the bold line encloses the area studied during 1992.

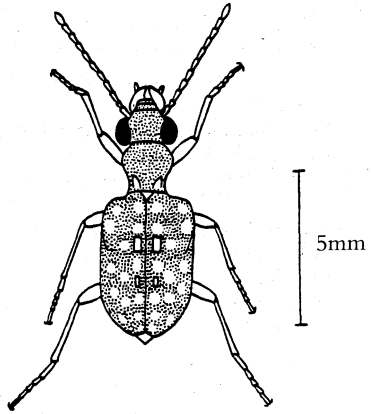
Total species in 1992 = 242



Species new to Bedfordshire: *Calathus micropterus* (Duftschmid), *Cercyon tristis* (Illiger) Nb, *Anisotoma humeralis* (Fabricius), *Acidota crenata* (Fabricius), *Gyrophaena congrua* Erichson Nb, *Malthinus seriepunctatus* Kiesenwetter, *Cerylon ferrugineum* Stephens, *Anaspis thoracica* (Linnaeus) Nb, *Longitarsus parvulus* (Paykull) Na, *Apion simile* Kirby.
Nationally Notable species: *Acidota cruentata* Mannerheim Nb, *Cantharis pallida* Goeze Nb, *Apion cerdo* Gerstaecker Nb.

Flitwick Moor is a damp woodland consisting mainly of birch, oak and alder. There are areas that range from relatively dry, to open standing water, and although originally alkaline, acidic parts also exist. This variety of conditions, along with the associated diversity of flora, produces a complex mosaic of habitats for beetles to utilise. As in previous years, the main sampling method has been pitfall trapping, other samples have been taken by sweep netting, heat extractions of leaf litter and examination of fungi and rotting timber.

Elaphrus riparius is a carabid or ground beetle, and recorded at Flitwick Moor from a single capture on 27th June. All members of the genus are found near water, and their large eyes indicate that they are predators that are active during the day, using sight to locate their prey. The elytral sculpture is very distinctive, consisting of shining rectangular areas known as 'mirrors' and circular depressions. Also found on the stream at this site was *Gyrinus substriatus*, one of the whirligig beetles. These shiny black beetles can be seen swimming on the surface of moving or still water. The middle and hind legs have evolved into wide, flat paddles which are used to propel the beetle across the water in its rapid circular movements. Another adaptation to its life on water has been the division of each eye into two parts, one half remaining on the dorsal side of its head, and the other half having migrated to the ventral side. This enables the beetle to see above and below the water surface at the same time.



Elaphrus riparius

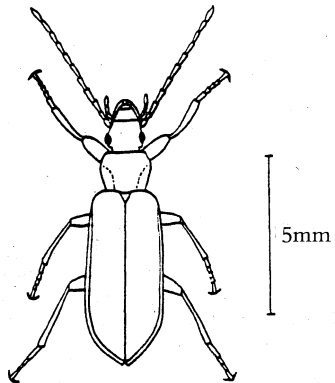
Duck End Nature Reserve, Maulden (TL050375)

Total species in 1992 = 177

Species new to Bedfordshire: *Cercyon tristis* (Illiger) Nb, *Deinopsis erosa* (Stephens).

Nationally Notable species: *Trechus micros* (Herbst) Nb, *Leiodes litura* Stephens Nb, *Leiodes rugosa* Stephens Na, *Orthochaetes setiger* (Beck) Nb.

Many of the species recorded at Duck End are typical of the wet marshy habitats present at this site. In contrast to this, the occurrence of *Cteniopus sulphureus* was of special interest. This tenebrionid beetle has been described as a typically, although not exclusively, coastal species. At Duck End, it was observed feeding from flowering umbelliferae on 28th June, when more than twenty individuals were seen within a few minutes. The following week, the beetle had disappeared from the site and was not observed again during the year.



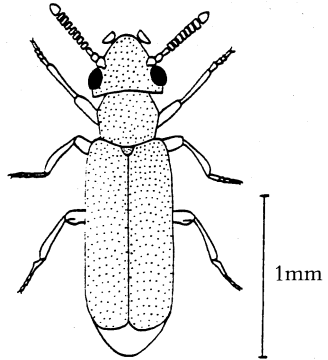
Cteniopus sulphureus

Maulden Church Meadow (TL059383) SSSI

Total species in 1992 = 134

Species new to Bedfordshire: *Cercyon tristis* (Illiger) Nb, *Deinopsis erosa* (Stephens), *Dryops luridus* (Erichson), *Aderus brevicornis* (Perris) RDB2, *Cassida vittata* de Villers Nb.

The most important record to be generated from Maulden Church Meadow during 1992, was that of *Aderus brevicornis*. The find has been fully described (Ashby, 1993), but briefly, five specimens of this rare beetle were found between 28th June and 25th July. As a species of dead timber, it is assumed that it came from a rotting tree stump located close to the pond at this site.



Aderus brevicornis

Species new to Bedfordshire — other sites:

Bradgers Hill, Luton (TL098243)

Samples collected by Richard Wilson: *Catops kirbii* (Spence), *Aphodius zenkeri* Germar, *Phalacrus fimetarius* (Fabricius).

10 Buckwood Avenue, Dunstable (TL035224)

Flight interception trap: *Acritus nigricornis* (Hoffmann), *Coprophilus striatulus* (Fabricius), *Monotoma brevicollis* Aubé, *Caenoscelis subdeplanata* Brisout, *Triplax aenea* (Schaller), *Scymnus femoralis* (Gyllenhal).

Pegsdon Hills (TL122296)

Samples collected by Tom Thomas: *Chrysolina hyperici* (Forster).

Blows Downs (TL040220)

Longitarsus reichei (Allard).

ACKNOWLEDGEMENTS

We would like to thank the following people who have helped us during the year:—John Comont (Bedfordshire County Council), Jennie Massey (English Nature), Richard Wilson, Tom Thomas, and especially Jonathan Cooter and Michael Cox for expert help with difficult groups.

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J.E. ASHBY, W. POWELL

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

BEDFORDSHIRE FLORA PROJECT

The flora of Bedfordshire has been well studied over many years with the first county flora published being Charles Abbot's *Flora Bedfordiensis* in 1798. Next came James Saunders' *The Field Flowers of Bedfordshire* in 1911. In 1953 John Dony published his *Flora of Bedfordshire* which was acclaimed as a model flora in botanical circles. John followed this by the *Bedfordshire Plant Atlas* in 1976 which gave a five year snapshot of the distribution of 800 of the county's plants using tetrad maps. As well as the major floras many papers have been published relating to the plants of Bedfordshire with the first reference being from 1597 in Gerard's *Herbal*. Down the years there has been much excellent study of many aspects of the local flora resulting in a wealth of information that is ready for further critical review.

With the present day requirements from bodies such as English Nature and Bedfordshire County Council, and in the light of the increasing rate of change in habitats, due not only to human activity but to possible climatic changes, it is clear that a new appraisal of the county's flora is appropriate. The Botanical Society of the British Isles, following on from its successful Monitoring Scheme in 1987-88 is progressing towards instigating a new Atlas project to update the 1962 *Atlas of the British Flora*. A local, but more detailed, survey in parallel would be the most efficient use of resources to achieve the objectives.

I believe that such a new survey would channel the enthusiasm that I know is in the county to a worthwhile cause whilst increasing our knowledge of the distribution of local plants and improving the botanical expertise of those taking part. It will also be good fun!

Primary Objective To collect field records from all tetrads in the county to enable a new flora to be published which will provide a good and uniform coverage of the distribution of flowering plants, ferns and fern allies in Bedfordshire.

Secondary Objectives

1. To provide 10km distributional data for the new BSBI Atlas Project.
2. To provide data on all sites for the county's Biological Records Centre — for assessment of sites suitable for designation as reserves etc.
3. To provide data on all reserves under the jurisdiction of various organisations such as English Nature, the Bedfordshire and Cambridgeshire Wildlife Trust, Local authorities, RSPB etc.
4. To allow a comparison to be undertaken between the published 1970-75 Plant Atlas. This comparison would be valuable from the national viewpoint.
5. To attempt a resurvey of the Habitat Studies from John Dony's 1953 flora.

Scope To collect records on a tetrad basis for all Bedfordshire species treated fully in the *New Flora of the British Isles* by Stace (1991). (Other species, e.g. any wool aliens still present, will also be recorded.)

Period of Recording Eight years of fieldwork from 1992-1999. Records obtained from 1987-1991 will be incorporated, assuming they can be located to a tetrad.

Methodology

1. To assign 10km squares to individuals who will be responsible for recording in that area.
2. Within each tetrad to identify one or more sites for initial effort.
3. To check the known locations of those species which occur in 10 tetrads or fewer.
4. To provide identification sessions covering the various habitats.
5. To ensure good coverage of critical groups (eg Rubus) by using BSBI specialists. Guidelines for collection of specimens of these groups will be given.
6. To research and collate existing records for the period 1987-91.
7. To produce a new record card for Bedfordshire.
8. Latin names to be used as per Kent's *List of Vascular Plants of the British Isles* (1992)

RECORDS FOR 1992

The fieldwork carried out in 1992 confirmed many of the older records for some of the uncommon species in the county. Two new important 10km square records were reported but no new additions to the flora. Of particular note are the following:

PRIMULACEAE Primrose family

Anagallis tenella Bog Pimpernell — New 10km record, Maulden TL03N (JC, MP). This species had not been seen for many years in its only remaining site, now much deteriorated, at Pavenham on the banks of the River Ouse. Discovered at Maulden in what might be called one of the few remnants of the old Maulden Bogs, often mentioned by Abbot (1798). A specimen from Maulden Bogs is in the William Crouch herbarium at Luton Museum, and is dated July 1843.

OROBANCHACEAE Broomrape family

Lathraea squamaria Toothwort — Chicksands Wood TL14A (JA). Confirmation of record, present now for several years at the same location. Parasitic on Hazel *Corylus avellana*.

ASTERACEAE Daisy family

Tephrosia integrifolia Field Fleawort — Sharpenhoe Clappers TL03Q (CB). Confirmation of pre-1969 record. Occurred in an area cleared of scrub in recent years.

JUNCACEAE Rush family

Juncus bulbosus Bulbous Rush — New 10km record, Maulden TL03N (JC, MP). This is a rare Bedfordshire species and appears to be confined to boggy places on acid soils and has decreased markedly over recent years. Dony (1976) shows only one extant site. The present record is from the edge of a pond, excavated in recent years, in Maulden.

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ACKNOWLEDGEMENTS

I would like to thank all who have sent in records and those who have indicated that they are willing to participate in the new Flora Project.

J. Adams, G. Bellamy, C. Boon, R. Brind, J. Comont, C. Dony, P. Irving, V. Johnston, J. Johnston, A. Outen, M. Powell, J. Wakeley.

CHRIS BOON

SOME RECORDS OF PLANT GALLS

by L. Lloyd-Evans

The following plant galls were recorded during a short visit to the county, 18th-20th September 1992. The Milton Bryan list ('MB') refers to the footpath outside Woburn Park's boundary wall from London Road to Linden Lake (SP 964307-978322). The Swineshead list ('Sw') refers to the green lane running north-eastwards from the vicinity of Swineshead Church to the county boundary at Spanoak Wood (TL059662-067676). Identification and nomenclature are based on the listed references.

Host	Causer	Group	MB	Sw.
<i>Acer</i>	<i>Aceria eriobia</i>	Gall-mite	*	*
<i>Acer</i>	<i>A. pseudoplatani</i>	Gall-mite	*	—
<i>Acer</i>	<i>A. macrochela</i>	Gall-mite	*	*
<i>Acer</i>	<i>A. macrorhyncha</i>	Gall-mite	*	*
<i>Arctium</i>	<i>Terellia tussilaginis</i>	Tephritid fly	*	—
<i>Buxus</i>	<i>Psylla buxi</i>	Psyllid bug	*	—
<i>Cirsium</i>	<i>Urophora cardui</i>	Tephritid fly	*	*
<i>Cirsium</i>	<i>U. stylata</i>	Tephritid fly	*	*
<i>Corylus</i>	<i>Phytoptus avellanae</i>	Gall-mite	—	*
<i>Crataegus</i>	<i>Dasineura crataegi</i>	Gall-midge	*	—
<i>Crataegus</i>	<i>Eriophyes goniothorax</i>	Gall-mite	*	—
<i>Fraxinus</i>	<i>Aceria fraxinivora</i>	Gall-mite	*	*
<i>Fraxinus</i>	<i>Dasineura fraxinea</i>	Gall-midge	*	*
<i>Fraxinus</i>	<i>D. fraxini</i>	Gall-midge	*	—
<i>Fraxinus</i>	<i>Psyllopsis fraxini</i>	Psyllid bug	*	*
<i>Galium</i>	<i>Eriophyes galii</i>	Gall-mite	—	*
<i>Glechoma</i>	<i>Rondaniola bursaria</i>	Gall-midge	*	*
<i>Ilex</i>	<i>Phytomyza ilicis</i>	Agromyzid fly	*	—
<i>Mentha</i>	<i>Puccinia menthae</i>	Rust	*	*
<i>Prunus</i>	<i>Eriophyes similis</i>	Gall-mite	*	*
<i>Quercus</i>	<i>Andricus fecundator</i>	Cynipid wasp	—	*
<i>Quercus</i>	<i>A. kollari</i>	Cynipid wasp	—	*
<i>Quercus</i>	<i>A. lignicola</i>	Cynipid wasp	*	*
<i>Quercus</i>	<i>A. quercus-calicis</i>	Cynipid wasp	*	*
<i>Quercus</i>	<i>Neuroterus albipes</i>	Cynipid wasp	*	*
<i>Quercus</i>	<i>N. numismalis</i>	Cynipid wasp	*	*
<i>Quercus</i>	<i>N. quercus-baccarum</i>	Cynipid wasp	*	*
<i>Rosa</i>	<i>Blennocampa pusilla</i>	Sawfly	*	*
<i>Rosa</i>	<i>Diplolepis eglanteriae/nervosa</i>	Cynipid wasp	—	*
<i>Rosa</i>	<i>D. rosae</i>	Cynipid wasp	*	*
<i>Rubus</i>	<i>Dasineura plicatrix</i>	Gall-midge	*	*
<i>Salix</i>	<i>Eriophyes tetanothrix</i>	Gall-mite	—	*
<i>Salix</i>	<i>E. triradiatus</i>	Gall-mite	*	—
<i>Salix</i>	<i>Pontania proxima</i>	Sawfly	*	—
<i>Salix</i>	<i>Rhabdophaga rosaria</i>	Gall-midge	*	*
<i>Tilia</i>	<i>Eriophyes tiliae</i>	Gall-mite	*	—
<i>Urtica</i>	<i>Dasineura urticae</i>	Gall-midge	*	*
<i>Veronica</i>	<i>Jaapiella veronicae</i>	Gall-midge	*	—
<i>Filipendula</i>	<i>Dasineura pustulans</i>	Gall-midge	—	*
<i>Filipendula</i>	<i>D. ulmeriae</i>	Gall-midge	—	*

In addition, the gall *Aceria ulmicola* was recorded on Smooth Elm (*Ulmus minor*) at the edge of Maulden Wood (TL070387).

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MOSSES AND LIVERWORTS (Bryophyta) Report of the Recorder

Among epiphytic Bryophytes (those mosses and liverworts growing on trees) many of the species are pollution sensitive, particularly to sulphur dioxide. This is especially so of those species more or less confined to these habitats. Such species are generally scarce in Bedfordshire partly because of the dryness of our climate (the damper west and north of Britain are far more conducive to epiphytes) but also because of high levels of atmospheric pollution in SE England. Most of the commoner epiphytes occurring in the county are opportunist species which will colonise a wide range of habitats.

Following the introduction of North Sea gas, aerial sulphur dioxide levels in SE England declined. The consequence of this has been a gradual improvement in the epiphytic Bryophyte and Lichen flora of the region.

The results of my last twelve months Bryophyte recording in Bedfordshire illustrate the extent of the improvement here and some of the more significant epiphyte finds are given below.

Ulota phyllantha on *Salix* Priory Country Park, Bedford 20.4.92 New County Record.

Ulota crispa on *Salix* Flitwick Moor 22.4.92. As reported (Outen 1990) this species had not been seen in the county since 1949.

Orthotrichum lyelli Clifton Plantation 19.4.92 and also at Henlow Pits both on *Salix* 28.4.92. As reported (Outen 1990) this species had not been seen in Bedfordshire since 1883.

Fruillania tamarisci on *Salix* at Clifton Plantation 19.4.92 and on *Alnus* Flitwick Moor 22.4.92. This species has now been found at five Bedfordshire sites since 1984 following an absence of many years (Outen 1989).

Ptilidium pulcherrimum on *Salix* at Clifton Plantation 19.4.92 and Flitwick Moor on *Alnus* 22.4.92. The first Bedfordshire record for this species was in 1972. These records increase to five the known sites in the county (Outen 1989).

Flitwick Moor is an exceptionally well studied Bryological site which has been visited by many competent Bryologists in recent years. The discovery of 3 new species to this site in a single visit is quite remarkable and brings the total for the site to 111 species (Outen 1974). It is unlikely that these epiphytes could all have been previously overlooked here.

I have monitored the increase in epiphytes on Willows at Clifton Plantation and as recently as 1990 the only species present was *Orthotrichum diaphanum*. 1991 saw the addition of *Dicranoweisia cirrata*; *Orthotrichum affine* and *Zygodon viridissimus*. The three further additions for 1992 are included above.

Other significant finds in the County during 1992 were:

Entodon concinnus Pegsdon Hills 23.5.92. This chalk grassland species has apparently always been scarce in the county. The last known find was from Barton in 1953 (Outen 1990).

Brachythecium populeum Chicksands Wood 2.5.92 on brickwork of bridge over stream. This is only the 2nd Bedfordshire record of this species.

ACKNOWLEDGEMENTS

I would like to thank George and Peggy Hooper and Rosemary Brind for specimens supplied to me during the year.

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ALAN R. OUTEN

THE FUNGUS FORAY, 1992

THE LODGE, SANDY

About 30 members of the Society gathered at the Lodge, Sandy for the annual fungus foray, led as usual by Dr D. A. Reid on November 8th. The locality, previously visited in 1970 and more recently in 1979, has the potential of being a very good area for fungi, with a good mix of deciduous trees such as oak, sweet chestnut, birch and some beech as well as areas of pine and some exotic conifers. However, the list of species collected on the two previous visits was a disappointing 83 and 84 respectively.

The current season started early with great promise and an abundance of fungi from late August through to early October, but then for some inexplicable reason ceased abruptly over a wide area of the country, roughly south of a line from Shropshire to Bedfordshire. In West Sussex the change occurred within the time scale of a single week in mid-October. The assembled party, therefore, approached the foray with trepidation knowing that fungi might be scarce, especially since the date was unusually late in the year. However, fears proved groundless for the number of agarics alone, at 83, equalled the total number of fungi collected on the two previous visits.

Striking features of the list are the large numbers of species of *Clitocybe* (5) and *Collybia* (4), but these often persist until late in the year. The variety of *Lactarius* (6) is unusual since these fungi tend to occur early in the season; the 10 species of *Mycena* are no doubt to be explained by diligent collecting. Totally unexpected are the 4 species of Lepiotoid fungi, as these are seldom prominent in our County Lists. The wide variety of resupinate Corticioid species is probably a reflection of the overall scarcity of agaric fruit bodies forcing our attention on this neglected group.

Amongst the species collected was an unusual *Agrocybe* which has tentatively been assigned to *A. arvalis*. This had a flattened cap about 4cm across, of a distinct yellowish colour with a darker watery margin and a rather thin pallid stem about 6cm high and 3-4mm wide, with white basal rhizomorphic strands. These dimensions are unusually large for *A. arvalis*, which is characterised by having thin-walled bottle-shaped pleurocystidia bearing a group of several long finger-shaped apical processes. In the specimen we collected the thin-walled pleurocystidia varied from fusoid to lageniform or clavate, with a slightly or abruptly enlarged base; some of these showed from 2 to 5 short, apical, sterigma-like processes to about 3µm long, whilst even fewer showed two similar appendages measuring 12-17 × 9µm. These cystidia had a range of 50-100 × 17-26 (base) and 8.5-14 (neck)µm, or to 22mm wide at the apex when clavate. The spores (8.5) 9.5-11 × 5-6.5 × 5.5-7.2µm were elliptic in side view with a truncate germ-pore and truncate ovoid in surface view.

Another problematic find was the discovery by Peggy Hooper of three fruitbodies of a tiny but beautiful *Lepiota*, which was obviously very close to *L. tenera* Orton. The material had a campanulate cap 6-10mm across, with dark radial cobwebby fibrils at the centre, becoming increasingly scanty on a whitish background toward the indistinctly sulcate margin. The stem, 12-15 × 1-1.5mm, was whitish with a horizontal dark-edged ring; and which below this was ornamented with similar dark arachnoid fibrils almost to the base. Microscopically it had a cap cuticle of entwined hyaline, thin-walled, septate hyphae, 5-8µm wide, often with "Y" shaped elements, and with the terminal segments usually more elongated and clavate, 35-80 × 8-13µm wide. All hyphae lacked clamp-connections. The cheilocystidia were conspicuous, thin-walled hyaline and clavate, 33-50 × 8-15µm; the basidia, thin-walled, hyaline, clavate to 20 × 7µm with 4 sterigmata, arose from wedge-shaped subhymenial elements; the tiny amygdaliform spores, 5.5-6.0(7.0) × 3.75-4.0µm had distinct, slightly thickened walls and were dextrinoid, but without an obvious germ pore.

From the description of *L. tenera* it is clear that this species is very close to our fungus, but it was said to be "deep ochre-buff to vandyke at disc, whitish or pale ochraceous elsewhere with ochraceous or tawny ochraceous scales which are more scattered towards margin where they may be absent, scales at centre dense and slightly pointed, those elsewhere adpressed, fibrillose, very small and irregularly dispersed, margin very thin often plicate-striate or slightly crenate". This account suggests a more yellowish-brown fungus than that found at Sandy which was blackish to purplish-brown. The other slight difference is that Orton's fungus was said to have "ellipsoid slightly amygdaliform spores, 6-8 × 3.5-4.5µm, which is slightly larger than in our material (5.5-6.0(7.0) × 3.75-4.0µm). [Bon (1981) quoted a range of (5.0)5.5-7.5(8.5) × (3.5)4.0-4.5(5.0)µm].

Cortinarius cinnamomeo-badius, also new to the county has a small to moderately sized, chestnut brown cap, with an obtuse central boss, golden yellow gills, similarly coloured stem and elliptic spores $6.5\text{--}9.0 \times (4.0)4.5\text{--}5.0\mu\text{m}$.

Four species of Aphyllophorales (Non gilled Fungi, Brackets etc) were added to the County List; of these *Stereum subtomentosum* deserves special mention since the locality at Sandy must be one of the most northerly in this country — most reports being from South East England. However, in this respect Miss Holden was of the opinion that it is not uncommon in neighbouring Hertfordshire. However, it is the author's opinion that this is a very rare fungus in Britain, although no doubt confused with the ubiquitous *S.hirsutum*. It differs from the latter in growth form for instead of the fructifications being broadly attached to the substrate or arising from a supine base, they have a narrow point of attachment and often appear helmet-shaped in *S.subtomentosum*. Further the upper surface when seen under a lens has a uniformly smooth felty texture rather than the coarse shaggy hirsute appearance which is characteristic of *S.hirsutum*. Another distinction is that the lower surface is creamy buff with a whitish margin, lacking the bright yellow colour of the latter. The final confirmatory character is that when the whitish margin of the underside is chewed it bruises bright yellow.

The remaining species new to the County are all resupinate Corticioid fungi which require microscopic examination before they can be determined. The fruitbody of *Leptosporomyces septentrionalis* formed an extensive white resupinate growth on coniferous wood, and had an almost meruliod wrinkled surface, at least when moist. Microscopically it comprises loose, thin-walled hyaline clamp-bearing hyphae $4\text{--}6(7)\mu\text{m}$ wide, with those near the surface developing slightly thickened walls. The subhymenial hyphae are much narrower and the spores are thin-walled, hyaline, narrowly navicular, $6.0\text{--}7.0 \times 1.5\text{--}2.0\mu\text{m}$, and often adhere in groups of four. *Athelia epiphylla* is another loosely attached pellicular white corticioid fungus in which the hyphae $3\text{--}5\mu\text{m}$ wide, are thin walled, hyaline and lacking in clamp connections, except on some of the basal hyphae. The spores $6\text{--}10 \times 3\text{--}5\mu\text{m}$ are thin-walled, hyaline and subcylindric, narrowly ellipsoid or ovate. In contrast *Phlebiella tulasnelloidea* produces thin adherent resupinate corticioid fructifications with a blue-grey hyaline waxy texture. The pleurobasidia have a bifurcate base and the subglobose or ellipsoid spores, $6.0\text{--}6.5(7.0) \times 4.5(5.0)\mu\text{m}$ have a spinous ornament.

A total of 160 species was collected of which 7 are new to the county.

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SPECIES LIST

**Agrocybe* cf. *arvalis*; *Amanita gemmata*; *A.muscaria*; *A.rubescens*; *Baeospora myosura*; *Boletus badius*; *B.chrysenteron*; *B.pruinatus*; *Clitocybe dicolor*; *C.ditopa*; *C.flaccida*; *C.nebularis*; *C.vibecina*; *Collybia butyracea*; *C.confluens*; *C.maculata*; *C.peronata*; *Coprinus comatus*; *C.micaceus*; **Cortinarius cinnamomeo-badius*; *C.semisanquineus*; *Crepidotus variabilis*; *Cystoderma amianthina*; *Flammulina velutipes*; *Galerina hypnorum*; *G.mycenopsis*; *Gymnopilus penetrans*; *Hebeloma crustuliniforme*; *H.mesophaeum*; *Hygrophoropsis aurantiaca*; *Hygrophorus hypothejus*; *H.niveus*; *Hypholoma capnoides*; *H.fasciculare*; *Laccaria laccata*; *L.proxima*; *Lactarius glycosmus*; *L.hepaticus*; *L.quietus*; *L.rufus*; *L.subdulcis*; *L.tabidus*; *L.turpis*; *Lepiota cristata*; *L.fulvella*; *L.sistrata*; *L.subalba*; **L.* cf. *tenera*; *Lepista nuda*; *Macrolepiota rhacodes*; *Marasmius androsaceus*; *M.undatus*; *Mycena cinerella*; *M.candida*; *M.epipterygia*; *M.flavoalba*; *M.galericulata*; *M.galopus*; *M.leucogala*; *M.mairei*; *M.pura*; *M.vitilis*; *Myxomphalia maura*; *Nolanea cetrata*; *N.farinolens*; *N.hirtipes*; *Paxillus involutus*; *P.panuooides*; *Pholiota lenta*; *P.squarrosa*; *Pleurotus ostreatus*; *Psathyrella hydrophila*; *Psilocybe inquilina*; *P.montana*; *Rickenella fibula*; *Russula betularum*; *R.erythropoda*; *R.ochroleuca*; *R.parazurea*; *Tubaria furfuracea*; *Stropharia aeruginosa*; *Tricholomopsis rutilans*.

**Athelia epiphylla*; *Auriscalpium vulgare*; *Bjerkandera adusta*; *B.fumosa*; *Botryobasidium subcoronatum*; *Chondrostereum purpureum*; *Clavaria argillacea*; *Coriolus versicolor*; *Daedaleopsis confragosa*; *Datronia mollis*; *Ganoderma adspersum*; *G.lucidum*; *Heterobasidion annosum*; *Hirschioporus abietinus*; *Hymenochaete rubiginosa*; *Hyphoderma setigerum*; *Hyphodontia pallidula*; *H.sambuci*; **Leptosporomyces septentrionalis*; *Leptotritum semipileatus*; *Merulius tremellosus*; *Peniophora cinerea*; *P.quercina*; *Phaeolus schweinitzii*; *Phlebia merismoides*; *Phlebiella pseudotsugae*; **P.tulasnelloidea*; *Piptoporus betulinus*; *Polyporus varius*; *Ptychogaster albus*; *Radulomyces confluens*; *Schizopora paradoxa*; *Serpula himantioides*; *Stereum gausapatum*; *S.hirsutum*; *S.rameale*; *S.sanguinolentum*; **S.subtomentosum*; *Thelephora terrestris*; *Tyromyces caesius*; *T.sericeomollis*; *Vuilleminia comedens*.

Bovista plumbea; *Gaeastrum triplex*; *Lycoperdon foetidum*; *L.lividum* (= *spadiceum*); *L.perlatum*; *L.pyriforme*; *Phallus impudicus*; *Scleroderma citrinum*; *S.verrucosum*; *Sphaerobolus stellatus*.

Auricularia auricula-judae; *A.mesenterica*; *Calocera pallidospathulata*; *C.viscosa*; *Dacrymyces stillatus*; *Exidia glandulosa*; *E.truncata*; *Myxarium nucleatum*.

Puccinia arenariae on *Silene dioica*.

Aleuria aurantia; *Ascocoryne sarcooides*; *Bulgaria inquinans*; *Rhytisma acerinum*; *Scutellinia scutellata*.

Chaetosphaeriella phaeostroma; *Daldinia concentrica* (on Birch); *Diatrype stigma*; *Diatrypella quercina*; *Hypoxylon multiforme*; *Nectria cinnabarina*; *N.episphaeria*; *Rhopoglyphus filicinus*; *Xylaria hypoxylon*; *X.polymorpha*.

Sepedonium chrysospermum.

Lycogala epidendrum.

* New County Record.

DEREK A. REID

SOME RECORDS OF FUNGI ON PLANTS: RUSTS, SMUTS & MILDEWS by L. Lloyd-Evans

In mid-September 1992 in the middle of a sandy hay meadow near the barn in Maulden Woods there were several conspicuous patches of purple, each several metres across. These were visible from distance of several hundred metres. On inspection they proved to be due to an abundance of the powdery Mildew *Erysiphe cichoracearum* on the leaves of a yellow Composite (*Hieracium*). The affected plants were quite localised but surrounded by extensive areas of unaffected *Leontodon* and other Composites. This Mildew attacks a wide range of plants of this family, including garden Michaelmas Daisies.

The uncommon rust, *Puccinia polygoni-amphibii* var. *convolvuli* I, III was found on 20th September 1992 in a fallow field adjoining Dropshort NR to the east. The field has been uncultivated for about a year ('set-aside') and has developed a limited flora of arable weeds. The Rust was on Black Bindweed (*Fallopia convolvulus*), and a sample has been deposited with Bedford Museum.

In addition, the following Rusts and Smut were noted during two visits to the county in 1992 Kings Hoe Wood was visited on 23 April, Barton Hills and Maulden on 25 April and Toddington on 20 September. References to Maulden Woods refer to the south end, on the Greensand. Identification and nomenclature are based on Ellis and Ellis (1985).

Address: 22 Bellgreave Avenue, New Mill, Huddersfield HD7 7DP.

Rusts

- Kuehneola uredinis* II — on Bramble stems (*Rubus* sp.), Maulden Woods.
Miyagia pseudosphaeria III — on Field Sow-thistle (*Sonchus arvensis*), Toddington.
Phragmidium sanguisorbae I — on Salad Burnet (*Sanguisorba minor*), Barton Hills NNR.
Puccinia lapsanae I — on Nipplewort (*Lapsana communis*), Maulden Woods.
P. malvacearum III — on Common Mallow (*Malva sylvestris*), Maulden Woods.
P. tumida III — on Pignut (*Conopodium majus*), Maulden Woods.
Uromyces ficariae III — on Lesser Celandine (*Ranunculus ficaria*), Kings Hoe Wood (Steppingley), Barton Hills NNR, and Maulden Woods.
Uromyces muscari III — on Bluebell (*Hyacinthoides non-scripta*), Maulden Woods.

Smut

Entyloma ficariae — on Lesser Celandine, Maulden Woods and Barton Hills NNR.

Derek Reid has informed me that *Puccinia polygoni* — *amphibii* var *convolvuli*, *Puccinia tumida* and *Entyloma ficariae* are new County Records. *Kuehneola uredinis*, *Puccinia lapsanae* and *Uromyces muscari* were previously collected in Maulden Woods during a fungus foray by The British Mycological Society in 1984 (*Bedf. Nat.* 39 69)

REFERENCES

ELLIS, M.B. and ELLIS, J.P. 1985 *Microfungi on land plants*, Croom Helm, London.

THE AUTHOR

An active fieldworker in Yorkshire with wide experience of many groups, he is a Past-President of the Yorkshire Naturalists' Union and a member of the British Plant Gall Society, among others. Before moving north he assisted Dr Dony with fieldwork for the *Flora of Hertfordshire* and was Bird Recorder for Herts NHS.



John Niles directing the Society's 45th anniversary tree planting, Centenary Wood 7th March 1992.

(Photo: Mary Sheridan)

THE SOCIETY'S 45TH ANNIVERSARY

Bedfordshire Natural History Society was formed by a group of enthusiasts who shared a common interest in and love for the wildlife and countryside. The first meeting of the Society was on the 14th October 1946. At the outset their principle aim was to record the species of flora and fauna in the county at that time and to publish their findings. A journal, published annually, and a quarterly newsletter were launched and are still published today as the main written record of the Society's activities.

In recent years the work of the Society has greatly aided conservation within the county, and the information in the Society's records, together with the advisory work carried out by individual members is of great environmental importance. The Society contributes both practically (by carrying out down to earth activities such as pond clearance and site surveys) and also through its support of appeals to save important habitats within the county, to this fight for the environment.

In the autumn of 1991, 45 years had elapsed since the founding of the Society. It was felt that to celebrate this event it would be particularly appropriate to plant a group of trees in a suitable location. This proved to be more difficult than it first appeared because a site that is both accessible and yet unlikely to be vandalised was hard to find. Eventually, we were offered a place for planting within the meadow enclosed by Centenary Wood near Pulloxhill. Centenary Wood is an area of newly planted woodland owned by Bedfordshire County Council and created to celebrate the 100th anniversary of the formation of the County Council.

On Saturday 7th March 1992 a group of members under the guidance of John Niles Principal Tree and Woodland Officer for Bedfordshire County Council, planted 15 broadleaved trees mainly oak, ash and field maple.

It was decided to hold an unveiling ceremony later in the year when the weather would be warmer. The ceremony was arranged to follow a field meeting on Sunday 17th May 1992. On the day the weather was superb and enabled an impromptu botanical site survey by Chris Dony and an informal 'champagne' picnic which was enjoyed by all those present.

A plaque mounted on the gatepost to the meadow carries the inscription:

BEDFORDSHIRE NATURAL HISTORY SOCIETY
45th ANNIVERSARY 1946-1991

Bernard Verdcourt, a founder member of the Society, unveiled the plaque with appropriate words of both reminiscence and encouragement for the future.

We are grateful to all those members who contributed to making this such a fitting and memorable event and give special thanks to Betty Clutten, Gill and Andrew Dickens and Dave Allen.

JOHN ADAMS
Development Committee

LICHENS Report of the Recorder

A visit to three churchyards in the north-west of the county, by a party of lichenologists, resulted in some interesting finds and new records for the county.

Odell, Sharnbrook and Felmersham churches are close to the Northamptonshire border and to ironstone country and have a number of ironstone memorials with the associated lichens which prefer this particular substrate. *Lecanora sulphurea* and *Tephromela atra* were found growing at Sharnbrook and Odell, whilst *Psilolechia lucida* and *Xanthoria candelaria* were found at Sharnbrook and Felmersham. These lichens prefer exposed, nutrient-rich, siliceous rocks and walls and so the bird droppings streaking these substrates would certainly help lichen growth.

The majority of headstones, however, are of limestone and the usual lichen assemblages were represented, particularly the *Caloplaca* species and the new county records include two *Caloplaca* species. *Caloplaca ruderum* found growing on wood at Odell is a species that is normally associated with the south and east of England but just extends its range into Bedfordshire whilst *Caloplaca variabilis* which was found on limestone in all three churchyards is a species that is uncommon in the south of England but frequent in the Midlands. Similarly, *Aspicilia subcircinata*, found on a window ledge at Odell, is a species that is far more common in the Midlands and East Anglia than the south of England.

Psilolechia leprosa is an interesting lichen as it grows on copper-rich rock outcrops and mine buildings and at Odell and Felmersham it was found growing by the copper run-off associated with the lightning conductors and a window grill. Also found at Felmersham was *Lepraria lesdainii* which has a verdigris green colour and was found growing on mosses in mortar in deep recesses of walls, this lichen preferring damp, heavily shaded habitats. At Odell, a lichen with a gelatinous form of thallus, *Leptogium plicatile* was found on limestone ledges, where damp patches had developed. Both *Lepraria lesdainii* and *Leptogium plicatile* are new county records.

In all a total of 78 species was recorded, 59 for Sharnbrook Church, 47 for Felmersham and 50 for Odell, of which 19 represent new county records. My thanks to Keith Palmer and Tom Chester for their visit and species lists.

SPECIES LIST

Acarospora fuscata, **Aspicilia calcarea*, **A. contorta*, **A. subcircinata*, **Bacidia sabuletorum*, **Belonia nidarosiensis*, *Buellia aethalea*, *B. punctata*, *Caloplaca aurantia*, *C. citrina*, **C. crenularia*, *C. decipiens*, *C. flavescens*, *C. holocarpa*, *C. isidiigera*, **C. ruderum*, *C. saxicola*, *C. teicholyta*, **C. variabilis*, *Candelariella aurella*, *C. medians*, *C. vitellina*, **Catillaria chalybeia*, *C. lenticularis*, *Cladonia pyxidata*, *Collema auriforme*, *Diploicia canescens*, **Diplotomma alboatrum*, **Dirina massiliensis* f. *sorediata*, *Haematomma ochroleucum* var. *porphyrium*, *Lecania erysibe*, *Lecania erysibe* f. *sorediata*, *Lecanora albescens*, *L. campestre*, *L. conizaeoides*, *L. crenulata*, *L. dispersa*, *L. expallens*, *L. muralis*, **L. orosthea*, *L. polytropa*, *L. sulphurea*, **L. symmicta*, *Lecidea fuscoatra*, *Lecidella scabra*, *L. stigmatea*, *Lepraria incana*, **L. lesdainii*, **Leproloma vouauxii*, **Leptogium plicatile*, *Parmelia glabratula* var. *fuliginosa*, *P. mougeotii*, *P. sulcata*, *Pertusaria amara*, *Phaeophyscia orbicularis*, *Phlyctis argena*, *Physcia adscendens*, *P. caesia*, *P. grisea*, *Placynthium nigrum*, **Polysporina simplex*, **Porpidia tuberculosa*, *Protoblastenia rupestris*, *Psilolechia leprosa*, *P. lucida*, **Rinodina gemmarii*, *R. teichophila*, *Sarcogyne regularis*, *Trapelia coarctata*, *Tephromela atra*, **Verrucaria baldensis*, *V. glaucina*, *V. nigrescens*, *V. viridula*, *Xanthoria calcicola*, *X. candelaria*, *X. elegans*, *X. parietina*.

* New County Record

FRANCES B.M. DAVIES

WINTER RECORDS OF BATS IN BEDFORDSHIRE

by Joan Childs

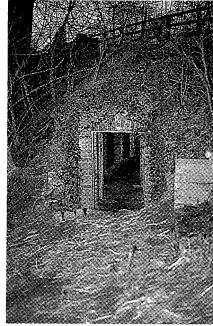
WINTER SURVEY WORK

Bedfordshire lacks any extensive underground sites and relatively few bats are therefore recorded during the winter.

All the known, suitable, underground sites are surveyed three times each winter. In order to keep disturbance to a minimum, the survey team consists of only four people, at least one of whom is licensed for winter bat work.

Most of the sites are ice-houses which were once used for the storage of ice during the summer and were therefore built by lakes from which the ice was removed. The usual design is an entrance tunnel of varying length leading into a dome-roofed chamber whose base extends below the floor of the tunnel. The chambers have usually been filled in to the level of the tunnel for safety. They now provide ideal conditions for hibernating bats.

Locating and arranging access to all the county's ice-houses has been a slow process and is still not complete. A recently published book on ice-houses was used as a reference (Beamon and Roaf 1990), supplemented by information from Bedfordshire County Council.



*Entrance tunnel of Silsoe ice-house
(Photo: J. Childs)*

Bedfordshire ice-houses suitable as bat roosts:

- Ampthill** TL035382 Access arranged. Good condition and complete, but small. Few roost sites available in chamber but a few cracks in entrance tunnel.
- Bedford** TL052497 Access arranged. Opened by Bedfordshire Bat Group on 26 July 1988. Vandalism problems have reduced access options for bats. Good condition and exceptionally long entrance tunnel. Many roost opportunities in tunnel but chamber smooth.
- Bromham** TL015511 Access arranged. Unusual thatched construction attached to dwelling. Access via passage by house. Good condition, few cracks.
- East Hyde** TL134175 Access arranged. Chamber in good condition, tunnel collapsed. No cracks in chamber but a few at junction of tunnel with chamber.
- Milton Bryan** SP972304 Access arranged. Good condition, maintained. 10ft long tunnel leads to small chamber, not filled and very deep. Few crevices, but at junction of tunnel and chamber are two holes in bricks which give access to cavity wall of chamber.
- Moggerhanger** TL135487 Owners not traced. Chamber in good condition, medium length tunnel. Some debris in tunnel and chamber. Suitable cracks in tunnel.
- Shuttleworth** TL144442 Access arranged. Chamber in good condition and not infilled, tunnel short. Chamber lined with wooden boarding for storage of apples. Cracks only at junction of tunnel with chamber.
- Silsoe** TL085364 Access arranged. Exceptional ice-house with very long tunnel and large chamber, not infilled. Many roost opportunities in tunnel and parts of dome.
- Southill** TL142421 Access arranged. Good condition with long tunnel and complete and unfilled chamber dropping to conical base. Quite a few crevices, particularly in tunnel.
- Tingrith** TL006327 Access difficult to arrange with owner. Good condition, short tunnel with a few cracks. Unfilled chamber.
- Woburn** SP963319 Access arranged. Short tunnel with large unfilled chamber. Beginning to collapse. Many cracks and crevices and beam holes in chamber.

Other underground sites suitable as bat roosts:

- Aspley Guise** SP935372 Access arranged. Purpose built hibernaculum. Many roosting opportunities (see Braystone hibernaculum below).
- Barton** TL077297 Access arranged. Entrance grilled and padlocked but suffers vandalism. Forked lime kiln tunnel in good condition and with grilled vertical shaft. Good number of potential roost crevices.
- Linslade** SP917260 Access arranged. Wine cave in sandstone, good condition with short entrance tunnel, few cracks.
- Whipsnade** SP997174 Access arranged. Disused bear pit fitted with hibernation boxes.

Other Bedfordshire ice-houses checked but not suitable as bat roosts or to which access is impossible:

- Amphill Park (= Houghton House) TL039395 Filled in.
- Beadlow Manor TL109380 Presumed destroyed in building golf course.
- Chicksands USAF Base TL117394 Destroyed, only hollow remains.
- Clarendon School, Haynes TL080412 Demolished.
- Hazells Hall, Everton TL190501 Only pit remains.
- Henlow Grange TL186381 Destroyed.
- Howbury Hall TL100516 Access not allowed by owner. Apparently in a poor state of repair.
- Linden Water, Eversholt SP980325 No trace found.
- Linslade SP917260 Filled in except for top 20cm full of vegetation.
- Little Staughton Lodge TL097619 Destroyed.
- Lower Caldecote (behind Tower Cafe on A1) TL179466 No trace found.
- Melchbourne Park TL029653 Only a mound remains.
- Orchard Grange, Old Warden TL138440 Roof of chamber has collapsed and is open to the elements.
- Stockwood Park, Luton TL084197 Demolished.
- Picts Hill House, Turvey, SP939528 Not located, believed destroyed.

Table 1 lists the bats recorded in underground sites between 18 February 1989 and 13 December 1992.

Table 1. Bats in underground sites 1989—1992

	18.2.89	16.12.90	11.2.91	24.2.91	22.12.91	12.1.92	9.2.92	12/13.12.92
Amphill	—	—	—	—	—	—	0	—
Aspley Guise	—	—	—	—	0	1L	1L	0
Barton	0	1L	0	0	1L	0	0	2N
Bedford	—	—	—	—	0	0	0	0
East Hyde	—	—	—	—	—	—	—	0
Milton Bryan	—	—	—	—	—	—	—	0
Moggerhanger	—	—	—	—	—	—	—	2L
Shuttleworth	0	0	0	0	1L	1L	0	0
Silsoe	4N	2D 3N	1D 1L 5N	1D 7N	2D 11N	1D 9N 1U	1D 9N	6N
Southill	—	—	—	—	—	0	1N	1L
Tingrith	0	—	—	—	—	—	—	—
Woburn	3N	1D 1N	0	1L	3N	1N	1D 10N	5N 1U

Key: D = Daubenton's bat, L = Brown long-eared bat, N = Natterer's bat, U = Unidentified bat, 0 = No bats, — = not checked.

THE BRAYSTONE HIBERNACULUM

The scarcity of known winter sites for bats in the county prompted the Bat Group to build its own purpose-built hibernaculum, masterminded by Philip Clarke.

The hibernaculum was built on the Clarke's farm in Aspley Guise which has been turned over to wildlife conservation. The mosaic of habitats; meadows, hedgerows and ponds and a nearby flooded gravel pit, made this an ideal, secure site. The hibernaculum was built along a flooded ditch as bats are known to fly along such linear features. The ditch lies between the village where bats are known to roost in the church and the gravel pit where bats feed. Pipistrelles, noctules, Daubenton's and brown long-eared bats have all been recorded locally.

Construction of the hibernaculum, based on the design of an ice-house, began on 18 November 1990. The main chamber was made out of concrete blocks covered with a railway sleeper roof and the entrance tunnel was formed from concrete manhole rings. The whole structure was then covered by a mound of earth. The entrance tunnel opens into the flooded ditch in order to keep up the humidity and deter predators from entering.



*The Braystone hibernaculum under construction
(Photo: J. Childs)*

The hibernaculum was completed on 7 April 1991 and officially opened by David Anderson, Chairman of the Bedfordshire Natural History Society, on 8 July 1991. The toast was made in Black Bat bitter, donated by Banks and Taylor Breweries.

On 12 January 1992 a brown long-eared bat was discovered in a crack in the roof of the hibernaculum. It was still there on the next survey on 9 February 1992. It is a great credit to everyone involved that the hibernaculum was used in its very first winter. Monitoring will continue in forthcoming winters.

The project would never have happened without the support and sponsorship of many people and companies. The Bedfordshire Bat Group is very grateful to them all.

Construction team: Tony Aldhous, David Anderson, Clive Banks, Steve Cham, Joan Childs, Brian Clarke, Philip Clarke, David Hatherill, Peter Leeson, Mark Powell, John Quinton, Tony Tingell, Carl Welch.

Refreshments: Pat Clarke and Mary Sheridan.

Plaque: Cranfield Institute of Technology (thanks to Dave Allen).

Design advice: Phil Richardson and Bob Stebbings.

Grant: Bedfordshire County Council.

Materials: Geoff Barret of Aspley Guise; Blue Circle Cement; Broadbent and Smith of Aspley Guise; John Chamber's Seeds; Dawson's of Flitwick; ECC Quarries of Croft; GF and X Hartigan of Newport Pagnell; England Hopkins of Woburn Sands; Tecan Components.

BAT HIBERNATION BOXES

In sites where conditions are suitable for bat hibernation but there are no suitable cracks or crevices into which bats can squeeze, artificial gaps can be provided in the form of fan shaped hibernation boxes.

Four such boxes, built by Philip Clarke, were erected in the disused bear pit at Whipsnade Zoo by keeper Cliff Tack. The walls of the bear pit are perfectly smooth and these boxes should provide secure roost sites. The boxes will be monitored during the winter for bat presence. It is hoped to equip other sites with similar boxes.



Bedfordshire Bat Group work party at Whipsnade Zoo with summer boxes and fan shaped winter boxes. Left to right: Philip Clarke, Bob Cornes, Philip Irving, Mark Best, Cliff Tack.

(Photo: J. Childs)

REFERENCE

BEAMON, S.P. and ROAF, S. 1990 *The ice-houses of Britain*. Routledge.

SITES

Report of the Recorder

SITES OF SPECIAL SCIENTIFIC INTEREST

No new areas have been designated by English Nature during the year and no significant damage has been reported from sites. There has, however, been an increase in management work undertaken at certain sites as a result of the Countryside Stewardship Scheme reported in last year's Journal.

SURVEYS & REPORTS

Flitwick Moor

On Sunday 26th July the Society held a Recording Day at Flitwick Moor. The day was organised as part of the four-year survey (1992-1995) the Society is undertaking of the Moor. Several of the Society's Recorders led groups around the site giving members a chance to learn recording techniques as well as observing some of the special wildlife of this unique habitat in Bedfordshire. Groups looked at during the day included reptiles and amphibians, dragonflies, bugs, butterflies, micro-moths, beetles and flowering plants. The weather was not particularly kind to us with a series of light showers that caused many of the insects to disappear, but one of the site's specialities, the short-winged conehead *Conocephalus dorsalis*, was seen by all participants; this is its only known site in Bedfordshire. In the evening Vic Arnold and David Manning set up a moth trap in the car park while Tony Aldhous led us across the Moor searching for bats. At the end of the survey a full report will be produced but some preliminary notes about a few of the groups that are being studied are given below.

Amphibians and Reptiles The known species of the Moor, Common Toad (*Bufo bufo*), Common Frog (*Rana temporaria*) and Common Lizard (*Lacerta vivipara*) were all recorded on 26th July.

Odonata Historically, the Moor has been recognised as a particularly good site for dragonflies, but this has not been borne out by recent visits. Six species were recorded on the 26th July from the Moor and the River Flit:

Banded demoiselle (*Calopteryx splendens*), Blue-tailed damselfly (*Ischnura elegans*), Azure damselfly (*Coenagrion puella*), Southern hawkler (*Aeshna cyanea*), Migrant hawkler (*A. mixta*), Common darter (*Sympetrum striolatum*).

Extensive removal of trees and opening up sections of the Moor to create areas of open water should assist the dragonfly populations to improve again. Information on distribution and abundance within the Moor and, particularly, breeding locations of these and other species are still needed; please send your records to our Recorder, Steve Cham.

Lepidoptera Fourteen species of butterfly were seen on the 25 and 26th July 1992: Speckled Wood, Wall, Meadow Brown, Gatekeeper, Ringlet, Red Admiral, Small Tortoiseshell, Peacock, Comma, Large White, Small White, Green-veined White, Small Skipper, Large Skipper.

Diptera The hoverflies were last surveyed in detail in 1977/8 by Norman Janes when 58 species were recorded. The site was visited on 13th June and 25th July 1992 by John Kramer and he recorded 24 species; for one of those recorded, *Sphegina kimakowiczi*, Flitwick Moor is the only known site in the County.

Coleoptera The Coleoptera of the Moor are being looked at in detail by our Recorders, Jim Ashby and Wilf Powell. In their first year they recorded 242 species of beetle, ten of which are new to Bedfordshire. The new species, and those which are nationally notable are listed in their Annual Report in this Journal.

If you visit Flitwick Moor, or have kept records of what you have seen there, please let me know so that we can improve on the body of information that we are building up.

Berry Farm, Wootton

This site was reported on briefly in 1991 as being an area of set-aside land operated by Bedford Borough Council (formerly North Bedfordshire Borough Council). The Council asked the Society to record the bird species at the site so that it would be possible to monitor how the bird population changed as the woodland developed. An initial and incomplete survey during 1992 recorded 38 bird species over the 100 acres and, in addition, the presence of eight mammal species were noted. The site at present consists of meadow, stubble fields, fields with weeds and Brassica plants, nine small ponds and hedgerows and ditches.

Marston Vale Community Forest

During the year the Society was invited to join the Natural Environment Working Group for the Community Forest Project in order to contribute to the report on the wildlife interest and potential of the region. The first priority of the group was to identify existing areas of good wildlife habitat to ensure their retention and effective management within the proposals. Three sites of national importance for wildlife lie within the area, Hanger Wood SSSI, Kings Wood and Glebe Meadows SSSI at Houghton Conquest and Marston Thrift SSSI. There are also about 40 County Wildlife Sites within the area, identified by a project carried out by the Beds & Cambs Wildlife Trust. Although the water bodies of the Marston Vale are regularly visited by birdwatchers, their significance to birds had not been analysed. Our Bird Recorder, Dave Ball, made a valuable contribution to the report by collating the BNHS records of selected wintering and breeding birds at the different water bodies to give an objective indication of their significance locally and nationally. A botanical survey using the National Vegetation Classification was also made of the flooded brick pits by consultants to identify in particular the aquatic and marginal plant communities represented locally.

MANAGEMENT WORK

The Society continues to maintain its interest in Maulden Woods and, on 2nd February 1992, a group of members carried out clearance work at Tom's Pond, by agreement with the Forestry Commission and English Nature. The site had become very overgrown by overhanging trees and shrubs. This is a site that the Society has had a long involvement in and it is good to see the relationship with the Forestry Commission continue.

ACKNOWLEDGEMENTS

I would like to thank everyone who has given me information on sites during the year, species lists, information on management work etc. If you regularly visit and record information about an area of land near where you live, do let me know so that I can keep it on file. If we are asked for information on a site or find that one is proposed for development then we will know who we can contact quickly for information. I would also be very pleased to advise you on sites near where you live that need additional recording work.

ROSEMARY BRIND

RECORDERS

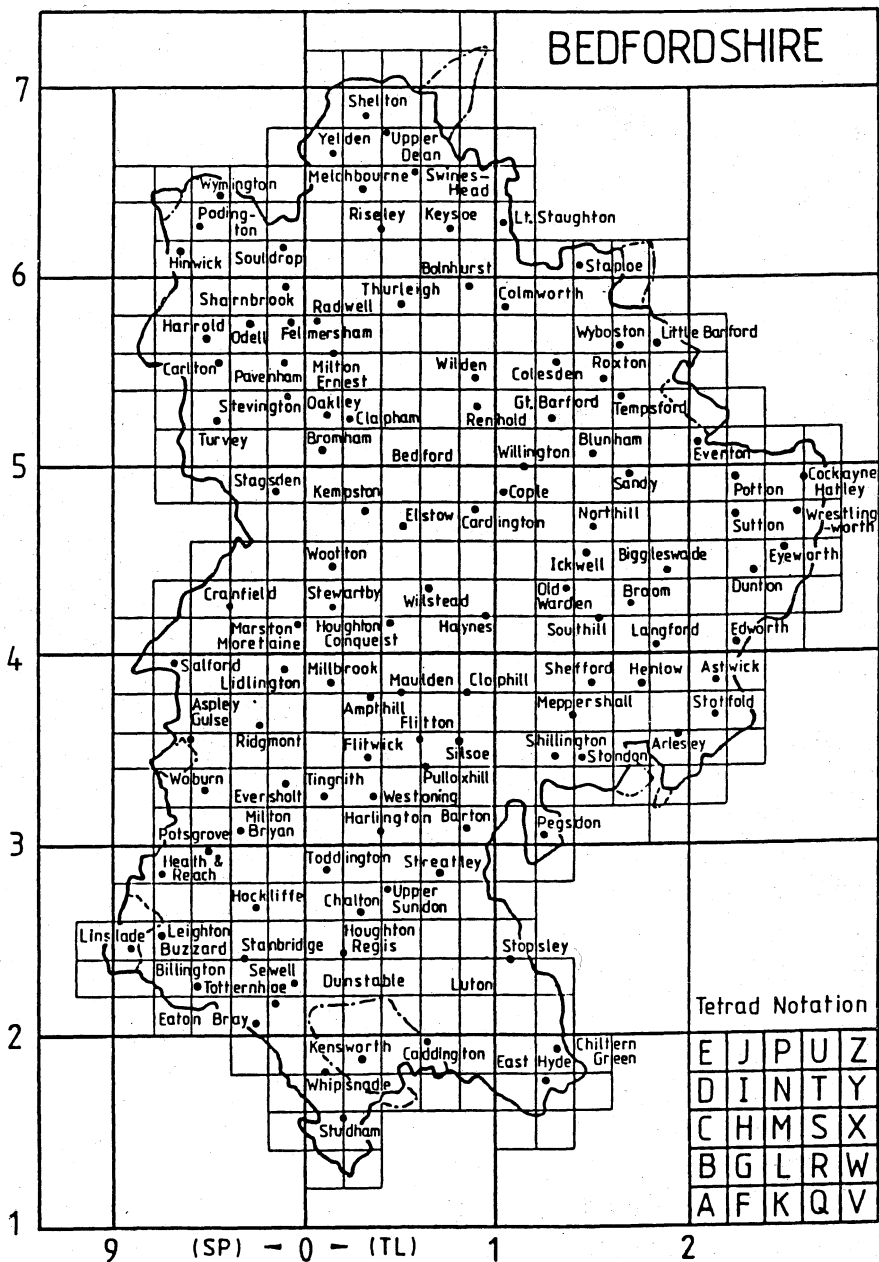
- Meteorology: Mr M.C. Williams, 2 Ivel Close, Barton-le-Cley, Bedford MK45 4NT
Geology and Palaeontology: Mr P. Smart, 46 Brecon Way, Bedford MK41 8DD
Mammals: Mr C. Tack, 1 Gate Cottage, Whipsnade Wild Animal Park, Dunstable LU6 2LR
Mammals (Bats): Ms J. Childs, "Myotis", 144 Queens Drive, Bedford MK41 9JG
Dr A. Aldhous, "Myotis", 144 Queens Drive, Bedford MK41 9JG
Birds: Mr D. Ball, 254 Goldington Road, Bedford MK40 3EB
Reptiles and Amphibians: Mrs H.M. Muir-Howie, "Vivarium", 19 Molivers Lane, Bromham, Bedford MK43 8JT
Fish: Mr H. Winter, 39 Elgar Path, North Street, Luton LU2 7RJ
Harvestmen and Pseudoscorpions: Dr A.J. Rundle, 219 Mortlake Road, Kew, Richmond, Surrey TW9 4EW
Dragonflies: Mr S. Cham, 45 Weltmore Road, Luton LU3 2TN
Bugs: Dr B.S. Nau, 15 Park Hill, Toddington, Dunstable, Beds LU5 6AW
Lacewing Flies: Dr B. Verdcourt, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB
Moths (macro): Mr V.W. Arnold, 96 St. Augustines Avenue, Luton LU3 1QE
Moths (micro): Mr D.V. Manning, 27 Glebe Rise, Sharnbrook, Bedford MK44 1JB
Hoverflies: Miss L. Smart, 273 Park Street, Luton LU1 3HH
Ants: Dr A.J. Rundle, 219 Mortlake Road, Kew, Richmond, Surrey TW9 4EW
Beetles: Mr J.E. Ashby, 10 Buckwood Avenue, Dunstable, Beds LU5 4PE
Dr W. Powell, 18 Staveley Road, Dunstable, Beds LU6 3QQ
Woodlice, Centipedes and Millipedes: Dr A.J. Rundle, 219 Mortlake Road, Kew, Richmond, Surrey TW9 4EW
Crayfish: Mr H. Winter, 39 Elgar Path, North Street, Luton LU2 7RJ
Flowering Plants, Ferns and Fern Allies: Mr C.R. Boon, 7 Duck End Lane, Maulden, Bedford MK45 2DL
Lichens: Mrs F.B.M. Davies, "Rose Cottage", 69 The Hill, Wheathampstead, St. Albans AL4 8PR
Fungi: Dr D.A. Reid, 38 Norfolk Way, Elmer Sands, Middleton-on-Sea, West Sussex PO22 6JF
Sites: Miss R. Brind, 46 Mallard Way, Bedford MK41 7QS
Bird Ringing Co-ordinator: Mr D.S. Woodhead, 26 Batcheldor Gardens, Bromham, Bedford MK43 8SP
Where a species is not covered by one of The Society's Recorders, please pass the record on to Miss R. Brind, Bedford Museum, Castle Lane, Bedford MK40 3XD.

THE SOCIETY

The Bedfordshire Natural History Society was formed in 1946 when a group of local naturalists got together with the aim of giving the recording of natural history within the county borders a focal point. The Society now has a group of over twenty recorders who gather information on different disciplines of natural history and publish annual reports in the journal of the Society, *The Bedfordshire Naturalist*. Other publications by the Society include the *Bedfordshire Bird Atlas*, mapping the distribution of breeding birds within the county on a tetrad basis, and the more recent *Bedfordshire Wildlife* which gives a broad overview of our wildlife habitats, flora and fauna. Members of the Society also receive a quarterly newsletter, *The Muntjac*, and a programme of field meetings both locally and further afield. Throughout the winter a series of illustrated talks are arranged in different locations around the county; these are usually free to members and cover a wide variety of natural history related topics.

As a respected authority the advice of the B.N.H.S. is often sought when planned work may be detrimental to the local environment and its members regularly contribute information to nationally organised surveys. Membership is open to all, whether resident in Bedfordshire or not and whether novice or expert. Further information may be sought from:

The Bedfordshire Natural History Society
c/o Bedford Museum Castle Lane Bedford MK40 3XD



Tetrad map of Bedfordshire showing the main towns and villages