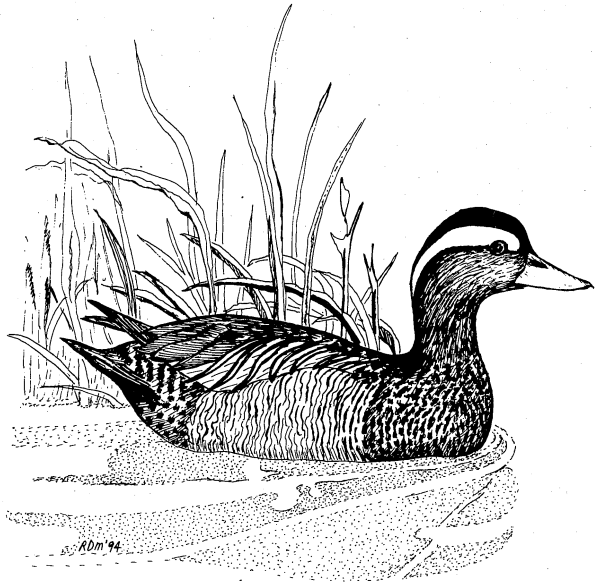


The Bedfordshire Naturalist 48



Journal
for the year 1993

Bedfordshire Natural History Society 1994
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BEDFORDSHIRE NATURAL HISTORY SOCIETY 1994

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Mr K. Sharpe, 14 Russet Close, Stewartby MK43 9LG

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Mr J. Adams
Mrs G. Dickens
Dr P. Madgett

Ms J. Childs
Mr D. Green
Mr J. Niles
Mr M. Williams

Mr R. Dazley
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Mr P. Wilkinson

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Mrs R. Madgett, 27 Mardle Road, Linslade, Leighton Buzzard LU7 7UR

Honorary Librarian:

Mr P. Soper, 8 The Causeway, Clophill MK45 4BA

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THE BEDFORDSHIRE NATURALIST

No. 48 (1993)

Edited by R.A. Brind

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Front cover: Garganey — Ray Moore

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Bottom: the face of a worker wasp *Photos: Richard Revels*
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Bottom: open oak woodland with a ground flora of bracken in the sandy area *Photos: Bernard Nau*
- The copyright remains that of the photographers.**

Table: Membership of the Society 1989-1993

| | 1989 | 1990 | 1991 | 1992 | 1993 |
|-----------------------|------------|------------|-------------|-------------|-------------|
| Ordinary Members | 356 | 360 | 348 (65 SC) | 435 (72 SC) | 450 (72 SC) |
| Associate Members | 42 | 52 | 46 | 62 | 68 |
| Student Members | 6 | 3 | 3 | 4 | 5 |
| Corporate Members | 9 | 8 | 10 | 12 | 13 |
| Life Members | 4 | 5 | 5 | 5 | 5 |
| Honorary Life Members | 2 | 2 | 2 | 1 | 1 |
| Total | 419 | 430 | 414 | 511 | 542 |

(SC=Senior Citizen)

Membership figures for 1992 and 1993 cover all members of the Society including those who are members of the Bird Club only.

REPORT OF COUNCIL FOR 1993

The Society's programme of events in 1993 maintained the standard and variety of previous years. There were 17 indoor meetings in the two winter periods, and a total of 37 field meetings both within and outside the county. One of the more remarkable occasions was an evening meeting in May at the new wader scrape at Dunstable Sewage Works, provided by Anglian Water and opened earlier that year. Nearly one hundred members and friends turned out to celebrate the successful completion of this venture and to see for themselves what had been achieved. Regular monthly access has since been arranged so that all members of the Society have opportunities to visit this secured area. Two other meetings of note were a joint meeting with the Bedfordshire & Cambridgeshire Wildlife Trust, addressed by Oliver Rackham on the subject of "Woodland in the Long Term", and another joint meeting, with the Sheffield based Sorby Natural History Society, in a successful search for mountain hares in the Peak District.

On the 23rd March Society members attended a ceremony in the grounds of Luton Museum, Wardown Park, Luton where a Small-leaved Lime was planted in memory of Dr John Dony (1899-1991), a very well known and long-standing member of the Society. John Dony's widow, Chris Dony, was also present as well as two founder members of the Society, Peter Taylor and Bernard Verdcourt. A plaque to commemorate the event was subsequently erected. Later in the year, on Sunday 6th June, a John Dony memorial field meeting was held jointly with the Hertfordshire Natural History Society at Sharpenhoe Clappers. Council would again like to acknowledge the enormous contribution which John Dony made to the Society and to the recording of the flora of Bedfordshire.

Two longer trips were organised during 1993 for Society members, a weekend in the New Forest in June, and a two week trip to The Gambia in West Africa in October/November, probably the most distant and exotic Society trip to date.

The Bedfordshire Bird Club was formally constituted as the Society's ornithological section in February 1993 and has completed a very successful year of meetings both indoor and outdoor. Support for the club has continued strongly since its initial formation, with indoor meetings regularly attracting in excess of eighty members. A tradition was also re-established with the holding of the highly successful 7th Bedfordshire Bird Conference at Silsoe College, with nearly 100 participants.

The Society's 47th Journal, published in 1993, maintained the standard and size of the previous year, and Council are also pleased to record the successful reprinting of Steele-Elliott's *Vertebrate Fauna of Bedfordshire* (now out of copyright).

One further development of note during 1993 was the establishment of a grants system, allowing members to apply for financial assistance in the carrying out of research relevant to the County. Council hopes that this will provide a useful boost to recording and survey work by members that might not otherwise be possible.

As always in any active and flourishing Society, it is the work of a small number of individuals which contributes to the Society's well being. During 1993 two of the Society's long standing recorders tendered their resignations, Alan Martin (Recorder for Butterflies) and Alan Outen (Recorder for Bryophytes). Council wishes to place on record the appreciation of the Society for their dedicated work as recorders over many years. At the same time Council would like to thank a number of Society members who have agreed to become recorders during the past 15 months: Lesley Smart (Hoverflies), Harvey Winter (Freshwater crayfish), Charles Baker (Butterflies), Chris Malumphy (Homoptera), and Kevin Sharpe (Orthoptera). Three members of Council have also decided not to stand for re-election, Lesley Smart, Dr Tony Aldhous, and Dr David Allen. In addition, John Childs, Hon. Scientific Secretary for the past two years, John Burchmore, Hon. Treasurer for the past four years, and Mike Williams, Hon. Secretary for the previous six years, are also standing down. Carol Aldridge, who has put in many hours as Newsletter editor since mid 1990, has relinquished this position which has been filled by Ro Madgett. Council would like to express its thanks for the hard work of all these individuals on behalf of the Society.

MIKE WILLIAMS
Hon. Secretary

PROCEEDINGS

Indoor Meetings

- 666th Ordinary Meeting** 6th January, Bedford. "Conservation in Bedfordshire" by Mr R. Woolnough, Director of Conservation for the BCWT. Chair: Mr D. Kramer.
- 667th Ordinary Meeting** 13th January, Luton. "Butterflies of Bedfordshire and Britain" by Mr R. Revels. Chair: Mr V. Arnold.
- 668th Ordinary Meeting** 19th January, Dunstable. "Barn owls — natural history and conservation" by Mr M. Chester, Hawk & Owl Trust. Chair: Dr P. Madgett.
- 669th Ordinary Meeting** 26th January, Maulden. Twitchers' evening. Joint meeting with Bedfordshire Bird Club. Chair: Mr D. Ball.
- Special General Meeting** 2nd February, Flitwick. Revision of Society's rules; Bird Club subscription rates.
- 670th Ordinary Meeting** 4th February, Bedford. "Chinese Water Deer in Bedfordshire" by Dr B Nau. Chair: Mr S. Cham.
- 671st Ordinary Meeting** 16th February, Dunstable. "More blasted trees — the tropical forests of Borneo and the Malay peninsula" by Mr D. Toomer. Chair: Mr R. Dazley.
- 672nd Ordinary Meeting** 25th February, Aspley Guise. "Current Affairs in Beds. — Countryside Stewardship and the county's heathland" by Ms S. Nicholson, Countryside Commission and Mr J. Comont, Ecologist, Beds. County Council. Chair: Miss R. Brind.
- 673rd Ordinary Meeting** 3rd March, Bedford. "Some spring flowers of European mountains" by Mr J. Dickens. Chair: Mr C. Baker.
- 674th Ordinary Meeting** 16th March, Dunstable. "Rocks in close-up" by Dr P. Madgett. Chair: Ms J. Childs.
- Annual General Meeting** 24th March, Maulden.
- 675th Ordinary Meeting** 7th October, Bedford. "Woodland in the long term" by Dr O. Rackham. Joint Meeting with BCWT. Chair: Mr J. Niles.
- Special General Meeting** 19th October, Dunstable. Subscription rates for 1994.
- 676th Ordinary Meeting** 19th October, Dunstable. "A naturalist in Malawi" by Mr D. Stead. Chair: Mrs R. Madgett.
- 677th Ordinary Meeting** 28th October, Luton. Members' evening. Chair: Mrs G. Dickens.
- 678th Ordinary Meeting** 3rd November, Bedford. "Ladybirds" by Dr M. Majerus. Joint Meeting with Beds. & Northants. Branch of Butterfly Conservation. Chair: Mr C. Baker.
- 7th Bedfordshire Bird Conference** 13th November, Silsoe. Organiser: Mr P. Trodd.
- 679th Ordinary Meeting** 16th November, Dunstable. "Restoring chalk grassland by traditional grazing methods" by Mr H. Horne, National Trust shepherd. Chair: Mr D. Morgan.
- 680th Ordinary Meeting** 23rd November, Maulden. "A second pot pourri of birds" by Mr P. Wilkinson. Chair: Mr D. Green.
- 681st Ordinary Meeting** 2nd December, Bedford. "Bats in churches" by Ms G. Sargent. Chair: Ms. J. Childs.
- 682nd Ordinary Meeting** 22nd December, Aspley Guise. Social evening. Organisers: Mr and Mrs D. Anderson.

Field Meetings

- Slimbridge, Glos** 16th January. Visit to the Wildfowl & Wetlands Trust Centre. Leader: Mr D. Green.
- Hunstanton, Norfolk** 7th February. To see birds, rocks and sealife. Leader: Dr P. Madgett.
- Sheffield** 7th March. To see Mountain hares. Joint meeting with Sorby Natural History Society. Leader: Mr D. Anderson.
- King's Wood, Heath and Reach** 18th April. To see early spring flowers. Leaders: Mr P. Clarke and Mr P. Irving.
- Blows Downs** 25th April. Looking for spring migrants. Leader: Mr R. Dazley.
- Priory Country Park** 2nd May. "Migration Day" — conducted bird walks for the public. Joint meeting with Bedford RSPB group.

- Maulden Woods** 9th May. Dawn chorus. Leader: Mr P. Trodd.
- Mid Bedfordshire** 10th May. Badger sett watches. Leader: Mr R. Cornes.
- Norfolk Brecklands** 15th May. To follow the "Great Eastern Pingo Trail" observing ice age permafrost patterns and their natural history legacy. Leader: Dr P. Madgett.
- Dunstable Sewage Treatment Works** 18th May. Visit to the new wader scrape.
Leader: Mr P. Trodd.
- Minsmere, Suffolk** 23rd May. To visit the RSPB reserve. Leader: Mr M. Williams.
- Grand Union Canal, Old Linslade** 25th May. Evening walk along the banks of the canal. Leader: Mrs M. Sheridan.
- Whipsnade Wild Animal Park** 3rd June. Looking for bats in the bat boxes. Joint meeting with Bedfordshire Bat Group. Leaders: Ms J. Childs and Dr A. Aldhous.
- Rothamsted Experimental Station, Harpenden, Herts.** 5th June. Visit to the 150th Anniversary Open Day. Leader: Mr C. Baker.
- Sharpenhoe Clappers and Markham Hills** 6th June. John Dony Memorial meeting looking at botany on the chalk downland. Joint meeting with Hertfordshire Natural History Society.
Leader: Mr C. Boon.
- Wavendon Heath** 9th June. Evening walk. Leader: Mr P. Smith.
- Epping Forest, Essex** 13th June. Visit to Wake Valley Pond to observe dragonflies.
Leader: Mr S. Cham
- West Wood, nr Souldrop** 15th June. To look at coppice management and general natural history.
Leader: Mr M. Powell, Resident Forester.
- New Forest** 18th-20th June. Weekend visit based at the Out of Town Centre at Beaulieu. Leader: Dr P. Madgett.
- Norfolk and Suffolk** 27th June. A visit to the brecklands to look at birds. Leader: Mr R. Moore.
- Cooper's Hill NR, Ampthill** 3rd July. Looking at heathland flora. Leader: Mr R. Cornes.
- Marston Thrift** 4th July. Observing butterflies in the woodland. Leader: Mr D. Smith.
- Marston Thrift** 9th July. Moth trapping and identification evening. Leader: Mr V. Arnold.
- College Lake Wildlife Centre, Pitstone, Bucks.** 10th July. A return visit to this habitat creation project. Leader: Dr P. Madgett.
- Chicksands Wood** 18th July. Looking at butterflies and their habitats. Leaders: Mr J. Adams and Mr D. Parsons.
- Whipsnade Wild Animal Park** 3rd August. Checking bat boxes. Joint meeting with the Bedfordshire Bat Group. Leaders: Ms J. Childs and Dr A. Aldhous.
- Odell Great Wood** 7th August. Studying lacewings and other insects. Leader: Dr B. Verdcourt.
- Aston Rowant NNR, nr. Chinnor, Oxfordshire** 14th August. Observing chalk downland butterflies. Joint meeting with the Beds. and Northants. branch of Butterfly Conservation.
Leader: Mr C. Baker.
- Old Warden** 29th August. Circular walk around Old Warden, Northill and Ickwell Green. Leader: Mr J. Knowles.
- Dunstable Downs Countryside Day** 5th September. Exhibiting at this major countryside event.
- Cley, Norfolk** 12th September. Watching birds in north Norfolk. Leader: Mr E. Newman.
- Maulden Wood** 19th September. Small mammal trapping. Leader: Mr D. Anderson.
- Westonbirt Arboretum, Glos.** 10th October. Leader: Mr J. Adams.
- Ashridge, Herts** 17th October. Watching the deer rut. Leader: Mr S. Cham.
- Gambia** 24th October — 7th November. Leader: Mr M. Williams.
- King's Wood, Heath and Reach** 31st October. Annual fungus foray. Leader: Dr D. Reid.
- Norfolk** 20th November. Birdwatching on east Norfolk coast. Leader: Mr W. Drayton.
- Ashridge, Herts** 11th December. Scale insects and other overwintering invertebrates. Leader: Dr C. Malumphy.
- Woburn Park** 26th December. A Boxing Day walk through the Park. Leader: Mrs M. Sheridan.

REPORT OF THE TREASURER

The Society received grants towards the publication of the Journal for £600 from Bedfordshire County Council and for £300 from Bedford Borough Council. We also received a grant from the Peter Smith Charitable Trust For Nature for the cost of the cover of the Vertebrate Fauna.

Our investment in the accumulation units for the equities investment fund for charities (M & G Charifund) increased substantially in value during the year. Please note that although Charifund has a good track record it is possible for the value of this type of investment to go down as well as up.

J.D. BURCHMORE

Hon. Treasurer

INCOME AND EXPENDITURE ACCOUNT: FOR THE YEAR ENDED 31st DECEMBER, 1993

INCOME — Current Account

| 1992 | 1993 |
|-------------|-------------|
| £ | £ |
| 3144 | 4430 *1 |
| 160 | 43 |
| 87 | 193 |
| 168 | 390 |
| 720 | 1219 |
| 1809 | 85 |
| — | 975 |
| <u>6088</u> | <u>7335</u> |

EXPENDITURE — Current Account

| | |
|---|-------------|
| ADMINISTRATION | |
| 26 | 30 |
| 69 | 71 |
| 131 | 250 |
| — | — |
| 20 | 20 |
| 246 | 371 |
| MEETINGS | |
| 279 | 253 |
| 164 | 136 |
| 318 | 328 |
| — | 20 |
| — | 931 |
| 761 | 1668 |
| SCIENTIFIC | |
| 3617 | 2432 |
| 25 | — |
| 50 | 31 |
| 3692 | 2463 |
| PUBLICITY/DEVELOPMENT/MEMBERSHIP | |
| 560 | 804 |
| 96 | 420 |
| 63 | 302 |
| 442 | 34 |
| 1161 | 1560 |
| 143 | 143 |
| DEPRECIATION OF EQUIPMENT | |
| 85 | 1130 |
| <u>6088</u> | <u>7335</u> |

PUBLICATIONS ACCOUNT

| | £ |
|-----------------|--------------|
| Brought forward | (328) |
| Income | 1219 *2 |
| Expenditure | 1390 |
| | <u>(499)</u> |

INCOME other than Current Account

| | |
|-------------|-------------|
| 1745 | 1798 |
| 500 | 500 |
| 193 | 166 |
| 148 | — |
| — | 210 |
| <u>2586</u> | <u>2674</u> |

EXPENDITURE other than Current Account

| | |
|-------------|------------|
| 500 | — |
| 602 | — |
| — | 151 |
| <u>1102</u> | <u>151</u> |

BALANCE SHEET AS AT 31st DECEMBER 1993

| FIXED ASSETS | COST DEPRECIATION | | |
|----------------|-------------------|------|------------|
| | Total | Year | |
| Mammal traps | 50 | 50 | 5 |
| Display boards | 371 | 140 | 20 |
| Display table | 69 | 21 | 7 |
| Mist nets | 555 | 333 | 111 |
| | | | <u>143</u> |
| | | | <u>501</u> |

CURRENT ASSETS

| | |
|-------|-------|
| 1311 | 1247 |
| — | 485 |
| 540 | 2893 |
| 20716 | 23445 |
| 3000 | 3000 |
| 3000 | 3000 |
| 10938 | 15620 |
| 40149 | 50191 |

CURRENT LIABILITIES

| | |
|--------------|--------------|
| 160 | 1702 |
| <u>39989</u> | <u>48489</u> |

Notes: *1 Includes 1994 Subscriptions of £882.
*2 Publications account includes Vertebrate Fauna, cost £1348 sales to date £956.75. The unsold stock is included in the Current assets at cost.

The Current account includes Income of £2912 and Expenditure of £2084 in respect of the Bird Club.

J.D. Burchmore
Hon. Treasurer

M. and D. Reading
Honorary Auditors

METEOROLOGY

Report of the Recorder

The Weather of 1993

1993 was a year which provided few outstanding memories as far as its weather is concerned. The first and second winter periods were both mild, though both October and November were noticeably colder than normal. Both spring and summer were either warmer than normal or near average, with no really unusual features. It was not as wet as 1992, but the annual rainfall was still some 35% up on the long term average.

January The cold weather of the preceding December persisted for the first four days of January, and the 2nd was the coldest day of the year with a maximum of just -1.6°C . The month thereafter was very mild and also changeable. It was not quite as warm as in 1990 however (because of the early cold days) or 1975 (the warmest January in the past 40 years). It was also wetter than normal, though not exceptionally so, but the dullest January for at least twenty years.

February February was more variable with daytime temperatures very close to normal, but with nights on the warm side. It was, however, exceptionally dry with around 10mm of rainfall, and the driest February since 1959 (1.5mm).

March Mean temperatures were above normal both by day and by night, but this hides the fact that there were several cold frosty nights at intervals throughout the month. The daytime temperature reached 65°F (18.5°C) on the 15th of the month. With less than half the normal rainfall it was also a sunny month.

April In contrast, April 1993 was dull and wet, with twice the average rainfall and three quarters of the sunshine compared with March. Despite this it was still relatively warm.

May There were many days of winds with an easterly component in May but apart from the first week which was dry and frosty, as might be expected with winds from this quarter, the rest of the month was generally wet with temperatures a little above the norm.

June This was quite a variable month. The first week was warm and dry with daytime temperatures reaching 80°F (26.6°C) on the 8th. Thundery rain on the 9th heralded a particularly wet spell of a stormy nature. The wettest day was the 10th with 30.4mm of precipitation. However, the rest of the month was mostly dry and towards the end of the month temperatures were again as high as 25°C . With the wet mid-month spell, the total rainfall for the month was more than twice the average for June.

July After a dry first week, the rest of the month was changeable with many rainy days, although the total rainfall for the month was close to the long term average. Likewise temperatures were also near normal but, except in the first week, there were no very warm days, and no very cold ones either.

August Temperatures were again near normal. The second half of the month was largely anticyclonic in character, with north to north-easterly winds. Although a dry month generally, the total rainfall was also close to the seasonal average due to two particularly wet days on the 11th and the 21st.

September This was a generally cold month and also quite a wet one with twice the average rainfall for September. The 27th was particularly cold with a daytime maximum of just 7.9°C at Whipsnade, no doubt influenced by its position on the Chilterns. This was the coldest September day generally in the South Midlands since 1918.

October It was a cold October again in 1993, though not quite as cold as 1992, and again wet, particularly on the 12th which recorded over 30mm (1") of rain. Much of the country including Bedfordshire was very waterlogged with localised flooding. There was also a notable frosty spell mid-month with temperatures as low as -5°C and early snowfalls in the north of the country.

November This was the third cold month in a row, particularly from mid-month onwards with persistent high pressure over Russia. There was frost on more than 15 nights with temperatures down to -6°C locally. Light snow fell on three days giving brief snow cover on two mornings, but nothing like the depth which occurred in east coast counties from Kent northwards (up to 10cm). On two days the temperatures never rose above freezing, and it was the coldest November since 1985.

December The trend to colder weather did not continue through December, which was generally mild, though there was a short cold spell with night frosts over Christmas. It was also distinctly wetter than normal.

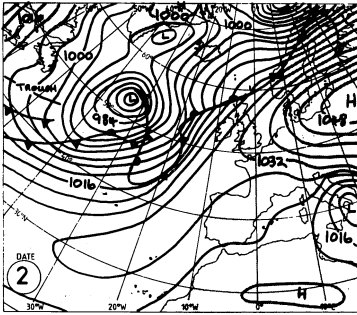


Figure 1. Weather chart for 2nd January 1993, showing a strong continental anticyclone giving the coldest day of the year.

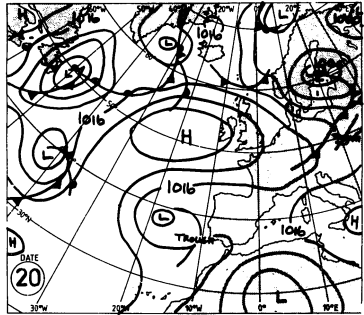


Figure 2. Weather chart for 20th June 1993, one of the wettest days of the year with over 30mm of rainfall.

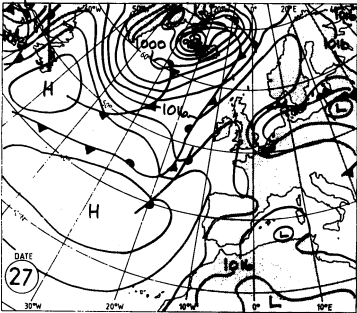


Figure 3. Weather chart for 27th September 1993, the coldest September day since 1918.

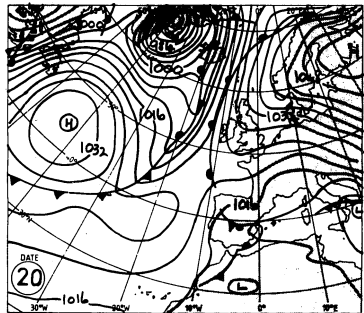


Figure 4. Weather chart for 20th November 1993 at the peak of a notable cold spell.

Table 1. Summary of the weather for 1993 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 (*) | 9.4 | 2.1 | 13.7 | -9.0 | 67.5 | 30.5 | 5 |
| February | 6.5 | 2.0 | 11.0 | -2.7 | 11.8 | 48.0 | 3 |
| March | 11.1 | 2.4 | 18.5 | -4.8 | 16.9 | 138.6 | 8 |
| April | 13.5 | 6.0 | 18.5 | -0.2 | 75.8 | 115.1 | 1 |
| May | 17.0 | 6.0 | 23.3 | -1.1 | 55.8 | 190.6 | 3 |
| June | 20.7 | 9.8 | 26.6 | 5.5 | 100.2 | 218.3 | 0 |
| July | 20.9 | 10.6 | 26.5 | 4.0 | 50.1 | 186.9 | 0 |
| August | 20.6 | 9.3 | 24.9 | 4.0 | 51.8 | 222.3 | 0 |
| September | 16.6 | 8.4 | 23.2 | 2.2 | 91.4 | 108.1 | 0 |
| October | 12.4 | 4.9 | 18.1 | -5.2 | 88.0 | 117.2 | 6 |
| November | 8.0 | 1.0 | 14.7 | -4.8 | 40.9 | 57.0 | 14 |
| December (*) | 8.3 | 2.4 | 14.2 | -2.0 | 82.7 | 41.6 | 8 |
| Year | 13.75 | 5.41 | 26.6 | -9.0 | 732.9 | 1474.2 | 48 |

* Temperature for January 1st-3rd and December 24th-31st are taken from the automatic station at the Silsoe Research Institute.

Summary

In summary, there were few really outstanding weather events in 1993, but the wetness of the autumn period as a whole and the coldness in November are noteworthy. It is also interesting how, after a lengthy period when rainfall was well below normal, the wet weather throughout autumn saw ground water level at much higher levels than had been seen for quite some time.

I would particularly like to thank Chris Boon and his wife for supplying me with detailed weather records for Silsoe from both the college (see Table 1) and the institute. It will be an interesting statistical exercise one day to try and explain some of the more significant variations in readings between stations probably no more than half a mile apart! I am also pleased to report that I have received records from Mrs. Betty Chambers of Meppershall, Dr Nancy Dawson of Ickwell Green, and Mr. J. T. Gell of Riseley. I hope more records may come my way for 1994.

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

MIKE WILLIAMS

GEOLOGY AND PALAEOLOGY

Report of the Recorder

The year commenced with a controversy, a not unknown phenomenon in palaeontology, regarding the dating of the Shenley Limestone heteromorphic ammonoid *Protanisoceras* sp. discovered by the Recorder in Munday's Hill quarry, Leighton Buzzard, in February 1988 (Smart 1989). This is a highly important specimen, being the first record of the genus occurring in the Lower Albian *Leymeriella tardefurcata* Zone, *L. regularis* Subzone.

Eyers (1992) asserts in her paper that the specimen is of mid *Douvilleicerias mammillatum* Zone, *Cleoniceras floridum* Subzone age as described by Casey (1961), basing this revision on second-hand records of *mammillatum* Zone fossils occurring in reworked limestone and listing those mentioned by Owen (1972), and on the reworking of the limestone as a general feature. Such reworking is of course not uncommon, being caused in Lower Cretaceous times when deposited lenticles of *L. regularis* Subzone age were uncovered by currents on the ocean floor, winnowed away, and redeposited with younger sediments including *C. floridum* Subzone material (Smart 1992).

Reworked limestone, however, differs considerably from the true *L. regularis* Subzone rock, containing detritus of Shenley Limestone fragments, broken pieces of iron-pan, rolled and imperfect fossils and fine debris cemented together, and is easily recognisable from the hard, dense true *L. regularis* Subzone matrix which contains perfect and unrolled brachiopods and other fossils although, of course, predator damage to shells occurs. The lithology of the reworked material is therefore markedly different, whether it is in the form of thin blocks or, as is more common, thin lenses up to 150 mm in thickness encased in iron-pan seams. A comprehensive description of this bed is given by Owen (1972).

It is indeed fortunate that the *Protanisoceras* sp. was not extracted from adhering matrix by the Recorder when discovered 4 cm above the basal cortex of a very hard, dense, *in situ* lenticle. This lenticle also occurred near the position in Munday's Hill pit given by Owen as being the location of large, truly *L. regularis* Subzone age Shenley Limestone blocks. Regrettably, the recent expansion of the pit has obliterated this exposure so that *in situ* evidence is no longer available. However, following this assertion by Eyers, the specimen was thoroughly examined at the Natural History Museum Dept. of Palaeontology and the Laboratory, being subsequently confirmed as indigenous to the *L. regularis* Subzone. (H.G. Owen, 1993 — personal communication).

With regard to current work, although once again no data has been received from other sources, the year has proved to be an interesting one. It is unfortunate that the Recorder's Cretaceous field work left no time for possible Jurassic investigations in the north of the county, but this is a situation that has persisted for some time and is unlikely to change in the immediate future.

The Leighton Buzzard area, as in previous years, absorbed most of the time available for field work, and advantage was taken to utilise the new Gault exposures that were the result of last year's quarry extensions. Billington Road quarry (SP 930241) has been extended along its southern side for a distance of some two hundred metres, the clays being removed as overburden and tipped on the western side. Although several visits were made the results were nevertheless rather disappointing, the nodule beds that occur on the eastern side of the pit not being so well in evidence along the southern side of the Gault clay face. A few fossils typical of the *H. dentatus* Zone of the Lower Gault were observed including *H. dentatus* (J. Sowerby) and *Hamites attenuatus* (J. Sowerby). One isolated lateral tooth of *Cretolamna woodwardi* Herman was the only selachian tooth found, despite several months of weathering.

The Gault-Woburn Sands junction bed as described by Wright & Wright (1947), Casey (1961) and Owen (1972), however, was the best exposure for some years and showed a well developed sequence of the beds below the Lower Gault. The pebbly grey-coated phosphatic nodules described by the above authors were frequent, as were many fragmentary ammonites including several specimens of *Leymeriella tardefurcata* (d'Orbigny) and *Hoplites* sp. Two gastropods, *Pleurotomaria* sp., were also obtained from this junction bed although the exact horizon could not be ascertained.

The Lower Gault above the junction bed is thinner than that along the eastern side, where the quarry is excavated into rising ground, and it is this greater thickness of Gault on the eastern boundary that yielded teeth of several selachian and teleost species, often in the nodule bands that occur in this side of the quarry. Unfortunately, the face is now completely overgrown with vegetation and an extension to expose fresh sand deposits in this direction is not scheduled.

Chamberlains Barn Quarry (SP 929265) continued to be extended during the year along the southern part of the present eastern side. This work did not unfortunately extend to the northern boundary of the quarry as first envisaged, being halted approximately 150 metres north of the southern end of the pit. This resulted in a good exposure of the gritty clays of the junction bed described by Owen in his 1972 paper, and yielded to the Recorder several well preserved specimens of the ammonite *Beudanticeras newtoni* Casey in the form of phosphatic casts. This and other species have been recorded previously from the *D. mammillatum* Zone clays in this section, but the new exposure now reveals strata that, due to clay slip and downwash and, of course, vegetation, have been obscured for a number of years.

The Lower Gault clay above the junction bed measures approximately 2.5 metres in thickness in the vicinity of the new extension, while further north it thickens considerably to 8 or 9 metres as the ground rises gently towards Shenley Hill. This greater thickness of Lower Gault contains nodule bands and, as in the Lower Gault of Billington Road pit, has been the source of occasional vertebrate remains and other fossils in past years but is now completely overgrown. It is to be hoped that the present excavation work renews this section in the near future by progressing to the northern boundary of the quarry.

In addition to the ammonites of the junction bed, the new exposure yielded a single juvenile specimen of the crab *Etyus martini* Mantell from the Lower Gault *Hoplites dentatus* Zone above these gritty clays. This species is much the rarer of the two "common" Gault crabs, and is never very large compared to the other species occasionally encountered, this being *Notopocorystes* (*Notopocorystes*) *stokesii* (Mantell) and subspecies. Wright & Collins (1972) state that *N* (*N*) *stokesii* is by far the commonest Gault crab, indeed the commonest fossil crab in this country, while *E. martini* is also common but occurs more sporadically outside south-eastern England. The subspecies occurring most frequently in the Lower Gault of Leighton Buzzard is *Notopocorystes* (*Notopocorystes*) *stokesii stokesii* (Mantell), but from the Recorder's experience both these crabs are far from common as phosphatised fossils, the form that is usually figured in the majority of papers.

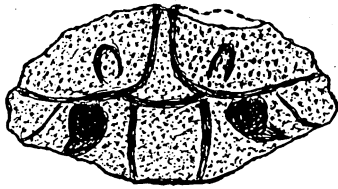
Crushed fossils of delicate invertebrates including ammonites, brachiopods, crab carapaces and other thin shelled organisms are much more frequent in the laminated clays than those that were phosphatised, but invariably disintegrate on weathering and in this respect uncrushed crabs in the Leighton Buzzard Gault are rare.

Both *N* (*N*) *stokesii stokesii* and *Etyus martini* have been recorded from Gault facies in which nodule bands occur and as such have been phosphatised specimens, the two species recorded being illustrated in Figure 1 and a diagrammatic view of *N* (*N*) *stokesii stokesii* in Figure 2.

Nine Acre pit (SP 935277) had also been enlarged and abutted Munday's Hill quarry, but the Gault did not present a very large section due to the tipping of excavated Drift clay and topsoil. The sand excavation in Nine Acre pit is being carried out at a deeper level, the softer sands below the floor of the existing quarry being more suitable for building than the silica "silver sands" above. This deep excavating is also being carried out in Munday's Hill (SP 936279) due partly to increased demand for building sand and also to reduce surface expansion with consequent loss of farmland. Nevertheless, a surface enlargement was carried out at the northwest corner of Munday's Hill pit in the Autumn, the Gault being stripped off for some 100 metres westwards and 250 metres southwards from the northeast corner.

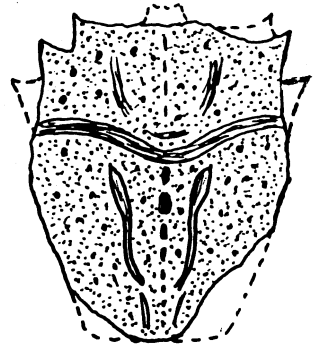
This removal of overburden revealed a fresh section of Lower and Upper Gault and, although for the Recorder's work some weathering is desirable, a single unrecorded selachian tooth was discovered *in situ* some two metres above the base of the Lower Gault. On site, with adhering clay matrix, this appeared to be an anterior tooth of *Cretolamna* sp. with the small lateral cusps destroyed. Subsequent washing to remove the matrix revealed that the tooth was devoid of these cusps, thus excluding it from the genus *Cretolamna* while the slender crown did not indicate a species of *Cretoxyrhina* with their stout cusps and roots.

A thorough search through the Recorder's collection of several hundred Gault selachian teeth failed to assist in identifying the specimen, although one other tooth with similar characteristics was discovered in the *Cretolamna* section and had been obtained from the Lower Gault *H. dentatus* Zone of Munday's Hill quarry several years ago. Drawings of these two specimens were sent to the Dept. of Palaeontology at the Natural History Museum but no comparable material was held in the Albian collection. A visit with the two teeth was made in February 1994 during the preparation of this Annual Report and a thorough search made of all Cretaceous material. Exhaustive comparisons



5 mm

Figure 1 (a)
Etyus martini Mantell 1844.

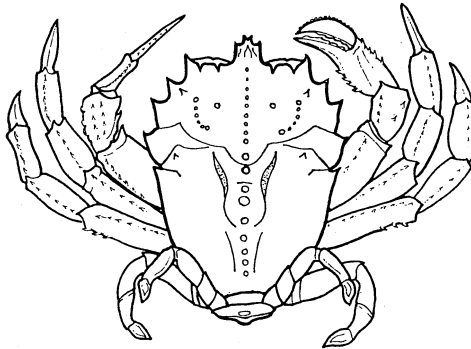


10 mm

Figure 1 (b)
Notopocorystes (Notopocorystes)
stokesii stokesii (Mantell 1844)

Top of well preserved cephalothorax.
Lower Gault dentatus Zone, Chamberlains
Barn Quarry, Leighton Buzzard. (SP 929265)
P.J. Smart coll 15211 M.

Top of incomplete cephalothorax.
Lower Gault dentatus Zone, Munday's Hill
Quarry, Leighton Buzzard. (SP 936279)
P.J. Smart coll 14813 M.



10 mm

Figure 2

Notopocorystes (Notopocorystes) stokesii stokesii (Mantell 1844)

Diagrammatic — restored from many specimens.

After Wright & Collins (1972)

with type specimens in the Upper Cretaceous (Cenomanian) collection coupled with a monograph describing new selachian discoveries from France (Biddle 1993) was successful, and positive determinations made of the two Leighton Buzzard teeth.

Both specimens turned out to be highly important, being determined as *Anomotodon principalis* Capetta and *Paranomotodon angustidens* (Reuss). *A. principalis* had been recorded from the Albian of the Continent but not hitherto from the UK Albian while, prior to the new discoveries described by Biddle, *P. angustidens* was not known below the Cenomanian. These latest discoveries from the Middle Albian of the Saint-Dizier region in north-east France include several new species and range extensions of Upper Cretaceous forms, and the assemblage is therefore of great scientific importance apart from providing excellent comparisons with the UK Albian fauna. At the time of writing (February 1994) both specimens are, therefore, new records from the UK Albian, which includes the Lower and Upper Gault, and are illustrated in Figures 3 and 4.

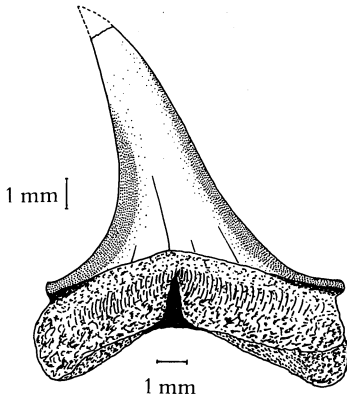


Figure 3 (a)

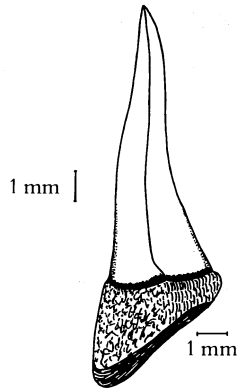


Figure 3 (b)

Figure 3
Anomotodon principalis Capetta.
 Upper anterolateral tooth.
 (a) Lingual view
 (b) Mesial view
 (c) Labial view

Not previously recorded from British Lower Cretaceous.
 Lower Gault, Mundays Hill Quarry,
 Leighton Buzzard.
 P.J. Smart coll. 15088 M.

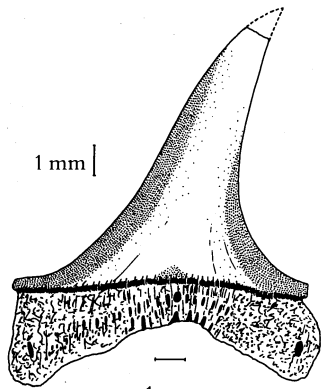
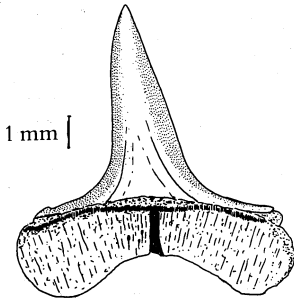
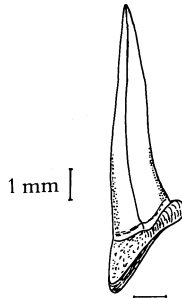


Figure 3 (c)



1 mm
Figure 4 (a)



1 mm
Figure 4 (b)

Figure 4

Paranomotodon angustidens (Reuss)

Upper anterior tooth.

(a) Lingual view

(b) Mesial view

(c) Labial view

Not previously recorded from British Lower Cretaceous.

Lower Gault, Munday's Hill Quarry,
Leighton Buzzard.

P.J. Smart coll. 15325 M.

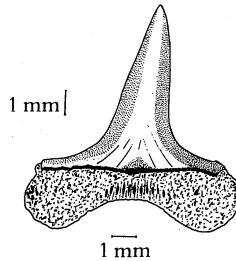


Figure 4 (c)

Another very uncommon discovery made during the summer months at Munday's Hill pit, this time in the weathered surface of the Lower Gault along the eastern side, was the badly damaged incomplete skeleton of an ichthyosaur. Several bone fragments had become visible following heavy rain, being situated approximately 4 metres above the base of the Lower Gault. Careful excavating into the clay stratum revealed more fragments, the majority pulverised into a fine brown powder. Both buried and surface bones were in a similar condition and, despite extreme care with trowel and brush, only three complete but cracked thoracic vertebrae were obtained.

Other remnants separated from the clay over a period of several days included skull fragments, pieces of several ribs, paddle bone fragments with one reasonably preserved ulna and a single small tooth. This rather meagre result indicated that the skeleton was far from complete, representing merely the front portion of the ichthyosaur, and subsequent washing and sieving of the excavated matrix did not produce additional bones or teeth. The single tooth found *in situ* was, however, in fair condition and was taken to the Natural History Museum where it was determined as a tooth of the ichthyosaur *Platypterygius campylodon* (Carter) and is shown in Figure 5.

The shattered condition of the skeleton can without doubt be attributed to its proximity to the heavy earth-moving machinery with their massive caterpillar tracks, when the clay was being stripped off as overburden, while its incompleteness — with thoracic vertebrae, ribs, paddle bones and skull fragments only — could well be the result of an attack by a contemporary predator such as the pliosauroid *Polyptychodon interruptus* Owen that lived in Lower Cretaceous seas. Such partial skeletons, some with pliosauroid bite marks, have been reported from the Kimmeridgian (Clarke & Etches 1992) and the Oxford Clay (Martill *et al* 1994).

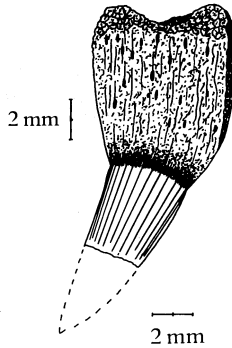


Figure 5

Upper jaw tooth of the ichthyosaur *Platypterygius campylodon* (Carter). Middle Albian Lower Gault clay, *Euhoplites loricatus* Zone, Munday's Hill quarry, Leighton Buzzard. (SP 936279).

P.J. Smart coll. 15188 M.

The disappointment of having only fragments of a very damaged and incomplete fossil reptile to excavate was, however, amply compensated by the discovery in the clay associated with the skeleton of five very rare shark teeth — two Hexanchid shark lateral teeth and three teeth of *Synechodus recurvus* (Trautschold). The discovery of these extremely rare teeth with the ichthyosaur remains is further proof that sharks fed on the carcasses of such reptiles, it being reported that Hexanchid sharks, among others, preyed on plesiosaurs and ichthyosaurs or fed on their carcasses (Ward & Thies 1987). Only six teeth of *Synechodus recurvus* had previously been discovered in the Leighton Buzzard Gault as isolated specimens, the three teeth from the ichthyosaur being an extraordinary record, one of them being illustrated in Figure 6.

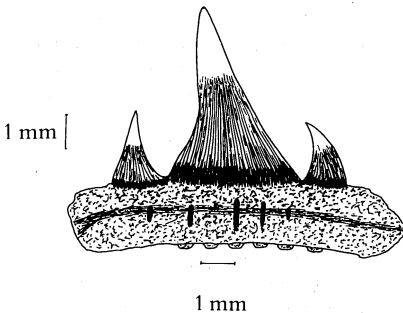


Figure 6 (a)

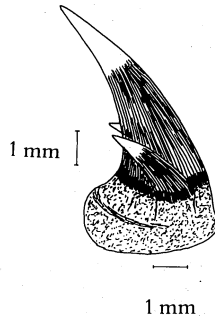


Figure 6 (b)

One of three teeth of Lower Cretaceous selachian species *Synechodus recurvus* (Trautschold) found in association with Ichthyosaur skeleton. Figure 6 (a) Lingual view; 6 (b) Mesial view. Lower Gault. Munday's Hill quarry. P.J. Smart coll. 15187 M.

It is also of great interest to note that one of the two Hexanchid shark teeth found in association with the skeleton is not typical of the Gault species *Notorhynchus aptiensis* (Pictet). The dentition of *N. aptiensis* invariably has extensive, well developed serrations, sometimes described as mesial cusplets, along the mesial cutting edge of the principal cusp. This feature is in itself an indication that a tooth found in the Gault is of this species. One of the teeth discovered did have the expected serrations, but the other was virtually devoid of them with merely two shallow indentations in the mesial cutting edge as shown in Figure 7 (b).

Two other teeth of this type have been discovered by the Recorder during the past few years, both from approximately the same stratum in the Lower Gault *Euhoplites loricatus* Zone. Specialist observations have been inconclusive, a suggestion that such teeth may represent the last lateral file before the true posterior teeth being discounted by the Author after comparing jaws of the extant species *Notorhynchus cepedianus* and *Hexanchus griseus*. Several jaws of these species in the Author's possession show no reduction in the serrations on the posterolateral teeth, and a study of up to a hundred jaws of these two species confirms this (Gordon Hubbell 1993 — personal communication). At the present time, therefore, some doubt exists as to whether these unserrated lateral teeth are from an undescribed species, a varietal form of *N. aptiensis* or a transitional form between the Upper Jurassic *Notidanus muensteri* Agassiz that occurs in the Oxford Clay (Peter Forey 1993 — personal communication).

The two teeth from the skeleton of the ichthyosaur are illustrated in Figure 7 and clearly indicate the difference between the normal principal cusp, or acrocone, and the unserrated form.

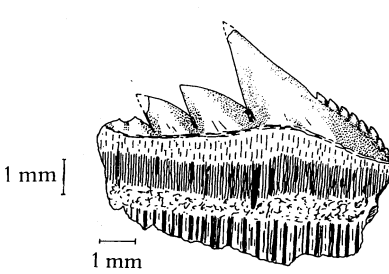


Figure 7 (a)

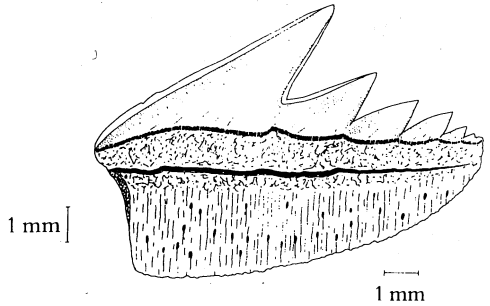


Figure 7 (b)

Figure 7 Hexanchid shark teeth found associated with Ichthyosaur skeleton. Lower Gault *loricatus* Zone (Middle Albian), Munday's Hill quarry, Leighton Buzzard. (SP 936279).

- (a) *Notorhynchus aptiensis* (Pictet). Lower jaw lateral tooth. Acrocone serrations typical of this species. P.J. Smart coll. 15191 M.
- (b) Undetermined Hexanchid lower jaw lateral tooth with unserrated acrocone. P.J. Smart coll. 15190 M.



Plate 1: The John Dony Memorial Meeting on Sharpenhoe Clappers, 6 June 1993.

Photo: Bernard Nau



Plate 2: Daubenton's bat roost at Stockgrove Country Park.

Photo: Joan Childs



Plate 3: The underground wine cellar of a private house at Linslade is an important winter site for Natterer's Bats.

Photo: Joan Childs



Plate 4: The River Great Ouse, Great Barford.

Photo: Mary Sheridan



Plate 5: Caterpillar of the Wormwood moth. A colony of larvae were found feeding on Wormwood in a Stotfold garden, August 1993.

Photo: Barbara Bowskill

The Lower Gault of Mundays Hill pit also yielded a small specimen of the nautiloid *Eutrephoceras clementinum* (d'Orbigny). This is an extremely rare cephalopod, being only the second specimen found by the Recorder in the Leighton Buzzard Gault, the first individual being discovered in the same quarry although further west (Smart 1957). As before, it occurred near the base of the Lower Gault, some 1.5 metres above the junction bed in the *Hoplites spathi* Subzone.

Both Double Arches quarry (SP 938287) and New Trees quarry (SP 930275) were paid single visits to investigate the Gault facies. Both were seriously overgrown with vegetation and the time spent in them was unproductive. New Trees pit is being worked at a deeper level, so that the Gault exposure has remained unchanged for several years. Double Arches is similar, but there is a possibility that this will be extended towards Heath and Reach, and a new section become available for study.

The Heath and Reach quarries, namely Stone Lane quarry (SP 928290) and Bryants Lane quarry (SP 930286) were also paid single visits. The Gault in this area is very thin compared to that on the eastern side of Shenley Hill, the thick mass of clay forming the overburden being Boulder Clay containing many erratics and derived Jurassic fossils including Amphill Clay ammonites. No Shenley Limestone was exposed in either of these quarries, and although the 2.5 metres thick Gault was searched for fossils only the small belemnite *Neohibolites minimus* (Miller) was recorded in the upper part. Bucklands pit (SP 931284) was not visited as it now joins Bryants Lane quarry and it could be observed, from the public road skirting the site, that no Shenley Limestone cropped out in the location near which it was previously recorded (Smart 1990). The vertical face in this quarry made an inspection of the small Gault exposure very difficult, as the massive sandstone blocks seen in previous years and which resulted in a platform above the sands were not in evidence.

In contrast to the Lower Cretaceous beds of the Leighton Buzzard area, the Upper Cretaceous received rather scant attention. Two visits were made to the Lower Chalk at the Totternhoe Lime and Stone Company's works at Totternhoe (SP 982221), and a survey made of both the Totternhoe Stone and the "Grey Chalk" above. Fossils were uncommon, and none seen that had not previously been recorded. The nodule bed at the base of the Totternhoe Stone was sparingly visible in large blocks that had been excavated, but the top of the blue-grey Chalk Marl was under water and inaccessible. Some samples of the nodule bed were collected, however, for acid digestion and this work is continuing. Apart from this, and a crushed ammonite *Schloenbachia* sp., nothing was obtained as regards unrecorded fauna.

The Lower Chalk (Chalk Marl), Cambridge Greensand and Upper Gault were well exposed in the Arlesey Brick Works quarry (TL 187347) and two visits made primarily to search the new section of Chalk Marl that was the result of the quarry extension. It had been hoped that after weathering the chalk would yield teeth of various selachian species but, unfortunately, these did not materialise. In fact, only one fish tooth was discovered; a small fang tooth of the teleost *Aptaeodus* sp. This was most disappointing, and the new exposure of Cambridge Greensand was little better, the only fossils found being crushed brachiopods including several specimens of *Moutonithyris duteupleana* (d'Orbigny).

To conclude this Annual Report, it can be mentioned that during the year a Regionally Important Geological/Geomorphological Sites (RIGS) Group was established within the county. Briefly, RIGS are geological or geomorphological sites within a county — excluding SSSIs — that are worth protecting for their educational, research, historical or aesthetic importance. Criteria for evaluating sites fall generally into one of these classes.

It is outside the scope of this Report to discuss this further, but any reader who is convinced that a site is of particular importance, and could fulfil one or more of these aims, can contact Bedford Museum, which is currently designated as the Bedfordshire RIGS contact point.

ACKNOWLEDGEMENTS

I should like to thank Dr Colin Patterson, FRS., Dr Hugh Owen, FGS., Dr Peter Forey, Dr Alison Longbottom and Dr Angela Milner of the Department of Palaeontology, The Natural History Museum, for identifying specimens, offering advice and for allowing me access to the Museum's facilities and collections, also to Dr Gordon Hubbell, U.S. Shark research, Florida U.S.A. for examining extant Hexanchid shark dentition on my behalf.

My sincere thanks are also due 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; L.B. Silica Sand Ltd., Grovebury Road, Leighton Buzzard, and their staff who are always obliging and helpful.

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P.J. SMART

MAMMALS

Report of the Recorder

1993 was a good year for mammal recording in the county with records of 30 species being sent in by 40 observers.

The sudden increase in Wallaby records was totally unexpected and it will be interesting to see if they can survive and establish a colony in Bedfordshire. They are certainly hardy enough to survive in this climate but as the records show they are very vulnerable when trying to cross roads.

Barry Nightingale's tables of small mammals caught by his cat at Woburn show the same total as in 1991, 27. This includes four Bank Voles, which is the first time the cat has caught this species, but is well down on the 63 caught in 1992. Tony Donnelly has also sent in his cat hunting records from Blows Downs, Dunstable where Short-tailed Vole is the most frequently caught species. Some of the rarer small mammals of the county have also been caught by cats with Paul Hyman's cat at Studham catching a Harvest Mouse and Nancy Dawson's cat at Ickwell Green bringing home both Water Shrew and Yellow-necked Mouse. The biggest surprise however came from Toddington where a cat walked in with a young Garden Dormouse, a species not found in Britain and only recorded in Britain before in Dover, Kent where a cat reportedly caught six.

With no information on the two species of dormice that have occurred in Bedfordshire for several years, an appeal was put in the Whipsnade, Studham and Kensworth Parish Magazine for any information about them. With no information forthcoming it seemed that extinction in the county was a probability. News of a Fat Dormouse at Whipsnade Wild Animal Park in October, however, was most welcome and even better news soon came for the status of the Hazel Dormouse.

A survey organised by English Nature discovered hazelnuts gnawed by dormice in 20 different sites in the south of the county. Being both arboreal and nocturnal it is an easy species to overlook. Now we know more about its status several helpful management techniques can be used to help this endearing and yet vulnerable species to increase its numbers and hopefully spread north in the county.

The river Lea in Luton is the best place to observe Water Voles in the county and Betty Clutten's observations on this population is both interesting and instructive. The spread of mink into this area during the year will no doubt cause problems for this inoffensive mammal. The spread of Mink in Luton and other areas in the south of the county is quite remarkable as the species was unknown in Bedfordshire only 15 years ago.

Badgers are all too often seen as road casualties, with Paul Madgett recording six deaths on the Leighton Linlade Southern bypass during the year. This is thankfully well down on the fifteen recorded in 1992 so hopefully the measures mentioned in last year's *Bedfordshire Naturalist* are working. Like the Badger, the Otter in southern England is mainly nocturnal and so status is generally determined by tracks or spraints. The news that Otters are again occurring in the county is hopefully a welcome change in fortunes of this beautiful but elusive mammal.

On the debit side no records were obtained for Sika Deer during the year but the other three species namely Muntjac, Fallow Deer and Chinese Water Deer all did well.

As well as the 25 species in the Systematic list, records were also received for Rabbit, House Mouse, Wood Mouse, Brown Rat and Fox.

SYSTEMATIC LIST FOR 1993

Red-necked Wallaby *Macropus rufogriseus* The only recent record was of one found dead near Tingrith last year and so it was a surprise to receive five records this year. Unfortunately, three of the records were from road casualties, namely on A5 between Hockliffe and Heath and Reach in July, at Millbrook Test Track in November (DA) and lastly on A600 near Haynes in December (DP). On a brighter note up to three have been seen in the Southill Park area (BN) and one male crossing the road at Eversholt might give an indication as to their origin.

Mole *Talpa europaea* One working at Galley Hill, Luton was timed by L. Jarrett as it pushed up earth 17 times in 15 minutes whilst making a large molehill.

Hedgehog *Erinaceus europaeus* The first record of the year was one reported from a garden in Luton on 15th March (LJ). In Haynes small hedgehogs were seen in a garden right up to the year's end (DP). An albino animal in a Bedford garden was particularly interesting as an albino was seen in the same garden in 1991 (J Ch).

Common Shrew *Sorex araneus* Records were received from six sites widely spread across the county. Five were caught by cats in a garden at Woburn during the year whilst at Dunstable three were caught (TD). One was found on an island at Dunstable Sewage Farm (PT) and another in the birdwatching hide at Bromham Lake (PA) is a reminder that not all shrews seen in a watery habitat are Water Shrews.

Pygmy Shrew *Sorex minutus* Three were caught by Barry Nightingale's cat at Woburn which is the same total as in 1991 and back to normal after the peak of 14 last year. One was caught by a cat at Blows Downs, Dunstable (TD) and dead animals were found at Whipsnade (AC) and Linslade (PM).

Water Shrew *Neomys fodiens* Three records for the year were all of dead animals. One caught by a cat at Ickwell Green (ND). The other two were both found dead, one at Wavendon Ponds in June (DA) and one on the towpath of the Grand Union Canal at Linslade in July (RM).

Brown Hare *Lepus capensis* A decline in the Chicksands area population was noted (DP). Double figure counts were as follows: 12 in "set-aside" near Barton-le-Cley in March (TD), 10 at Park Farm, Eaton Bray in January (PT) and 19 near Great Oaks Wood (TS) in February.

Dormouse *Muscardinus avellanarius* An appeal by English Nature in the autumn led to a survey of all suitable looking areas in the south of the county. The Dormouse survey in Bedfordshire showed that they were present not only in mature woodland but also in old hedgerows and in scrubland. Around 20 sites were found, of all which were south of the B4540 road which probably stops the spread of this arboreal rodent to suitable habitats further north (CT).



Markings on hazelnuts gnawed by different small mammals. From left to right: Wood Mouse, Dormouse, Vole.
(Photo: R. Revels)

- Fat Dormouse** *Glis glis* One seen at Whipsnade Wild Animal Park several times in October was raiding a fruit store prior to hibernation. This is the first site record since 1987, although signs were seen in 1990 (JL).
- Bank Vole** *Clethrionomys glareolus* Four animals caught by a cat at Woburn during the year (BN). The commonest small mammal trapped at Maulden in September.
- Short-tailed Vole** *Microtus agrestis* Population was reported as lower than for the previous two years.
- Water Vole** *Arvicola terrestris* The River Lea population in Luton continues to thrive and had a good breeding season (BC). Other records came from Dunstable Sewage Farm (PT) and Rookery Pit (TD). One at Rowney Warren was seen to be caught by a Mink (JA) and another at Willington was taken by a large fish, probably pike (MG).
- Harvest Mouse** *Micromys minutus* The only record received was of one caught by a cat at Studham in September (PH).
- Yellow-necked Mouse** *Apodemus flavicollis* Records were received from two sites both in the north-east of the county. A single was live-trapped at Everton in January (JC) and also several were live trapped at Ickwell Green in February (ND).
- Grey Squirrel** *Sciurus carolinensis* Black phase animals were reported from the regular sites, namely Kensworth, Woburn and Milton Bryan. An animal in a garden in Luton (TL02R) was reported to be the first Grey Squirrel seen in the general area for 25 years (AG).
- Badger** *Meles meles* Reported to be a good breeding year with cubs being seen at several sites. Five badgers at a sett in August was the highest number seen together. On a more sober note six deaths were reported from the Leighton Linslade southern bypass (PM) which is thankfully well down on the 15 killed in 1992. Four other deaths on the county's roads were reported with May and August being months the badgers seem to be more at risk.
- Ferret** *Mustela furo* The only record received was of a polecat-type seen crossing a road at Southill on 30th June (JMB).
- Mink** *Mustela vison* Sightings were received from 15 sites from most areas of the county. What are presumed colonising animals have been seen at several new areas in the south of the county. A light coloured animal was seen being mobbed by birds at Grovebury, Leighton Buzzard in January (SP92G) (AW). Two animals were seen several times at Dunstable Sewage Farm in the early part of the year. One was watched as it caught a Water Vole at Rowney Warren (JA) and another bolder animal approached an angler on the Great Ouse at Radwell trying to steal his luncheon meat bait. New areas Mink were found in include both Whipsnade and Woburn Parks where they took a liking to the ornamental waterfowl.
A paralysed male was found in the far south of the county at Dagnall and finally one was seen at a garden pond in Luton during October (SC).
- Otter** *Lutra lutra* Signs were found on the river Ivel and were thought to have been made by animals wandering from the re-introduced Cambridgeshire population (BM).
- Stoat** *Mustela erminea* Five of the six records were of solitary animals. The other record was of three animals all run over on the same stretch of road at Keepers Warren (TL14F). An adult was found dead on 2nd June and was followed by the deaths of the two youngsters found in the same spot the next day (JA).
- Weasel** *Mustela nivalis* Five records were reported with one being seen hunting regularly from the birdwatching hide at Dunstable Sewage Farm (TL02C) during the summer (PT).
- Chinese Water Deer** *Hydropotes inermis* A very good year for this species with 27 records received. The majority of records were from the species' stronghold around the Woburn area with the most seen together being 4 at Wakes Farm (SP93X) early in the morning in September and three in a field near Milton Bryan in February (RC). Records away from the main area included one dead on A5 road near Battlesden Park and a group of three together for at least five and a half hours on a field near Thorn turn (SP95X) Dunstable in March (DA).
- Fallow Deer** *Dama dama* A single female was seen at Steppingley (SP93X) in July (J Ch) and five animals were seen frequently around the Blows Downs, Zouches Farm area of Dunstable. Two large herds seen in the south of the county were most likely wanderers across the county boundary from the large Hertfordshire herds. At least 12 of mixed colours were seen near Luton Hoo (TL11J) in February (DA, TD *et al*) and, finally, at least 10 and possibly as many as 20 were seen near Greencroft Wood, Studham (TL01G) in December (CT).

Muntjac Deer *Muntiacus reevesi* Records were received from 20 widespread sites. A decline in numbers was observed for Chicksands Wood (DP).

MISCELLANEOUS RECORDS

Garden Dormouse *Eliomys quercinus* A young animal caught by a cat on 1st August at Toddington came as a complete surprise. The species does not occur in Britain although it is quite widespread on the continent including northern France. Enquiries into the pet trade and animal collections can throw no light onto the occurrence. The only clue to its origin being records from Dover, Kent also caught by cats in 1991. With the M1 motorway running close to Toddington it is possible the dormouse was a road haulage stowaway on one of the many continental trucks but I am afraid it is unlikely that its true origin will ever be known; it is a very interesting record none-the-less (per DA).

ACKNOWLEDGEMENTS

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

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CLIFF TACK

JOHN G. DONY — COMMEMORATIVE TREE

On the 23rd March 1993, a Small-leaved lime tree was planted in the lawn of Luton Museum by Chris Dony in memory of her husband, John Dony. The Small-leaved lime was provided and chosen by the Society because it was one of John's favourite trees. Many fellow members and friends were present, including founder members Bernard Verdcourt and Peter Taylor.

An engraved plaque has also been positioned in the portico of Luton Museum bearing the following inscription:

“TO THE MEMORY OF JOHN G. DONY (1899 — 1991). HIS INVALUABLE CONTRIBUTIONS TO OUR KNOWLEDGE OF THE DISTRIBUTION OF WILD PLANTS IN BEDFORDSHIRE, AND HIS ACTIONS IN ENSURING THE CONSERVATION OF IMPORTANT WILDLIFE HABITATS, SUCH AS KNOCKING HOE, WILL BE LONG REMEMBERED.”

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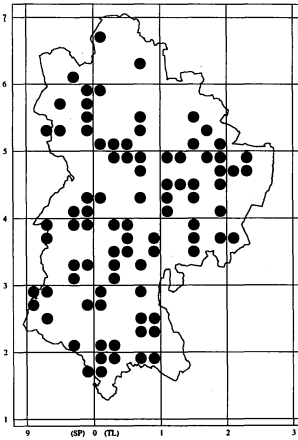
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BOON, C.R. 1990 The writings of John G. Dony. *Bedf. Nat.* 45 9-14
ANON 1993 John Dony Commemorative tree. *Muntjac* No. 91

JOHN ADAMS
Development Committee

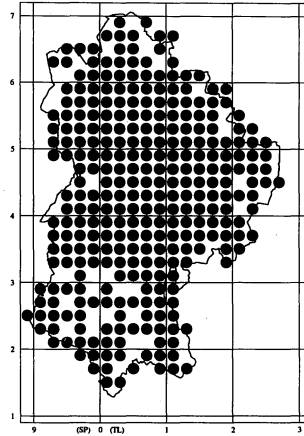
MAMMALS—BATS

Report of the Recorders

In 1993, bats were recorded in 88 tetrads (2 km × 2 km squares). This is exactly the same as the 1992 total. Bats were recorded from 101 tetrads in 1991 and 98 tetrads in 1990. 1993 records are evenly spread across the county.



Bat records 1993



Bat records 1987 - 1993

The earliest non-hibernation bat records were in February:

- 6 February A male, injured pipistrelle (confirmed) was picked up from a house in Biddenham, TL027501, by Joan Childs. The bat died on 8 February.
- 6 and 7 February Two bats flying at 4.30 pm at Old Warden, TL127440; were seen by David Anderson and Robin Spicer. (Unconfirmed pipistrelle.)
- 11 February A dead, confirmed pipistrelle was picked up from Sutton Church, TL219475, by Peter Holden.
- 15 February A confirmed, injured pipistrelle was found on the ground near a house in Brogborough. The owners of the house reported that bat roosts under roof tiles.
- 20 February One unconfirmed pipistrelle was reported from a house in Luton, by Mr Colliver, TL085250. The bat was released unharmed.
- 24 February An unidentified bat was recorded flying in Woburn Park during the day (2.15 pm) by Mike Cox, Head Gardener.

The latest non-hibernation bat record was in November:

- 3 November One unconfirmed pipistrelle was seen flying between 3.20 pm and 3.30 pm at Stewartby. TL017423, by Mr P Almond.

Daubenton's Bat *Myotis daubentonii*

| | |
|----------------------|--|
| Confirmed records: | 2 maternity roosts, 3 hibernation sites |
| Unconfirmed records: | 1 summer roost, 10 sightings of flying bats |
| Earliest active bat: | 5 April |
| Latest active bat: | 2 October |
| Hibernating bats: | 10 and 30 January, 20 and 21 February, 19 December |

As well as the regularly monitored, confirmed maternity roost in Stockgrove Country Park, SP916288, a second confirmed maternity roost, SP921292, and an unconfirmed summer roost, SP919292, were located in the park. The traditional site had a record 98 bats on 26 July and a lactating female was caught by a licensed bat worker on 12 July from the second maternity roost.

Bats were found hibernating in Old Warden Tunnel, Silsoe ice-house and Woburn ice-house. The maximum number seen together was two. All three sites had two at various times of the winter.

There were two unconfirmed records associated with roosts — bats at the third roost at Stockgrove Country Park, and also bats flying close to a previously confirmed roost at Sandy. The remaining nine records were all bats seen flying over water: rivers, flooded pits, lakes, a canal and a ford. All records were at dusk.

Numbers of flying Daubenton's bats were monitored at Stockgrove Country Park.

Natterer's Bat *Myotis nattereri*

| | |
|----------------------|--|
| Confirmed records: | 1 maternity roost, 5 hibernation sites |
| Unconfirmed records: | 1 summer roost |
| Active bats seen: | 15 March |
| Hibernating bats: | 30 and 31 January, 6 February |

The two summer sites were both in churches: Keysoe Church, TL073625 and Westoning Church, TL028328. Two bats were seen clearly in Westoning Church on 16 March. Droppings were found in Keysoe Church.

Hibernating Natterer's bats were identified in Silsoe ice-house, Woburn ice-house, Linslade wine cellar, Barton lime kiln and Southill ice-house. The maximum number seen together was nine in Woburn ice-house.

Noctule *Nyctalus noctula*

| | |
|----------------------|-------------|
| Confirmed records: | None |
| Unconfirmed records: | 6 sightings |
| Earliest active bat: | 12 April |
| Latest active bat: | 23 August |

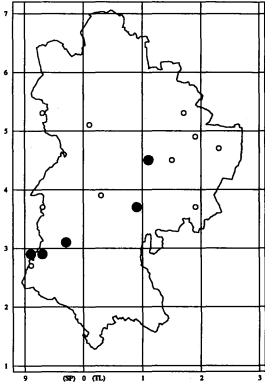
All the records were of small numbers of bats, often only one or two, flying at dusk. A few bats gave a good aerial display at Shuttleworth Agricultural College lake, TL147443.

Noctules were counted at Stockgrove Country Park and peaked at five on 31 May. On this evening a noctule was observed being chased by a hobby at this site. Vocal and physical interactions between noctules are relatively common at Stockgrove.

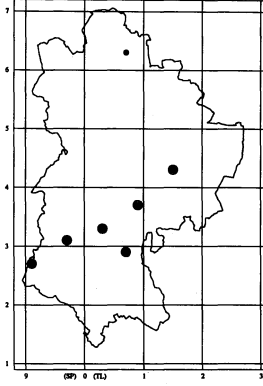
Out of the six sites where noctules were recorded, water was present at four.

Pipistrelle *Pipistrellus pipistrellus*

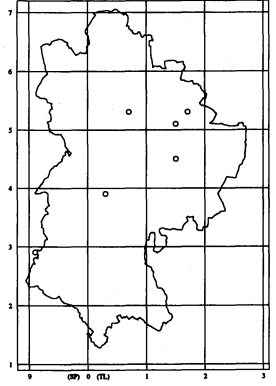
| | |
|----------------------|-------------------------|
| Confirmed records: | 14 roosts, 23 sightings |
| Unconfirmed records: | 13 roosts, 22 sightings |
| Earliest active bat: | 6 February |
| Latest active bat: | 3 November |



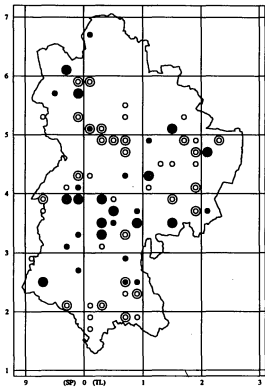
Daubenton's Bat
Myotis daubentonii



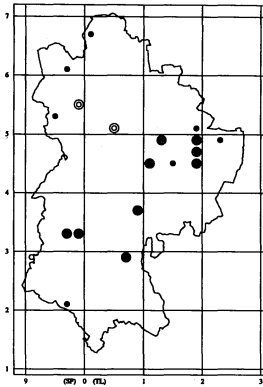
Natterer's Bat
Myotis nattereri



Noctule
Nyctalus noctula



Pipistrelle
Pipistrellus pipistrellus



Brown Long-eared Bat
Plecotus auritus

Key:

- Confirmed roost
- ⊙ Confirmed bat
- Unconfirmed roost
- Unconfirmed bat

Confirmed records: A number of injured bats were picked up early in the year, the first being on 6 February from Biddenham (TL027501). A dead bat was found in Sutton Church (TL219475) on 11 February and an injured bat picked up from Brogborough (SP9638) on 15 February.

A number of house owners reported their roosts — these included counts of 32 (Sutton, TL215477) and 97 (Westoning, TL0232). A Bedfordshire record of 501 bats emerged from a modern house in Blunham (TL153515) on 1 June.

A dead pipistrelle was removed from an insect trap in Luton Museum (TL089230).

On 10 December, two pipistrelles were discovered hibernating in a porch pillar of a house in Leighton Buzzard (SP931251).

Unconfirmed records: Two early bats were seen flying on 6 February at Old Warden (TL127440), one reported flying on

7 February near South Mills (TL1450), one found on 15 February in Luton (TL066255) when a window was replaced, and one found inside a house in Luton (TL084240) on 20 February.

Householders reporting their roosts included counts of 22 bats from Stotfold (TL213362), 22+ from Clophill (TL087376), 58 from Bromham (TL011517), 80 bats under tiles in Cople (TL1048) and 83 bats from under tiles and the eaves in Wilstead.

A dead bat was reported from underneath a roost at a thatched house in Flitton (TL059359).

Late bat records were: one seen flying on 3 November at Stewartby (TL017423), and a report of a bat roosting in a chimney inspection cover in Luton on 8 December.

Brown Long-eared Bat *Plecotus auritus*

Confirmed records: 3 summer roosts, 6 winter roosts, 2 sightings

Unconfirmed records: 9 roosts, 1 sightings

Earliest active bat: 25 March

Latest active bat: 10 October

Hibernating bats: 10, 30 January, 20 February, 1, 19, 22 December

A total of nine brown long-eared bats were recorded in hibernation — six in the regularly checked sites and three turning up in two buildings during building work. The most seen together was two.

A maternity roost was found in a greenhouse in the Woburn Estate, SP966326. An injured bat was picked up from each of the two roosts at the RSPB Headquarters at Sandy: an adult from the gatehouse roof, TL191486, and a baby from the shoot room roof, TL188478.

Sick bats were also picked up from Pavenham and Brickhill in Bedford.

Of the nine unconfirmed roosts, eight were English Nature calls. The ninth was a call in Eaton Bray, SP967213, at the request of the owner who had identified piles of straw in the loft of her thatched roof as bat droppings. She did have a roost, but not as large as she thought! Two of the roosts were in churches: Yelden Church, TL011671 and Eversholt Church, SP983325.

The one bat seen in flight was recorded at Stockgrove Country Park.

OTHER BAT RECORDS

Whiskered bat *Myotis mystacinus*

A juvenile male whiskered bat, very thin and weak, was brought in by Kim Wallis on 26 July. It came from Church Street, Great Gransden, just over the Bedfordshire border in Cambridgeshire. The bat had been flying around her house and bats are believed to roost under the eaves. The owner is very sympathetic to bats. The bat did not survive the night and the body was sent to Bob Stebbings for identification.

Unidentified bats

There were 12 additional records of unidentified bats from around the county. Three of these were flying bats, three were bats in houses, four were records of bat droppings: one was a bat hit by a car and one was a dead bat found in a garden.

ACKNOWLEDGEMENTS

The bat group is greatly indebted to very many people who have contributed to our knowledge of bats in the county in a variety of ways. Thank you to: John and Ann Adams, Tony Aldhous, P. Almond, David Anderson, Olive Bass, Vivien Bayley, Mrs Bowers, Mark Boyd, Rosemary Brind, Kirsty Buchanan, Mr Burns, James Cadbury, Joan Childs, John and Ann Childs, Anne Chisholm, Mrs Clarke, Philip Clarke, Betty Clutton, Dave Cole, Mr Colliver, Bob Cornes, Mike Cox, Mrs Davison, Graham Dennis, Liz Dorling, Ros and Ivan Dunn, Joy Edwards, Paul Ellis, Mr Endersby, Andy Foster, Nigel and Annette Francis, Dennis Geoffcote, Irene Gillan, Mr Gomm, Angela Gray, Martin Hillier, Ms Hills-Harrop, Mrs Hitchcock, Mike Hodgson, Peter Holden, Ann Hopwell, Paul Hyman, Geraldine Irving, Philip Irving, Peter Keech, Trish Kerrigan, Peter and George Lewis, Mrs Lowry, Lesley Major, Rob Mason, Boo and Ron Matthews, Jane McCloud, Mr McGilley, Mrs Mecham, David Miller, Morris Mullet, Mr Nimis, Margaret Parks, Dave Parsons, Linda Piggott, Mr Razzell, Cyril Reading, Julian Rutherford and family, Sandra Ryder, Mrs A Sabey, Harry Scott, Rebbecca Shaw, Mary and Mike Sheridan, Mrs Smith, Steve Smith, Viv Smith, Robin Spicer, Paul Stewart, Cliff Tack, Chris Taylor, Mrs Tether, Mr and Mrs Titchmarsh, Paul Trodd, Mr and Mrs Trott, Mrs Tuck, Chris Tucker, Kim Wallis, Karen Walsh, Jane Watson, Pauline Watson, Mrs Westrop, Geoffrey White, Margaret Wiggs, Richard and Sarah Wilshire, Janine and Chris Wynne, Janet Yeoman.

JOAN CHILDS and TONY ALDHOUS

A SMALL MAMMAL SURVEY OF KNOCKING HOE NNR by Amanda Proud

INTRODUCTION

Knocking Hoe National Nature Reserve (TL 1330) was designated in 1958. It was established because of the presence of several nationally scarce plant species within portions of it which have remained undisturbed. The reserve is on private farm land and access is by permit only. The vegetation of the reserve consists of undisturbed chalk grassland, disturbed chalk grassland, and chalkland scrub. A small pond filled mainly by run off from fertilised arable fields, and which dries up in some summers, is also present.

Chicken Hole TL 1230 is an area in the same farm and consists of a valley bottom and sides. The valley bottom has been farmed for arable but is at present under set aside, as is all the area around Knocking Hoe. The valley sides are scrub covered but both sides have now been cleared. There is also a small pine wood maintained by the farmer for pheasants.

The reserve's Rabbit population has increased dramatically in the past 5 years, despite the presence of myxomatosis. Portions of compartment 14 and the Lynchets are heavily disturbed, and in some places denuded of vegetation. Mole holes are present in compartments 9, 15 and 16 and Fox droppings have been found throughout the reserve. Hares have been observed as have Fallow deer and Muntjac, traversing the area.

No records of small mammals existed for the reserve. It therefore was decided to undertake a brief survey to investigate which species might be present.

Address: 27 Luton Road, Barton-le-Cley

METHOD

The permission of English Nature was obtained to carry out the survey, and Longworth traps were made available on loan by the Bedfordshire Natural History Society. The use of such traps is regulated by statute. Those in the survey were therefore provided with grass bedding and an excess of both grain and meat (catfood), serving not only as bait but also to ensure the welfare of captured animals.

Traps were set on a total of 19 nights during October and November of 1993 and February 1994. The traps were set on Knocking Hoe for single nights, in a manner such that each vegetation type and the whole area had some degree of coverage. In Chicken Hole traps were set for two consecutive nights, in three locations, again giving representative coverage of the area. In both areas the traps were placed where there was evidence of small mammal activity, in runs or in front of holes.

RESULTS

Results of the survey are shown in Tables 1 and 2.

Table 1: Captures on Knocking Hoe

| Date | Compartment no. | Location | Vegetation type | Weather | Wood mouse | Common shrew | Pygmy shrew | Short-tailed vole |
|-------------|-----------------|--------------------|------------------|--------------------|------------|--------------|-------------|-------------------|
| 15/16.10.93 | 1 | Chalkpits | Scrub | Cold;clear | 1 | | | |
| 24/25.10.93 | 6;7 | Spiranthes bank | Short grassland | Clear;cold;windy | | | | |
| 25/26.10.93 | 6 | Hedge line | Grassland hedge | Mild;misty | 4 | | | |
| 28/29.10.93 | 2 | Hedge line | Grassland hedge | Mild;overcast | 2 | | | |
| 29/30.10.93 | 4;5 | Hillside | Long grass | Mild;damp;overcast | | | | 2 |
| 30/31.10.93 | 3 | Hoe | Chalk grassland | Damp;overcast | | | | |
| 4/5.11.93 | 16;17 | Pond side | Juncus grassland | Very mild;overcast | 2 | | | |
| 15/16.11.93 | 17 | Top of reserve | Scrub | Very mild | 1 | | | |
| 16/17.11.93 | 9;10 | Valley bottom; top | Chalk grassland | Mild;overcast | | 1 | | |
| 18/19.11.93 | 9 | Valley bottom | Chalk grassland | Clear;sunny | | 1 | 1 | |
| 19/20.11.93 | 9 | Valley bottom | Chalk grassland | Clear;sunny;cold | | 1 | 1 | |
| 25/26.11.93 | 13 | Lynchets | Chalk grassland | Clear;sunny | | | 1 | |
| 26/27.11.93 | 13 | Lynchets | Chalk grassland | Misty | | | | |
| TOTALS | | | | | 10 | 3 | 3 | 2 |

Table 2: Captures in Chicken Hole and pine plantation

| Date | Location | Vegetation type | Weather | Wood mouse | Common shrew | Pygmy shrew | Short-tailed vole |
|------------|---------------|--------------------|---------------|------------|--------------|-------------|-------------------|
| 11/12.2.94 | Pine wood | Pine woodland | Mild;sunny | 1 | | | |
| 12/13.2.94 | Pine wood | Pine woodland | Overcast | | 1 | 1 | |
| 13/14.2.94 | Lynchets | Chalk grassland | Overcast;cool | | 1 | | |
| 14/15.2.94 | Lynchets | Chalk grassland | Overcast;snow | | | 1 | |
| 17/18.2.94 | Valley bottom | Improved grassland | Overcast;mild | 1 | | | |
| 18/19.2.94 | Valley bottom | Improved grassland | Overcast;mild | | | | 2 |
| TOTALS | | | | 1 | 3 | 2 | 2 |

DISCUSSION

The object of the survey was simply to establish which species might be present on the reserve. The methodology employed was not sufficient (nor was it intended to be) to allow any conclusions other than establishment of a species presence to be drawn.

Wood mice (*Apodemus sylvaticus*) were the most numerous of the species captured. All captures of this species were in traps in scrub or hedge line; none were taken from the chalk grassland. This is in accordance with the habitat preferences given by Van der Brink (1967) and Flowerdeew (1984).

In contrast, both the Common shrew (*Sorex araneus*) and Pygmy shrew (*S. minutus*) were taken only on chalk grassland. The Common shrew is reported to inhabit such varied vegetation types as open rough grassland, marsh, dunes (Van der Brink, *ibid.*), deciduous woodland, hedgerows, and scrub grassland (Churchfield 1986). Pygmy shrews reportedly prefer dry, well-covered ground with tall vegetation, such as shrubland. It therefore is interesting that in the present survey the species was found on both Knocking Hoe and Chicken Hole in grassland all of which was less than a metre high.

The Short-tailed voles (*Microtus lauravendii*) were taken on grasslands in both locations. Van der Brink (*ibid.*) states that their preferred habitat types are moist areas, high rough pasture, copses and open woods, ossier beds and peat moors.

ACKNOWLEDGEMENTS

I would like to thank the Bedfordshire Natural History Society for the loan of the traps used in the survey, and Graham Bellamy (EN warden responsible for Knocking Hoe NNR) for his support and assistance.

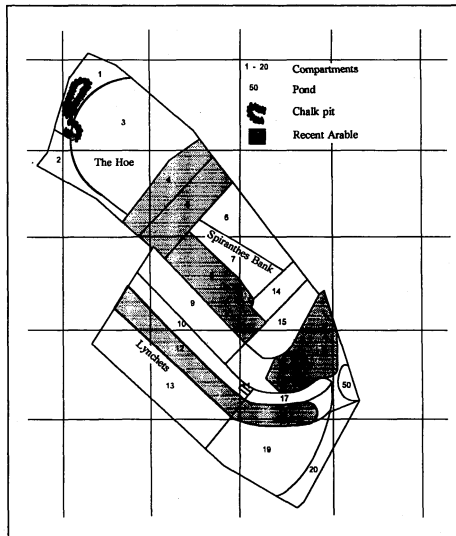


Figure 1. Knocking Hoe NNR

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- CHURCHFIELD, S. 1986 *Shrews*. The Mammal Society.
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FISH

Report of the Recorder

It is considered best that this report for 1993 follows the same format as that for last year with, firstly, details of linear waters surveyed by the National Rivers Authority (NRA) together with a listing of species recorded at these sites, followed by additional notes of a new species recorded for the county and details of a previously unrecorded site.

The National Rivers Authority surveys were in fact conducted during the second half of 1992 and thus should have been included in the report of that year. Unfortunately, these reports did not become available to the Recorder until 1993 and therefore, because of their importance and a requirement that the information be permanently recorded, details are included in this report.

The common names of fish species are well established and accepted and should not admit any misinterpretation. Therefore these names are used throughout with scientific names confined to the list of total species recorded for the county.

SITES RECORDED

The river Great Ouse downstream of Bedford

Largely due to successful spawning during the exceptionally fine spring and summer weather of 1989 and 1990 which resulted in a sharp increase in the numbers of some species, the survey of 1992 revealed the highest biomass and density estimates ever recorded for this stretch of the river.

The Roach has benefitted most and is the dominant species numerically, forming 66% of total fish density and 34% of total fish biomass. This represents a two fold increase in numbers since the previous survey and was composed largely of fish from the 1989/90 class. The Roach is probably the most common and widely distributed of the larger fish species found in Bedfordshire and is recorded from both linear and enclosed waters throughout the county.

Last year's report mentioned a notable and welcome increase apparent in the numbers of Common Bream in the Bedfordshire Ouse following a decline over many years. This increase is revealed again by the survey of the downstream section of the river with a five fold increase in density since the previous survey of 1989 but, most notably, a wide increase in distribution with the species now recorded from all sites sampled except one. As mentioned before, numbers of Common Bream are difficult to access accurately due to the shoaling nature and constant movement of the species, but it is now sub-dominant by weight forming 32% of total fish biomass at this site.

A question was raised some years ago as to the status of the Bleak in the county but here again the species has increased in numbers and now forms 2% of total fish biomass and 7% of fish density in this stretch of the river.

The comparatively fine summers of recent years have not proved favourable to the Dace however, which has declined considerably in the Great Ouse and its tributaries. It is thought that low water flow resulting in siltation of clean spawning beds required by the Dace and poor recruitment as a result together with the short life span of this species has contributed to its decline. Biomass and density figures for this species are now negligible and are the lowest ever recorded at this site. Re-stocking over the next few years is proposed in an effort to re-establish the population level.

The Gudgeon has also declined numerically since 1989, probably due to the low water flow which may also have affected the previously mentioned Dace. The species now forms 6% of fish density and 2% of biomass compared to 18% and 5% previously recorded.

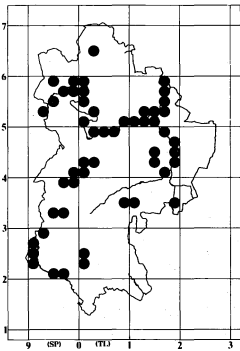
The Silver Bream is an interesting species which, in this country, is largely restricted to the south east region of England, particularly the Great Ouse river system, and which we are carefully recording. It was mentioned in last year's report of the upper Great Ouse that this species must be regarded as being in decline at that site. The picture of the downstream stretch of the river is widely different with the species being recorded from the majority of sites sampled but, except for the

Longholme site at Bedford, these are all further downstream where the deeper, slower flowing water provides a more suitable habitat. However, numbers of the Silver Bream remain very low and even in the downstream Ouse the species is regarded as insignificant, though not in decline.

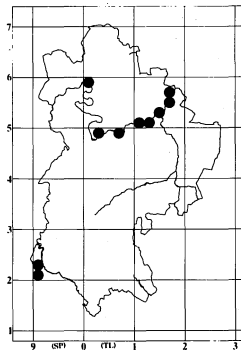
The predatory species, Pike and Perch, together with the Ruffe maintain a similar status to previous years although a possible future increase in numbers may result due to the recent increase in prey species numbers.

The Barbel, which has enjoyed a population boom in the upper Ouse in recent years, has not yet been recorded downstream of Bedford but the type of habitat provided by this stretch of the river is not so well suited to this species. It will be interesting to see if it does occur below Bedford in the future, although we feel this is unlikely, except for, possibly, the odd stray specimen.

The total list of species and hybrid recorded from the lower Great Ouse during 1992 is as follows: Roach, Common Bream, Silver Bream, Pike, Tench, Perch, Gudgeon, Ruffe, Bleak, Chub, Dace, Rudd, Common Carp, Eel, Roach/Bream Hybrid.



Common Bream
Abramis brama



Silver Bream
Blicca bjoerkna

The above tetrad maps show the comparative distribution of the two bream species, particularly mentioned in the report of the river Great Ouse.

The Elstow Brook

A total of eight fish species was recorded from this site during 1992 with the dominant species numerically being the Dace which formed 37% of total fish density. Even so, the Dace has declined here as elsewhere since the previous survey of 1989 and probably for the same reasons.

The Chub was the dominant species by weight forming 52% of overall biomass but only 15% of density. This species' contribution to overall biomass has decreased since the 1989 survey but it remains relatively important at this site.

Here again the Roach has benefitted considerably from the recent warm summers and is the sub-dominant species numerically forming 29% of fish density. This represents a three fold increase in numbers since 1989 with fish from the 1989/90 year classes predominating.

The Gudgeon has declined in numbers at this site since the previous survey, now forming 8% of overall fish density where previously it was the sub-dominant species numerically recording a figure of 17% density.

Predatory species at this site are represented by the Pike and Perch. The Pike has maintained a stable population here since routine surveys began but the Perch has increased in importance and now forms 7% of both density and biomass compared to previously insignificant figures.

The total list of species recorded from the Elstow Brook during 1992 is as follows: Roach, Pike, Gudgeon, Chub, Dace, Tench, Perch, Eel.

The Bedford New Cut and Cardington canoe stream

The dominant species by weight at both these Great Ouse backwater sites is the Chub which is well suited to the type of habitat provided by this faster flowing water but here, as at the previously mentioned sites, the Dace has suffered a serious decline. Poor recruitment of fish from the 1989/90 and following year classes points to the same causes responsible as elsewhere in spite of the relatively faster flowing water conditions.

Nine species and one hybrid were recorded from these sites during 1992 and are listed as follows: Roach, Perch, Gudgeon, Bleak, Eel, Chub, Dace, Tench, Ruffe, Roach/Bream Hybrid.

The Luton Hoo estate and notes of a new species recorded

Apart from one very old mention of Three-spined Stickleback no records exist for the fish species at the lakes and river Lea within the boundaries of the Luton Hoo estate. We are pleased to have records at last from this site which are listed in full below and include a species new to the Bedfordshire list, namely the Orfe.

The fish at this site are the golden form of the Orfe and in this case it seems most probable that this decorative species was introduced here towards the end of the last century, when many large country estates were 'improved' in a similar fashion. If this is so then a breeding population must have existed to maintain the species' presence at this site today; there has been no recent introduction.

Species recorded at the Luton Hoo Estate are as follows:

Common Carp, Crucian Carp, Perch, Roach, Gudgeon, Tench, Rudd, Orfe, Minnow, Bullhead, Three-Spined Stickleback.

The Orfe has also been recorded, this year for the first time, from the Withy Pool at Henlow; again the golden form of the species. The site is a hundred year old flooded gravel pit with clear, deep water which provides an ideal habitat for this species which is a native of northern and eastern Europe.

Of course, this species is often kept in ornamental and garden ponds but the difference between this and the populations at the Hoo and at Henlow, which are totally self sustaining and receive no artificial support, will be apparent and the Orfe can therefore be recorded in the same way as the many other introduced species in the county.

NEW TETRAD RECORDS FOR 1993

Roach — 2 tetrads, Pike — 1 tetrad, Gudgeon — 1 tetrad, Chub — 2 tetrads, Dace — 3 tetrads, Tench — 1 tetrad, Perch — 2 tetrads, Eel — 1 tetrad, Common Carp — 1 tetrad, Crucian Carp — 1 tetrad, Rudd — 2 tetrads, Orfe — 2 tetrads, Bullhead — 1 tetrad, Minnow — 1 tetrad, Three-spined Stickleback — 3 tetrads.

CONCLUSION

The exceptionally warm spring and summer weather at spawning time over recent years, especially 1989/90, has resulted in an increase in fish stocks overall but with the spectacular success of some species offset by a startling decline in others.

This is the way of nature but in the case of fish, principally due to the substantial angling interest, any decline in many species is made good artificially by re-stocking by the NRA and angling societies.

With the new record of the Orfe accepted the total list of Bedfordshire fish species has increased to 29 with virtually all species which could be expected represented, including a proportion of the more unusual, most of which were originally introduced to this country via our county.

A complete list of species recorded for Bedfordshire since systematic recording began with the BNHS follows; within brackets () are noted the number of tetrad records for each species (correct at 31st December 1993).

Common Bream *Abramis brama* (51)
Silver Bream *Blicca bjoerkna* (10)
Bleak *Alburnus alburnus* (29)
Common Carp *Cyprinus carpio* (42)
Crucian Carp *Carassius carassius* (14)
Grass Carp *Ctenopharygodon idella* (1)
Tench *Tinca tinca* (52)
Zander *Stizostedion lucioperca* (9)
Perch *Perca fluviatilis* (68)
Ruffe *Gymnocephalus cernua* (24)
Pike *Esox lucius* (57)
Barbel *Barbus barbus* (8)
European Catfish *Silurus glanis* (5)
Chub *Leuciscus cephalus* (34)
Roach *Rutilus rutilus* (72)
Rudd *Scardinius erythrophthalmus* (48)
Orfe *Leuciscus idus* (2)
Dace *Leuciscus leuciscus* (32)
Gudgeon *Gobio gobio* (42)
Stone Loach *Noemacheilus barbatulus* (15)
Spined Loach *Cobitis taenia* (4)
Eel *Anguilla anguilla* (28)
Ten-spined Stickleback *Pungitius pungitius* (15)
Three-spined Stickleback *Gasterosteus aculeatus* (32)
Minnow *Phoxinus phoxinus* (19)
Bullhead *Cottus gobio* (19)
Brown Trout *Salmo trutta* (2)
Rainbow Trout *Salmo gairdneri* (10)
Grayling *Thymallus thymallus* (1)

ACKNOWLEDGEMENTS

My thanks to the following individuals for their help and information: A. Levitt, P. Madgett, A. Taylor (N.R.A.), T. Thomas, E. Winter.

HARVEY WINTER

REPTILES AND AMPHIBIANS

Report of the Recorder

REPTILES

The season started early for the reptiles with the first record of a Grass Snake coming on the night of 24th March. I had just arrived home from the BNHS AGM when I had a telephone call from Bedfordshire Police asking if I could help them. They needed a snake identified which had been found in the gatehouse at Vauxhall's factory. The description they gave was that of a Grass Snake and so I advised that it be released in the neighbouring field.

There were two reported sightings of Adders, one by John Comont at King's Wood, Heath and Reach. The other record was sent in by Roger Pewtress whose friend saw one at Blunham whilst fishing. He also saw Grass Snakes at the same site (TL 158515) on many occasions.

A Slow Worm was found on a BNHS meeting in Chicksands Wood (TL 03Z) on July 18th and Dave Parsons reported a Slow Worm and Common Lizard again in the Haynes area. Roger Pewtress reported a Slow Worm basking on a path in Rowney Warren Wood.

I had two reported sightings of terrapins. The first was from Paul Madgett who saw one in almost the same place as he had seen one two years ago.

From his description I am sure this is a Red-eared Slider (*Pseudemys scripta elegans*) which is the species most readily obtainable in this country. The other one was seen near Turvey on the Gt. Ouse by Andy Vaughan-Jones. He described it as light grey, evenly coloured with a well rounded shell about 7 inches in diameter and 6 inches high. He remarked that it looked like an old German helmet. I am not sure what this was. It could have been a European Pond Tortoise whose shell had become dirty from life in the river, obscuring the markings which are fine yellow speckles.

AMPHIBIANS

Frogs were active throughout the year again, lending weight to the theory that frogs do not hibernate properly but just have periods of dormancy during the worst weather. Vic Arnold saw his first frog of the year on 31st January and the last on 2nd December.

The newts and toads did not become active until March, with the toad migration and spawning at Cople Pits happening mid-month.

Roger Pewtress sent in several records of amphibian breeding sites which I have yet to check against existing records.

ACKNOWLEDGEMENTS

I would like to express my thanks to all those who sent or phoned in records. Your help is greatly appreciated.

H.M. MUIR-HOWIE

BIRDS

Report of the Recorder

INTRODUCTION

Due to the ever increasing volume of records, preparation (but not unfortunately editing) of this report is now sectionalised, and thanks are due to the following for compilation of species accounts for the following groups:

| | |
|-------------------|-------------------------|
| D. Kramer | Wildfowl |
| P. Smith | Waders |
| M. J. Palmer | Gulls and Terns |
| D. J. Odell | Larks to Accentors |
| R. A. Dazley | Chats and Thrushes |
| E. Newman | Warblers and Crests |
| B. J. Nightingale | Flycatchers to Starling |

This year also marks the introduction of regular rotation of membership on the County Rarity Panel, and as a result sees the retirement of Arthur Livett as the longest-serving Rarities Panel member, and the co-option of Pete Smith and Dave Odell together with a renewed role for Paul Trodd. Rotation will allow more members to participate in the vetting of records at some stage in their birding career, and was indeed originally Arthur's suggestion, but unfortunately it will also mean loss of experience from the Panel. Few of the newer Bird Club members can appreciate the extent of Arthur's contribution to bird recording in the County. Despite being only a few years older than myself, he joined the BNHS as a junior member as long ago as 1954, has continuously had some participation in the vetting of County records since 1963 and has been a member of a formal Records Committee since 1970. He was of course Bird Recorder from 1965 to 1970, has served the County as BTO Representative from 1966 to 1988 and has participated in the work of the Scientific Committee and the Council of the BNHS. We can only hope that his association with the Society and the Bird Club will continue and that he will continue to find roles in which his talents can benefit us all.

Finally, thanks are also due to all our contributors, without whom there would be no report. With the deepest apologies to anyone omitted in error, records were received from the following:

Contributors: J. Adams, D. Allen, S. Alliez, P. Almond, D. Anderson, Dr. L.P. Ashton, D. H. Ball, S. Banks, R. Bashford, M. Bierton, R. Bodily, R. & B. Boughton, J. Bowler, R. A. Bowler, M. Brandon, S. Brooke, Dr R. S. K. Buisson, R. M. Catchpole, R. H. Chalkey, A. H. Chapman, J. Childs, M. Clark, L. Cox, S. Crockford, N. J. Crossman, J. Darlington, R. A. Dazley, T. Donnelly, N. R. Finan, E. J. Fisher, A. Ford, A. R. Frost, M. Garner, M. & M. Giles, A. Glenister, G. & C. Goodall, J. R. Guthrie, D. & M. Green, S. D. Heath, P. Howard, R. A. Hume, S. Hunt, Ivel Valley Ringing Group, P. S. Jarman, L. R. Jarret, B. King, J. P. Knowles, D. Kramer, the Hon. H. de B. Lawson Johnston, A. J. Livett, Dr P. Madgett, P. Marshall, J. Mayhead, B. Mason, R. & B. Matthews, E. & J. McKercher, D. Mellor, R. D. Moore, I. Mountain, E. Newman, B. J. Nightingale, S. Northwood, P. Nye, R. A. Nye, D. J. Odell, P. R. Oldfield, K. Owen, B. Pike, M. & E. R. Paine, J. C. Palmer, M. J. Palmer, D. Parsons, T. Peterkin, J. Phillips, G. D. Player, A. Plumb (API), M. Pocock, A. Proud, P. Raven, P. J. Rhodes, M. D. Russell, R. E. Scott, K. M. Sharpe, Dr J. T. R. Sharrock, M. Sheridan, P. Smith (PSm), T. Smith, R. Spain, B. R. Squires, M. J. Stevens, J. D. Swann, C. Tack, J. B. Temple, J. K. Trew, P. Trodd, I. Vickers, K. R. & M. Weedon, A. White, A. Whitney, P. J. Wilkinson, M. Williams, R. W. Wilson, S. J. Wilson, S. Winter, N. Wood.

REVIEW OF 1993

After the remarkable 1991 and the less spectacular 1992, 1993 continued a slight downward trend in excitement levels for Bedfordshire birding, with few major rarities or other notable developments in the county avifauna, and a total of only 189 species recorded during the year. Atlas work finally ceased, but behind the scenes the new Bird Club continued to consolidate its position, and began to plan survey work which will include a study of Lady Amherst's Pheasant and more formal regular monitoring of important County Wildlife Sites. On more distant horizons, the Marston Vale Forest Project offered visions of dazzling potential for the development of wildlife habitats in the central regions of the County, which we can only hope will eventually come to fruition.

The year opened with the drake Eider at Wyboston GP and an extremely elusive Bittern at Houghton Regis ChP remaining from 1992. A Great Grey Shrike first reported at Blunham Lake on 4 January was likewise seen very irregularly at South Mills NR until 21 April. Wintering goose flocks included two White-fronts briefly at Southill Lake and one or two others at East Hyde. Gull species wintering on the Marston Vale tips included adult and second-winter Iceland Gulls and adult and first-winter Glaucous Gulls coming to roost at Brogborough Lake and Stewartby CP during late January, the adult Iceland Gull remaining into February, with possibly the same bird seen at Stewartby CP in early March.

A drake Red-crested Pochard was at Luton Hoo on 9 and 10 February, and another, possibly the same, was at Priory CP from 12 to 17 February and again from 20 February to 18 March, having briefly visited Willington GP on at least 20 February. Also at Priory CP, a very long-staying Shag arrived on 13 February and remained until at least 15 May. Possibly brought by the same weather systems, a Brent Goose frequented the overflow pools beside the Kempston bypass from 14 February, with probably the same bird also seen at Willington GP and briefly at Priory CP later in the month and at Radwell GP on 4 March. Somewhat rarer in the County was an oiled Red-throated Diver found at Stewartby CP on 13 March, which departed the next day.

Spring passage of passerines got off to a good start with a fine series of up to ten Black Redstarts at Blows Downs between 17 March and 20 April, and a Firecrest at Barton Hills on 21 March. Common Redstarts also had a good passage with a peak of five at Blows Downs on 10 April, but Ring Ouzel numbers returned to more normal levels after the exceptional figures of 1992. Finally, there was a Pied Flycatcher at Priory CP on 15 April.

Sadly, a wing-tagged Red Kite from the introduced population was found dead at Exeter Wood on 8 April, having been poisoned. Far better news was another Red Kite over Dunstable SW on 29 April, seen by many observers. This bird was not wing-tagged, and whilst this does not exclude an introduced bird, the date would also be appropriate for a continental migrant. Other early spring raptors included a displaying pair of Goshawks at a regular site.

Four Brent Geese at Brogborough Lake on 28 April represented a species now occurring more frequently on spring passage, whilst the beginning of May saw a small influx of Garganey with a drake at Willington GP from 1st to 2nd and a pair at South Mills NR on 3rd and 5th. Spring passage of gulls and terns included no major surprises, though there was a Sandwich Tern over Priory CP on 16 April and a good spring passage of Black Terns. Spring wader passage brought good numbers of some of the scarcer calidrids, especially at the new Dunstable SW scrape. There were six adult Knot at Rookery CIP on 8 May, of which one remained the following day, and another at Dunstable SW on 10 May. The latter site also had a Little Stint on 12 May and at least five different Sanderlings between 9 and 16 May, with others at Rookery CIP later in the month.

Even more exciting waders were six Avocets briefly at Willington GP on 23 May and a summer adult Curlew Sandpiper at the same site from 25 to 27 May, but best of all was a Dottérel photographed by a member of staff at Thurleigh Airfield, and present on 13 and 14 May. Curlew were again breeding at this site which is unfortunately very difficult to cover from public vantage points, and is subject to MoD security who should be informed if observers do not wish to be taken for suspected terrorists!

The breeding season produced few other surprises, perhaps due to the cessation of atlas work. Long-eared Owls bred at a new site in the west of the county, but more remarkable were two pairs of Grey Wagtails at new breeding sites, one at Duckmill Weir in the centre of Bedford and a second

inside the Tiger enclosure at Whipsnade Wild Animal Park! A BTO Corn Bunting survey produced some tetrads with good numbers of singing males despite the national decline, particularly in the northern prairies, but no Nightjars were found for the first time for several years. There were again very few reports of Hawfinches, and sadly, after the promise of the previous two years, there were only unconfirmed reports of Woodlark. After this bad news, a more promising development was the presence of an unpaired first-summer female Montagu's Harrier at a site in the north of the County from at least 22 to 27 May.

As autumn passage began, fewer Yellow-legged Gulls were reported in late summer than in 1992. At Willington GP a long-staying female Red-Crested Pochard, present from 10 August, was joined by a second on 9 October, and one or the other was then seen intermittently on the Ouse in Bedford or at Priory CP to the year end, whilst an Egyptian Goose was at Dunstable SW on 28 August and there was an eclipse Garganey at Rookery CIP from 14 to 17 September. Sadly, the potentially most exciting birds of the year both failed to live up to expectations. A Black-headed Bunting was reported at Harrold in late June, but was photographed and proved to be a Weaver species, whilst much excitement was generated by reports of a Crane in the Rookery area on 2 October, but these turned out to relate to a Demoiselle Crane of dubious origin, which had first appeared at Spurn and was later refound in Essex.

After five records of Black-tailed Godwits during July, the main feature of the autumn wader passage was unprecedented numbers of Little Stints, commencing with up to three juveniles at Rookery CIP on 4 and 5 September and another at Willington GP on 5 September, followed by one briefly at Priory CP on the morning of 14 September and then a record party at Rookery CIP from 13 September, with a maximum of eleven on 17 September and three remaining on 26 September, whilst another juvenile at Grovebury SP on 19 September was a site first. The final wader of the autumn passage was also the rarest, a juvenile Purple Sandpiper at Stewartby CP on 27 and 28 September which was the third county record.

Autumn raptors included a female or immature Marsh Harrier over Maulden Woods on 19 September seen by a party of BNHS members. An immature male Montagu's Harrier passed over Southill Park on 26 September, whilst there were two Ospreys, one over Rookery CIP on 10 October, and a bird at Harrold CP which remained for several days around 10 October and had probably been present in the area since late September. There was also a good late September and early October influx of Common Buzzards, with two or three birds seen together at several sites, and many remaining into 1994.

Passerine and near-passerine autumn passage was a little more interesting and extended than usual. After the usual sprinkling of Redstarts and Whinchats, there was a Wryneck in gardens at Bushmead, Luton on 19 September. A first year female Firecrest was trapped at South Mills on 12 October accompanying a flock of Long-tailed Tits with Chiffchaffs and Goldcrests, and another was at Tiddenfoot SP, Leighton Buzzard on 30 October, whilst a male Bearded Tit was at the same site on 9 November. The most interesting record was a County first, a male Dartford Warbler which turned up in gardens at Cockayne Hatley during severe weather conditions late on the afternoon of 21 November and unfortunately could not be re-located the following morning.

Mediterranean Gulls occurred at two unusual sites in September with an adult at Priory CP on the 13th and 14th and a juvenile at South Mills NR on the 20th, and a very pale gull not certainly identified as a second winter Iceland Gull was first seen at Rookery CIP on 19 October and remained in the clay pits to the year end. There were three Red-breasted Mergansers at Priory CP on 31 October and three Egyptian Geese there on 11 and 12 November. On 3 August an eclipse drake Eider, presumably that from 1992, had been found at Wyboston GP, casting severe doubts on its provenance, but on 31 October another found at Chimney Corner CIP coincided with an influx of the species inland, and on 14 November the Wyboston drake was joined by a presumably wild immature male and a female, perhaps part of the same movement. The female had departed the next day, doing no harm to its credibility. On the same day there was a Slavonian Grebe at Rookery CIP.

There was a female-type Merlin at South Mills NR on three dates in late October and early November, whilst a male and a female were seen at Eaton Bray between 21 and 28 November, with the male also seen at Dunstable SW. A ring-tail Hen Harrier was at South Mills on 20 and 21 November. A Black-throated Diver remaining at Priory CP from 20 to 22 November was the first

in the County for nearly ten years, and fortunately its rather brief stay coincided with a weekend, allowing many observers to catch up with the species. As the year ended, Stonechats seemed to have re-established themselves as regular winter visitors at several sites, and, as at the start of the year, there was a Bittern, this time at Brogborough Lake from at least 23 December into 1994, and possibly slightly less elusive than the January bird.

SYSTEMATIC LIST FOR 1993

Following a vote in the Scientific Committee, nomenclature still follows the 'old' English names used in the '*British Birds' list of Birds of the Western Palearctic* (1984).

The following abbreviations have been used in the text: 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 that Barkers Lane GP (TL076493) is now generally known as Priory CP.

- ★ 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.

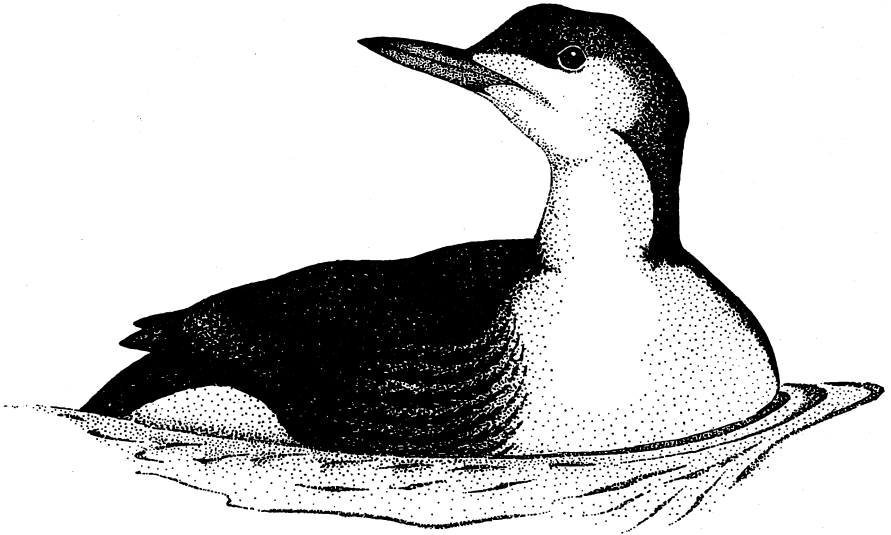
The term 'bird day' is occasionally used in the text to summarise occurrences of birds at well-watched sites. It is a rather arbitrary unit of measure as one bird present for nine days or nine birds present for one day both count as nine bird days.

Non-passerines

Red-throated Diver *Gavia stellata* An oiled individual found at Stewartby CP late on 13 March was still present the next morning but departed at about 1030 GMT (JD, MJS, PSm *et al.*).

Black-throated Diver *G. arctica* An immature was on the Marina pool at Priory CP from 20-22 November and had possibly been present on the main lake late on the evening of the 19th (DK, EN *et al.*). Fortunately its rather brief stay coincided with a weekend allowing many observers to see it.

Little Grebe *Tachybaptus ruficollis* Breeding was recorded at East Hyde where a pair produced four young, on the Hiz at Arlesey, at Cow Pond in Haynes Church End, at Rookery CIP where at least three pairs produced at least eight young, at Chimney Corner CIP, at Willington GP where one pair only produced one young, and at South Mills NR where two pairs were both successful. Display was noted at Luton Hoo. Site maxima during the first winter period were eight at Brogborough Lake on 1 January, seven at Rookery North CIP on 17 January, with eight there on 14 and 27 April, and five at Priory CP. In the autumn and second winter period there were maxima of seven at Dunstable SW on 6 August, 22 at Rookery CIP on 6 September declining to 20 there on the 18th and 18 on the 24th, 13 at Stewartby CP on 27 October, 16 at Luton Hoo on 25 November and seven at Priory CP in November.



Black-throated Diver

(Andy Chick)

Great Crested Grebe *Podiceps cristatus* Breeding was recorded at Luton Hoo (2 pairs), Grovebury Farm SP, Pratts SP, Battlesden Lake, Langford GPs (3 pairs attempted breeding), Steppingley Reservoir, Brogborough Lake, Rookery North CIP, Millbrook CIP, Coronation CIP, Southill Lake, Swiss Garden, Priory CP (2 pairs of which one were flooded out), Willington GP, Girtford GP and Harrold CP. The pair at Girtford GP had recently hatched young on the very early date of 24 March. There were five fledged young on the Ouse at River Meads on 17 July, probably locally bred rather than from Priory CP or Willington GP. Outside the breeding season maxima of 19 were recorded at Brogborough Lake on 14 April and 16 at Grovebury SP on 6 September, whilst at Stewartby CP numbers were much lower than in the past with a high of only 11 on 29 October. Highest count was 64 at Priory CP on 6 March, and 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 | 47 | 58 | 64 | 39 | 24 | 13 | 20 | 36 | 25 | 26 | 27 | — |
| Luton Hoo | 13 | 11 | 12 | 12 | — | — | — | — | — | 14 | 0 | 7-8 |

Slavonian Grebe *P. auritus* The only records were winter plumaged individuals at Brogborough Lake on 24 January (PH, RDM), and at Rookery CIP on 14 November (PA, RAN, MJP).

Cormorant *Phalacrocorax carbo* Again very widely recorded in the Marston Vale and Ouse and Ivel valleys. The very large winter roost at Brogborough Lake seems to have declined, with a maximum of 45 on 7 February, but increased numbers are now noted away from the Marston Vale, with 17 at the smaller Harrold Roost on 7 January. There seems to have been a large influx in the north-east of the county in January, with 56 at Priory CP on 17 January, 48 at Wyboston GP on 27 January and 11 at Bromham Lake NR on 30 January. There were also 15 at Southill Lake on 14 February, and an autumn influx reaching some less usual sites included 11 at Biggleswade on 5 October and 15 at Dunstable SW on 9 October, with finally 12 at Grovebury SP on 28 December. Adults showing characters of the continental 'sinensis' form were recorded at Wyboston GP on 27 January (three or four), Priory CP and Brogborough Lake (two) on 13 February and again at the latter site on 14 February, Bromham Lake on 22 March and Willington GP on 10 April. There were June or July records from Brogborough Lake, Stewartby CP, South Mills NR and Bromham Lake, and the species must be a potential addition to those breeding in the County.

- Shag** *P. aristotelis* There was a small influx in February with an immature at Luton Hoo on 14 February (AJL), another at Chimney Corner CIP on 15 February (MJP) and a party of ten at Elstow CIP on 19 February (KO). A first winter which arrived at Priory CP on 13 February as part of the same influx remained until at least 15 May (MJP *et al.*), and was reported again on 23 June (EN). Finally, another individual was briefly at Priory CP on 14 November (DK).
- Bittern** *Botaurus stellaris* An extremely elusive individual present at Houghton Regis ChP from 1992 was last reported on 6 January (RHC). Another at Brogborough Lake from 22 December was only slightly more obliging (MSG, DJO, AW *et al.*).
- Grey Heron** *Ardea cinerea* The three regular heronries in the County all did well, with 10 nests at Bromham producing 24 young, 17 occupied and two unoccupied nests noted at Southill Park on 21 March and five occupied nests with six other probable nests at Luton Hoo on 14 March. Breeding also took place at a new site in the County with a pair feeding three young at Harrold CP, hopefully the beginning of a new regular herony. Post-breeding flocks were noted at Willington GP (maximum 12 on 24 June) and Grovebury SP (13 on 4 July) and ten was the autumn maximum at Dunstable SW, whilst an excellent 26 was the peak count at Priory CP, on 18 August, with over 20 present through September.
- Mute Swan** *Cygnus olor* Breeding noted from Luton Hoo, Chimney Corner CIP, Coronation CIP, Felmersham NR, Great Ouse at Newnham, Harrold CP, Houghton Regis ChP, Langford GP, Millbrook CIP, Priory CP, Rookery CIP, Steppingley Reservoirs, Willington GP, the Elstow Brook at Willington and the Ivel WBS at Blunham (two pairs). Recorded from all major water areas and rivers with 47 at Radwell on 21 March. The flock on the Ouse in Bedford contained 50-55 for most of the year. Post-breeding numbers involved 34 at Stewartby CP on 4 July. A bird of the 'Polish' morph was seen at Luton Hoo with a typical resident family on 21 December (BRS). More deaths than usual were recorded with one hitting wires at Bromham Lake NR, and two hitting wires at Dunstable SW. Four young at Priory CP had all been killed within a few days with foxes possibly being the culprits.
- Bewick's Swan** *C. columbianus* The only record was of two adults flying east low over Priory CP on 23 January (DK).
- White-fronted Goose** *Anser albifrons* One at New Road GP, Sandy on 15 January (AP). An adult at Southill Park on 17 January (BJN). One adult at Luton Hoo from 10-25 February when it was joined by another. Both remained until 11 March (AJL, BRS). One adult at East Hyde 21-27 February (MDR, PT) with two there on 28th (MDR, TD). Three adults at Woburn on 6 November (BJN).
- Greylag Goose** *A. anser* Breeding noted at Harrold CP (two pairs) and Langford GP (one pair). Up to 200 present in the Carlton/Harrold area throughout the year. In the first winter period 50 on 2 January at Kempston by-pass borrow pit, 65 at Southill Lake on 17 January with 130+ overhead on 14 February, 44 at Wyboston GP on 6 January and 132 on fields by Twin Bridges GP, Blunham on 31 January. In autumn and the second winter period, c. 50 at Rookery CIP on 6 September, 95 at Southill Lake on 26 September, 117 at Biggleswade Common on 24 October and 63 there on 26 December, 192 at Willington GP on 14 November and 120 there on 19 December.
- Canada Goose** *Branta canadensis* Bred at Coronation CIP, East Hyde (one pair), Luton Hoo (c. 60 juveniles), Egginton CC (one pair), Grovebury Farm SP (one pair), Harrold CP (two pairs), Houghton Regis ChP (one pair), Langford GP (attempted), Priory CP (three pairs), Rookery (one pair), Stewartby CP (one pair), Willington GP (one pair). Attempted breeding at Bromham Lake NR. Up to 150 present in the Carlton/Harrold area throughout the year. High counts in the first winter period were 276 at Stewartby CP on 2 January, 217 there on 4th, 156 on 25 January and 168 on 8 February, 145 at Priory CP on 16 January, 87 at Southill Lake on 17 January, 100+ at Woburn Lake on 13 February. In the autumn and second winter period 72 at Willington GP and 66 at Southill Farm Reservoir on 14 August, 246 at Rookery CIP on 23 August, 180 at Southill Lake on 26 September, 359 at East Hyde in September, 117 at Priory CP on 10 October, 91 at Willington on 14 November, 184 at Stewartby CP on 9 December.

Monthly Maxima at Luton Hoo

| Jan | Feb | Mar | Apr | May | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 175 | 125 | 92 | 52 | 75 | 485 | 191 | 195 | 150 |

Barnacle Goose *B. leucopsis* Four pairs nested with at least one pair raising one young at Rookery CIP. Up to 11 regularly recorded Stewartby CP from January — April and four-six there until the end of the year. Twelve south over Dunstable SW on 12 April. Feral birds (usually 1-6) were also noted at Luton Hoo, Millbrook CIP, Priory CP, Radwell, Rookery CIP and Willington GP, and single feral birds were recorded at several other sites. A new flock of 20+ recently released feral birds at Roxton in late August were mainly full winged, but 21 of a party of 22 which arrived from a great height at Priory CP on 23 September were very timid and may have been wild birds decoyed in by the presence of a regular feral individual, the date coinciding with arrivals of the Svaalbad population. Another party of 25 at Willington GP from 30 November to 5 December, were no more wary than the Canada Geese which they accompanied and seem more likely to have related to the Roxton birds or a feral party from elsewhere, but unfortunately Roxton GP was not checked during this period or whilst the earlier party were at Priory CP. In general timidity or tameness does not correlate well with wild or feral status, and wild birds can sometimes copy the behaviour of feral birds with which they associate, but wild geese are frequent targets for shooting and are normally very wary.

Brent Goose *B. bernicla* One found by the small overflow pools on the south side of the Kempston bypass late on 14 February (PA, MJP) subsequently performed a brief tour of the County, appearing at Chimney Corner CIP on 15 February (MJP) and Willington GP from at least 18 to 20 February (DHB, GDP), then back at Kempston later on 20 February before being reported briefly at Priory CP on 28 February, and finally at Radwell GP on 4 March (TD). There was a small influx in late April, with a party of four at Brogborough Lake on the 28th (CET) and probably two separate birds at Coronation CIP on the same day, one carrying colour rings (KO) and probably one of these at Rookery CIP on 29 April (MJP).

Egyptian Goose *Alopochen aegyptiacus* A single at Dunstable SW and Houghton Regis ChP on 28 August was reported by a number of observers but full details were not received. Descriptions were submitted for three at Priory CP on 11 November (EN). In late summer a brood of four raised at Whipsnade Wild Animal Park evaded pinioning and made their escape (per CET). Whether the later records related to Whipsnade birds obviously cannot be determined, though it could be argued that for a feral species, all individuals at large are potentially part of the breeding population, and that the exact date and means of their release or escape is of little importance. Certainly, if the party at Priory CP were those from Whipsnade, they were heading in the right direction to join the feral population in Norfolk!

Shelduck *Tadorna tadorna* Two pairs were present at Grovebury SP during the summer but did not breed this year. Winter birds (one-two) were observed at Dunstable SW, Radwell, Rookery CIP, Priory CP, Grovebury SP, Willington GP and Wyboston GP. There were numerous records between March and May from Brogborough Lake, Dunstable SW, Grovebury SP, Houghton Regis ChP, Priory CP, Rookery CIP (11 on 15 April), South Mills NR and Willington GP. Juveniles passed through in the late summer with two at Rookery CIP on 18 and 24 July, two there on 1 and 12 August, two at Willington GP on 7 August and two at Dunstable SW on 29 August. One adult at Rookery on 6 September and eight adults there on 25th. One immature at Priory CP on 11 September and an adult on 3 November and finally one over Sundon Industrial Estate 8 November.

Mandarin *Aix galericulata* Fewer recorded this year with the only large number being 34 (21 male, 13 female) at Woburn Lake on 4 January. Four pairs at Woburn Lake from March — September with 15 there in May. No proof of breeding. At Linden Lake, Eversholt two males and seven females on 3 January with eight males and three females on the 17th, a pair there in March and a single female in May. Up to one male and two females were observed intermittently on Harlington Mill Pond throughout the summer and early autumn. There were eight at Luton Hoo on 17 January, a pair were present in May and June and breeding was definitely considered to have occurred, with nine there on 18 July, six on 8 October and 12 on 15th. Two pairs at Stockgrove Park on 29 December. Singles were occasionally seen at Brogborough Lake, Priory CP, South Mills, Stockgrove CP.

Wigeon *Anas penelope* Small numbers were observed at most major water areas during the winter periods. During the first winter period larger numbers involved 110 at Millbrook CIP on 1 January, 92 at Rookery CIP on 17 January, 54 at Priory CP on 24 January, 100 at Harrold CP on 30 January, 140 at Radwell GP on 11 February and 52 at Millbrook CIP on 13 March. The last were four on 4 April at Priory CP. One at Dunstable SW on 21–24 August and 12 on 28 August were the first to return. During the second winter period maxima were 108 at Harrold CP on 3 October and 240+ there on 27 December, c. 80 over South Mills on 27 November, 64 at Willington GP on 14 November and 95 on 19 December.

Gadwall *A. strepera* Breeding took place at South Mills (one pair raised one young), Dunstable SW (four pairs; six, eight, eight and nine young — one duckling was seen to be taken by a Mink), Luton Hoo (several broods), and East Hyde (one pair, 10 young, none survived). Recorded in May and June from Willington GP, Priory CP, and Stewartby. Luton Hoo was the main site for this species with monthly maxima as follows:—

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 60 | 50 | 57 | 48 | 26 | 35 | nc | nc | nc | 24 | 55 | 35 |

During the first winter period maxima of 20 at Rookery CIP on 24 January, 18 at East Hyde during February, 16 at Priory CP on 6 February, 14 at South Mills NR on 7 February and 16 in April at Dunstable SW. During the second winter period maxima involved 19 at Stewartby CP on 29 October, 14 at Willington GP on 14 November, 26 in October at Dunstable SW with 33 in November and 25 in December, 30+ at Harrold on 27 December and 24 at Stewartby on 30 December.

Teal *A. crecca* Two pairs bred at South Mills NR and Rookery CIP (one pair). Although recorded from most water areas there were few records of large numbers this year with maxima of 105 at Coronation CIP on 17 January, 34 at Rookery CIP on 24 January, 45 present in flooded fields near Woburn on 31 January and 62 at Coronation CIP on 7 March. In the second winter period Rookery CIP held the largest numbers with 88 on 12 September, 101 on 13th and 171 on 3 October. Noted as becoming scarce at Luton Hoo with a maximum of 13 on 24 October.

Mallard *A. platyrhynchos* Breeding reported from many wetland sites throughout the county with 20 broods reported at Dunstable SW. Maxima recorded during the first winter period were 100 at Grovebury SP on 2 January and 120 there on 31st, 104 at Priory CP on 4 January, 87 at Felmersham NR and 71 at Woburn Lake on 16 January and 260 at Eversholt Lake on 17 January. Numbers were larger in the second winter period with 129 on 2 September at Priory CP, 365 at Southill Lake on 26 September, 110 at Rookery CIP on 16 October, 210 at Dunstable SW in November, 105 at Biggleswade Common on 26 November and 186 at Woburn Lake on 11 December.

Pintail *A. acuta* A male at Woburn Lake on 3 January and a female at Dunstable SW on the same day, one pair at Rookery CIP on 17 January and a party of over twenty flew over South Mills/Blunham on the same day, two at Grovebury SP on 31 January and 16 February, a pair at Brogborough CIP on 7 February, a pair NE over Brogborough CIP on 9th, a pair over Priory CP on 20th, a pair at Willington GP on 14 March and a female at Dunstable SW on 24–26 March and again on 9–12 April. A female at Rookery CIP on 17 June was on an unusual date. The first of the second winter period were four at Rookery CIP on 13 September followed by a pair there on 20th, three at Dunstable SW and two males and four females at Rookery CIP on 14 November, six at South Mills NR on 27 November, one at Basin Pond, Woburn on 28 November, one male at Luton Hoo on 8th and 30 November, 9 December, two males there on 9th and 22 November and a male at Brogborough Lake on 27 December.

Garganey *A. querquedula* There was a small influx in early May with single males at Willington GP on 1st and 2nd (DHB) and at Coronation CIP on 5th (MSG), and a pair at South Mills NR on 3rd and 5th (PRO). An influx at this time of year is encouraging, especially the paired birds, and though there was nothing to suggest that any of these birds remained in the county, it seems likely that the species could stay to breed given suitable habitat. In the autumn a single at Rookery CIP from 14–17 September (TD, MP, MJP *et al.*).

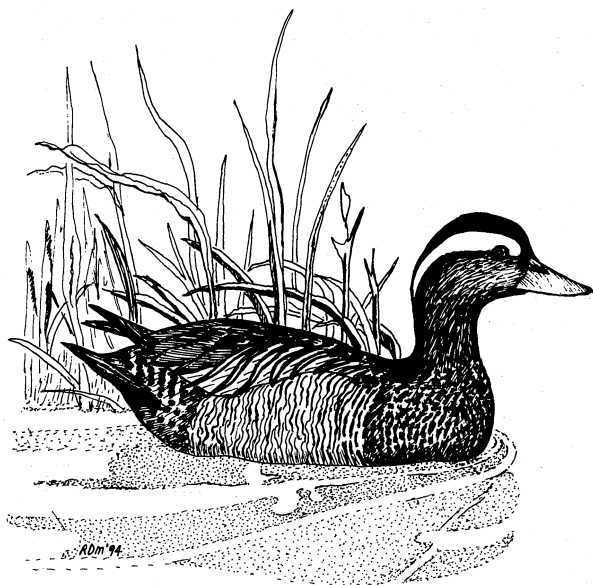
Shoveler *A. clypeata* No breeding reported. Though there were two pairs at Luton Hoo on 27 May there was no sign of breeding. Recorded in small numbers from all main water areas. Larger numbers involved 17 at Rookery CIP on 24 January, 16 at Willington GP on 13 February, 18 west over Priory CP on 21 February, 16 at Rookery CIP on 24 September and 14 there on 15 November, 19 at Southill Lake on 26 September and 38 there on 12 December, 14 at South Mills NR on 22 October, 18 at Dunstable SW on 25 November and 14 in November at Luton Hoo.

Red-crested Pochard *Netta rufina* There was a male at Luton Hoo on 9 and 10 February (BRS), and another, or conceivably even the same, at Priory CP from 12 to 17 February and again from 20 February to 18 March (DK, MJP, JDS *et al*), having put in a brief appearance at Willington GP on at least 20 February (DHB). Later in the year, a female/immature was at Priory CP briefly on 8 August (DK) before moving to Willington GP on the 10th where it remained until 9 October, when it was briefly joined by a second female/immature (DHB *et al*). One or other of these was again at Willington GP on 17 October (GDP), before appearing intermittently at either Priory CP or on the Ouse in Bedford from 20 November up to at least 24 December (DHB, DK, MJP). A bird showing characters suggesting a male hybrid between this species and Mallard was at Chimney Corner CIP on 15 February and Brogborough Lake on 7 April (MSG).

Pochard *Aythya ferina* Recorded from most major water areas with maxima of 61 at Basin Pond, Woburn on 13 February, 64 at Dunstable SW during February and March, 198 at Willington GP on 9 October, 116 at Rookery CIP on 6 September, 70 at Brogborough CIP from 28 October into November and December, 129 at Chimney Corner CIP on 11 November, 183 at Chimney Corner CIP on 28 November.

Maximum monthly counts of Pochard at Priory CP:

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 164 | 184 | 150 | nc | nc | nc | 5 | 4 | 4 | 94 | 88 | 114 |



- Tufted Duck** *A. fuligula* Breeding was noted at Dunstable SW (five broods), Houghton Regis ChP (one pair) Luton Hoo (several pairs), Millbrook CIP (one pair), Rookery CIP (one pair), South Mills NR (three pairs), Stewartby CP (one pair) and Willington (five pairs). Large numbers involved 76 at Priory CP on 3 January and 70 there on 1 February, 55 at Woburn Lakes on 13 February, 132 at Brogborough Lake on 14th and 141 on 20th. 76 at Millbrook CIP on 8 August, 53 at Dunstable SW in November and 51 at Woburn Lake on 14 November. Moulting groups involved 26 in July at South Mills and 28 in July at Dunstable SW.
- Scaup** *A. marila* A male was at Priory CP from 8 to 13 November (EN).
- Eider** *Somateria mollissima* A male at Wyboston GP remained from 1992 to at least 27 January (MJP), and, presumably the same bird, now in eclipse, was reported at the same site in late July and confirmed as present on 3 August and seen again on the 29th (DHB). With such a long stay it seemed likely that it was of captive origin, but another male at Chimney Corner CIP on 31 October had much better credentials, coinciding with a widespread influx inland in the Midlands, and was undoubtedly a wild bird (KO). To further complicate matters, three birds, an adult male, an immature male and an adult female were found at Wyboston GP on 14 November (PSm). The female had departed the next day (RAD *et al*) but the two males remained to at least 4 December. It seems likely that the adult male was the long staying individual but that the other two birds were of wild origin, decoyed in by its presence.
- Common Scoter** *Melanitta nigra* Five males were present at Stewartby CP on 15-16 March (PA *et al*) and two males there on 24th (KO). Four males and three females at Brogborough Lake on 8 April (DJO). One male at Willington GP on 24-27 July (DHB). Five females/immatures at Wyboston GP on 17 November (DCP, MJP) followed by a female there on 20 November (JB, DJO) and 4 December (RIB).
- Goldeneye** *Bucephala clangula* A poor year for this species. Small numbers were noted at Bromham Lake NR, Dunstable SW, Harrold CP, Priory CP, Rookery CIP, South Mills NR and Stewartby CP. Numbers at Brogborough, usually the main winter stronghold of this species in the county, were much lower than usual with the only large numbers reported being 20 on 24 January, 21 on 14 February and 40 on 20 February but only 14 on 2 January and 9 on 6 February. After two immature males and a female at Rookery CIP on 25 April, the last was a female at the same site on 30 April. Very few reported during the second winter period.
- Red-breasted Merganser** *Mergus serrator* Three were at Priory CP briefly on the morning of 31 October, including at least two males emerging from eclipse (DK).
- Goosander** *M. merganser* Recorded during the first winter period from Blunham GP, Bromham Lake NR, Dunstable SW, Grovebury SP, Harrold CP, Houghton Regis ChP, Luton Hoo, Priory CP, Swiss Gardens and Woburn Lake. Larger numbers involved 15 at Woburn Lake on 24 January, eight there on 31 January and seven on 7 and 21 February. A pair mating at Luton Hoo on 11 March was interesting. Recorded from only six sites (Priory CP, South Mills NR, R. Ouse Stevington, Tiddenfoot, Woburn and Harrold CP) during the second winter period with no large numbers.
- Ruddy Duck** *Oxyura jamaicensis* Bred at Luton Hoo, Rookery CIP (five young) and Vicarage Farm CIP. Small numbers recorded from Brogborough Lake, Chimney Corner CIP, Priory CP, Rookery CIP, Stewartby CP. Larger numbers involved 13 on 14 March at Luton Hoo, ten there in April, six at Rookery CIP on 10 April and ten (eight males, two females) at Brogborough CIP on 12 April. At Luton Hoo there were nine in July and 13 were recorded in September, 19 in October and 16 in November, 15 at Rookery CIP on 17 September, 14 on 20th, seven on 3rd October, 11 there on 16 October and six on 14 November. All other records were of five or less.
- Red Kite** *Milvus milvus* Sadly a freshly dead wing-tagged individual from the introduced population was found at Exeter Wood on 8 April, probably having taken poisoned carrion left as bait for other predators (P. Canning per DA). The species is particularly prone to this deplorable practice, which has probably inhibited the spread of the Welsh population. Exeter Wood forms part of the Southill Estates, who have an excellent record for raptors on their land (the site again holding wintering Common Buzzard in 1992/3 and 1993/4), and the source of the

poisoning was not traced. The dead bird had not been reported in the area by any birdwatchers, demonstrating that there is still plenty out there being missed, but another which flew over Dunstable SW on the evening of 29 April was well seen by many observers (TD, SW *et al*), and was not seen to be wing-tagged. Whilst this does not preclude an individual from the introduced stock, the date is not inconsistent with a migrant of continental origin.

Marsh Harrier *Circus aeruginosus* A female over Brogborough Lake on 2 May (KO), a female/immature at Dunton on 22 August (G&CG), and a dark female/immature which passed over a fortunate party of BNHS members in Maulden Wood on 19 September (JA, CET *et al*), were all on typical dates. The Maulden Wood field party were small mammal trapping, but it is unclear whether this served as bait for the Harrier, or indeed whether it was able to participate.

Hen Harrier *C. cyaneus* The only record was of a ringtail at South Mills NR on 20 and 21 November (PRO).

Montagu's Harrier *C. pygargus* Very encouraging was the presence of an unpaired 1st summer female at an undisclosed site in the north of the County from 22-27 May (DHB), whilst a more typical record was an immature male seen over Southill Park on 26 September and possibly present in the area previously (BJN). Let's hope they can get together!

Goshawk *Accipiter gentilis* A displaying pair at a regular site. In winter a male at Blunham on 25 November.

Sparrowhawk *A. nisus* A special request for raptor records led to a further increase in reports, with the species seen at many sites. The number of bird days at Priory CP was 139, up from 120 in 1992, and it was recorded virtually daily at South Mills NR. Interesting reports were of one (possibly sometimes two) roosting on a clock at the cricket pavilion at Luton Sixth Form College from 1 January to 21 March, one carrying a Frog or Toad at Turvey Abbey in May, and one released from a wire enclosure round a shrub at The Lodge in December. Despite many records cards, breeding and display were reported at few sites, though this probably reflects bias in observer coverage away from breeding habitat for this species. Three observers logged enough sightings for their monthly totals to be of interest, and whilst this is not very scientific data, these are tabulated below. They all tend to show that the species' activity peaks in spring and early autumn with minima in summer and late autumn, though obviously daylight hours and observer activity have an effect.

Monthly Sparrowhawk sightings from selected observers:

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PA | 5 | 5 | 3 | 4 | 2 | 0 | 5 | 4 | 4 | 3 | 3 | 4 |
| BJN | 4 | 6 | 6 | 4 | 4 | 3 | 4 | 4 | 6 | 1 | 1 | 7 |
| DJO | 2 | 1 | 6 | 8 | 7 | 4 | 3 | 4 | 9 | 5 | 0 | 3 |
| AW | nc | 3 | nc | 1 | 1 | 3 | 5 | 1 | 2 | 4 | 4 | 5 |

Common Buzzard *Buteo buteo* Though there were a good number of records they were concentrated in regular areas mainly along the Greensand ridge, with a notable influx from September with birds remaining to winter. In the first half of the year the only records were of one over Coopers Hill Amptill on 5 March (JA), one north over Forty Acre Wood on 26 March (TS), one at Shuttleworth College 24 May (TD) and one at Kingshoe Wood on 3 June (BJN). One at Whipsnade Wild Animal Park in April was carrying jesses. There were others at Battlesden Lake on 10 July (PSm) and north over Bidwell on 26 July (D&MG), before the main autumn influx began on 5 September with a bird at Whipsnade Wild Animal Park, thought to be a first winter (CET), with probably the same individual at the same site on 11 September, and possibly the same frequenting the area round a caged captive bird at Aley Green from 10 September (MDR). On 19 September two birds were seen soaring together at the regular site between Warden Great and Little Woods (DHB), with further sightings of presumably one or both of the same at Southill Lake 26 September (two, BJN), Exeter Wood 10 October (DHB) and again 16 October (G&CG), Keepers Warren 3 December (JA), Rowney Warren 4 December (DP), Warden Great Wood 5 December (DJO), Haynes 24

December (GDP), Keepers Warren 24 December (DHB), and finally between Old Warden and Haynes 27 December (JB), with keepers reporting up to three present on the Southill Estates from early September to the year end. A second concentration of birds in the Ampthill area were first noted on 21 September with three in the air together over Ampthill Park, and presumably one of the same relocated later in the day north of Steppingley (DHB) and another reported independently over Ampthill (J. Stoddart per PA). There were further sightings in this area on 3 October at Ampthill (DHB and KO independently), 11 November near Kingshoe Wood (JP), and a rash of records at Ampthill Park on 18 December during an abortive search for a reported Raven (JB, BC, PSm and AW). Others were recorded at Park Wood on 15 October (AW) and at Willington (an unusual site) on 31 October (DHB), and one or two were reported in Luton Hoo during September (per AJL).

Osprey *Pandion haliaetus* Typical records of one north-west over Rookery CIP 22 May (JB), and at the same site but this time going south on 10 October (PSm). There were also several unconfirmed reports from non-birdwatchers, and a long-staying first-winter in the Felmersham/Harrold area was first reported on 19 September (P. Raven, and a Mr. Fowler fishing at Felmersham GP, as was the Osprey, possibly more successfully), seen again at Harrold on 30 September (TS) and finally pinned down and seen by many observers on 10 October on the Ouse at Harrold (DHB).

Kestrel *Falco tinnunculus* A request for all records did not produce as good a response as for Sparrowhawk, but notable were fifteen sightings on 1 January between Brogborough and Blunham by one observer (BJN) and sightings on 50 dates during January and February and 64 from August to December at Blunham (JTRS). Three observers logged all sightings as they did with Sparrowhawk, and this again shows a spring peak and late autumn minimum in visibility for the species. The ratios of Kestrel to Sparrowhawk sightings for these three observers were 176:50, 117:41 and 71:29, that is roughly 3.5:1, 2.9:1 and 2.4:1, showing that this species remains at least the more visible, and probably the more numerous, of the two. Also of interest was an immature male perched outside Sand Martin nest holes at Willington GP on 6 July, possibly trying to emulate Hobby also present at that time, though with a rather different technique and probably less success. (To be fair to the Kestrel, neither were seen to actually take Sand Martins, but the Hobby was probably concentrating on dragonflies.)

Monthly Kestrel sightings from selected observers:

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PA | 8 | 11 | 15 | 11 | 7 | 7 | 8 | 9 | 14 | 11 | 6 | 10 |
| BJN | 29 | 7 | 22 | 19 | 4 | 17 | 10 | 10 | 22 | 19 | 10 | 7 |
| AW | nc | 24 | nc | 7 | 3 | 6 | 5 | 4 | 3 | 3 | 4 | 12 |

Merlin *F. columbarius* Full descriptions for this sometimes problematic species were received and accepted for a female/immature at South Mills NR on 1 and 13 February (PRO), another female/immature at the same site on 23 and 30 October and 6 November (PRO), an adult male and female/immature hunting the same large finch flock at Eaton Bray between 21 and 28 November (PT), with the male also seen at Dunstable SW, a female at Shuttleworth College on 9 December (API), and finally a female at Shortstown on 12 December (MJP).

On a personal note, there seems to have been some improvement in submissions for this species, but it is always a good candidate for self-censorship of records. In early April I had a small falcon, definitely very pointed winged and with grey upperparts and some rufous on the underparts, seen at fairly long range at Aspley Heath. It was very probably this species, but seemed a little large, long-winged and loose in flight for a male, and obviously the wrong colour for a female. Though I did not see a face pattern, under the circumstances I felt that despite the very early date I could not satisfactorily eliminate Hobby, and so did not submit the record, sparing my Local Rarities Panel the unpleasant choice of rejecting a record from the Recorder or accepting a slightly dodgy record on the strength of the observer's name. Sometimes this needs to be done.

Hobby *F. subbuteo* The first was at Priory CP on 24 April, with other April records at Eaton Bray on 25th, Arlesey on 27th, Sundon Park on 28th and Dunstable SW on 30th. Spring migrants were recorded during May at Whipsnade Wild Animal Park, Eaton Bray, Luton Airport (two on 8th), Dunstable SW, Stockgrove CP, Millbrook (two on 10th), Kempston, South Mills NR (two on 24th), Priory CP (two on 23rd) and Great Oaks Wood, but once again the highest spring numbers were at Coronation CIP, where the species was recorded through most of May with a maximum of seven birds on the 6th. In autumn, recorded at East Hyde, Whipsnade Wild Animal Park, Stopsley, Sundon Park, Houghton Regis, Dunstable SW, Bidwell, Harlington, Flitwick, Grovebury Farm SP, Milton Bryan, Woburn, Langford GP (two on 29 August), Henlow SW, Haynes, Blunham, Coronation CIP, Rookery CIP (two on 6 September), Kempston, Bromham, Turvey Abbey (two on 22 August), Priory CP (two on 13 August and 14 September), and Willington GP. High autumn concentrations were recorded at Everton, where up to eight gathered to feed on hatching Cockchafers between 23 July and 5 September, and at Coronation CIP where six were recorded on 25 August. The last records were at Dunstable SW on 3 October and the latest ever in the County at Eaton Bray on 25 October. Breeding was recorded as follows:

| | |
|--------|---|
| Site 1 | Pair bred fledging four young |
| Site 2 | Pair bred fledging two young |
| Site 3 | Pair bred fledging two young |
| Site 4 | Adults seen on a total of 11 dates in June/July |
| Site 5 | Adults seen on a total of 10 dates in June/July |
| Site 6 | Adults seen on a total of 6 dates in June/July |

Peregrine *F. peregrinus* One at Houghton Regis ChP on 3 January (DM), one on the Streatley to Lilley Road on 27 April (RW), and one over the A421 at Marston Wood End on 28 September (MJP). Another in Luton Hoo on 7 October had short leg straps and was confirmed as an escape from a collection at the site (BRS). Records are again becoming regular as would be expected with the recovery of the national population.

Reg-legged Partridge *Alectoris rufa* The largest parties noted were 18 at Dunstable SW, 17 at East Hyde and 10 at Copt Hall. Most records were from the south of the County, but this was probably largely observer bias. Birds showing characteristics of Chukar were reported near Broom and at Toddington, but it was noted that fewer birds showing hybrid characters were present around South Mills NR than in 1992.

Grey Partridge *Perdix perdix* Better recorded than Red-legged Partridge, and present in the breeding season at Pegsdon Hills, Stopsley Common, Warden Hill, Bradgers Hill, Deacon Hill, Bison Hill, Houghton Regis ChP, Dunstable SW, Park Farm and Dolittle Mill Eaton Bray, Totternhoe, Tilsforth, Stanbridge, Silsoe, Old Warden and South Mills NR. As with Red-legged Partridge, observer coverage of this species is far better in the south of the County. The largest parties included 10 at Grovebury SP 6 February, 17 near Warden Hill 7 February, 20 at Bradgers Hill 14 February, 11 Pavenham 23 September, 17 South Mills 18 October and 13 Barton Hills 27 October, but the highest counts were in the Warden Hill/Butterfield Green area on the Beds/Herts border on 27 December, when 74 of 102 birds counted were in Bedfordshire, with 28 east of Warden Hill, 32 between Warden Hill and Whitehill Wood, 21 east of Galley Hill including seven in Hertfordshire, and 18 at Butterfield Green.

Quail *Coturnix coturnix* The only record was of a calling male at Tebworth on 24 and 25 June (AW).

Pheasant *Phasianus colchicus* As normal very few records received for this near ubiquitous species which many observers tend to neglect, perhaps because the numbers in many woodlands are so inflated by releases for game shooting.

- Lady Amherst's Pheasant** *Chrysolophus amherstiae* Along the Greensand Ridge recorded from Charle Wood, Kingshoe Wood (maximum six calling males on 19 May), Flitwick Plantation (three males on 6 January), Millbrook Plantations (five at Moor Plantation at the south-east end on 7 February and five at Jackdaw Hill at the north-west end 16 December), Maulden Wood (three or four calling males on 11 May), Chicksands Wood (one or two calling males), Shuttleworth (a male on 30 July) and the Old Warden CBC where a male in heavy moult on 3 July was thought to be a recent release. It seems that the new records in the Old Warden area in 1992 and 1993 may be due to independent introductions, and whilst we obviously cannot be sure of the amount of movement within large woodland areas such as Kingshoe Wood/Flitwick Plantation and the Millbrook Plantations complex, it seems likely that there is little interchange between the main established sites. The isolated Luton Hoo population was estimated at 30 to 40 birds, and though successful breeding took place, the failure of the species to expand from this site is thought to be due to poor numbers of females.
- Water Rail** *Rallus aquaticus* Recorded throughout the year at Flitwick Moor, where a maximum of four were heard calling in August, September and November, and also recorded at South Mills NR in every month for the first time ever, though only recorded sporadically between April and October. At Priory CP one recorded erratically from 3 January up to 12 March, with two on 6 March, and then one on 28 September followed by occasional records to 11 December. Elsewhere two calling at Houghton Regis ChP on 1 January, one at Luton Hoo on 14 February and again 14 March, one at East Hyde on 21 November, one heard at Harrold CP on 5 December, one at Stewartby CP on 8 December and finally one or two calling at Brogborough Lake on 24 December. One was found freshly dead near the Vauxhall Sports Ground at Luton on 15 April.
- Moorhen** *Gallinula chloropus* Three pairs bred at Dunstable SW and at least six pairs at South Mills NR, possibly including some overlap with six pairs on the Ivel WBS at Blunham, whilst there were two occupied and two unoccupied nests on the Ouzel WBS at Leighton Buzzard. Counts of 100 on 5 January, 120 on 12 January and 1 March and 125+ on 23 November at Luton Hoo were excellent in a species which seems to have declined on many major waters, possibly due to Mink predation.
- Coot** *Fulica atra* Breeding was recorded at Dunstable SW (4 pairs), Summerfield Fruit Farm Lake at Haynes, Brogborough Lake, Rookery CIP, Stewartby CP, South Mills NR (5 pairs) Willington GP and Bromham Lake NR. High counts reported were 120 at Luton Hoo on 8 January, 100+ at Harrold CP on 15 January, 110 at Woburn Lakes on 16 January, 123 at Millbrook CIP and 160 at Chimney Corner CIP on 17 January, 257 at Rookery CIP on 6 September and 108 at Chimney Corner CIP on 19 September with 118 at the latter site on 28 November.
- Oystercatcher** *Haematopus ostralegus* Recorded on 24 dates involving a possible maximum of 36 different individuals. Recorded in every month except most unusually August, September and October and also December. The first was of a single bird at Grovebury SP 1 January and the latest also of a single bird at Dunstable SW 7 November. There was a group of three birds at Brogborough CIP 7 February and at Rookery CIP 23 May. Groups of two birds were recorded at Kempston Relief Road Lake 14 February and at the same location on 20 May, Willington GP 23 May, Rookery CIP 31 May, South Mills NR 1 June and Rookery CIP 3 June. All other records were of single birds.
- Avocet** *Recurvirostra avosetta* A party of six were briefly at Willington GP on the morning of 23 May, a late date for this early spring migrant and breeder (DJO).
- Little Ringed Plover** *Charadrius dubius* The first bird was seen at Dunstable SW on 14 March which is the second earliest County record. The latest recording was of one adult plus two juveniles at the A1 Pit at Lower Caldecote 29 August. Breeding was recorded at the following localities; three pairs at Dunstable SW with one pair double brooding raised 10/12 young to the flying stage, the last juvenile left 26 August. Two broods at Willington GP totalled six young, one pair raised two young at the A1 Pit Lower Caldecote, one pair raised at least one young at Rookery CIP, one pair raised one flying young at Pratts Pit Leighton Buzzard but unfortunately the pair at Grovebury SP failed to rear any young. Birds during the breeding season were also recorded at a pool on the Firbanks Industrial Estate Leighton Buzzard, Cuckoo Bridge GP and at South Mills NR.



Plate 6: Red-throated Diver at Stewartby Country Park, 13 March 1993.

Photo: Roy Nye



Plate 7: Purple Sandpiper, Stewartby Country Park, 27 September 1993 — the third county record.

Photo: Tony Donnelly



Plate 8: Stewartby Lake, a flooded clay pit in the Marston Vale.

Photo: Mary Sheridan



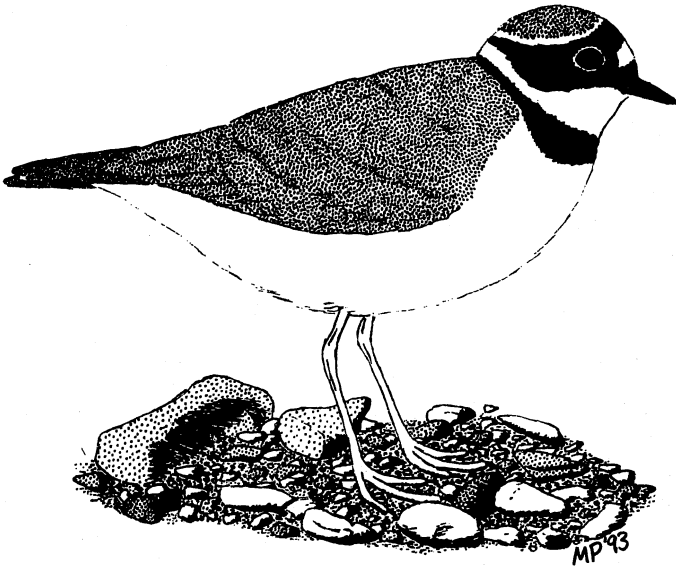
Plate 9: South Mills NR, a disused gravel pit in the Ivel Valley now managed for wildlife.

Photo: Mary Sheridan

Ringed Plover *C. hiaticula* Recorded throughout the County's wetlands from 14 January to 17 September. The high counts were nine Stewartby CP 2 March, ten Rookery CIP 27 April, 21 Dunstable SW 12 and 13 May, and 24 Rookery CIP 4 September. A pair laid four eggs at Dunstable SW with four chicks hatching on 27 May, unfortunately they were last seen on 28th and were presumably predated. One pair bred at Willington GP producing one fledged young. At least one pair bred at Rookery CIP where at least one young reached flying stage. Unfortunately no breeding occurred this year at South Mills NR.

Dotterel *Eudromias morinellus* A single female at Thurleigh Airfield on 13 and 14 May was the most recent of a remarkable series of near-annual records dating back to 1979 (PSJ). The observer was the resident falconer at the airfield up to 1994, and therefore had unrestricted access to this site which is very difficult to work from public vantage points. The earlier records transform the status of this species in the County, and in full are as follows:

| | |
|---------------------------|-----------------------------------|
| one male | 10 and 14 May 1979, presumed same |
| one male and two females | 18 May 1980 |
| four females and one male | 12-13 May 1981 |
| one female | 29 September 1982 |
| one female | 17 May 1983 |
| one male and one female | 1 May 1985 |
| one male | 7 October 1985 |
| one female | 19 May 1985 |
| one female | 1 June 1989 |
| two males and one female | 24 May 1991 |



Little Ringed Plover

(Michael Pocock)

Golden Plover *Pluvialis apricaria* Notable flocks in the first winter period were c. 200 Langford GP 6 January, 200 plus Kempston 30 January, 205 Priory CP 31 January, 332 Elstow CIP 5 February, 125 South Mills NR 1 February, 200 Willington GP 13 February, 120 Lower Gravenhurst 21 February, 130 Stopsley Common 24 February, 2-300 East Hyde 9-16 March, 297 Bradgers Hill Luton 9 March, 300 Eaton Bray 21 March, 188 Butterfield Green Luton 27 March, 200-250 South Mills NR 1-6 April, 500 Shillington 9 April and the last record of four at Stopsley Common on 17 April. The second winter period started with one at Dunstable SW 25 July with the largest flocks being 2-300 Warden Hill 6 November, 230 Biggleswade Common 9 November, 120 Priory CP 28 November, 146 Butterfield Green Luton 28 November, 300 Kempston 6 December, 200 East Hyde 14 December, 500 Radwell 16 December, 128 Harrowden Road Bedford 30 December and finally a large flock in fields adjacent to the A1 at the Biggleswade North Roundabout with 1000 on 6 November building up to 2000 birds by the end of the year.

Grey Plover *P. squatarola* Another good spring passage with the first record of a single bird in full breeding plumage flying over Dunstable SW on 28 April (TD, CET). The main passage took place in May with two at Coronation CIP on 5 May (DJO, GDP), one there on the 6th (PA) and four birds on 7 May (JB, MJP) when also four at Rookery CIP (JB, MJP), two remaining at Coronation CIP on 8 and 9 May (MJS, PSm, KMS *et al*), whilst there were also two at Rookery CIP on 8 May and 9 May (RAD), one on the 10th (JB, RIB, PA) and then three on 11 May (PT), one remaining to the 13th (DJO), two Dunstable SW 12 and 13 May (TD, MP, PT, PSm) with another there on the 19th (TD), three flying over Priory CP 12 May (DK) and the last Spring bird was seen at Rookery CIP on 25 May (JB). The return passage started with one at Rookery CIP 12 September (MJP), followed by two there 16 and 17 September (TD, PT) with one there on the 19th (PSm), and then a single juvenile bird at Grovebury SP 19 September (PSm, a first site record), a single bird at Willington GP 29 September (TD) and finally a very late bird reported at Priory CP on 27 November (per DK).

Lapwing *Vanellus vanellus* Breeding was noted at suitable localities throughout the county including five pairs Whipsnade Wild Animal Park, three pairs East Hyde, c. ten pairs around Dunstable SW, six pairs Butterfield Green Luton, four pairs South Mills NR (10 pulli ringed) and several pairs at Rookery CIP. Notable flocks outside the breeding season were 1000 Dunstable SW 8 January, 2000 Rookery CIP 17 January, 1800/2000 Grovebury SP 6-14 February, 1500 Girtford GP 10 February, 2000 South Mills NR 13 February (site record), 1500-2000 East Hyde 19 February — 11 March, 1500 Radwell Fields 16 December and finally 1500 Grovebury SP 19 December.

Knot *Calidris canutus* An impressive influx at Rookery CIP on 8 May, when six adults arrived during a heavy shower about 13.00 (KO) and were still present at 19.30 (RAD) before being joined by a seventh by 20.00 (KO). One remained there the following day, and there was another at Dunstable SW on the 10th (RAD, PT). In autumn there were three winter plumaged adults at Rookery CIP on 22 and 23 August (KO).

Sanderling *C. alba* In May a fine series of records from Dunstable SW with one in non-breeding plumage on the 9th, three in intermediate plumage on the 10th and 11th, one on the 12th and 13th, and then another in full summer plumage on the 16th, a total of at least five (RAD, PT *et al*). These were followed by an adult at Rookery CIP on the 18th (JB, RAN) and two there on the 23rd (JB, MJP, PSm).

Little Stint *C. minuta* In spring a summer plumaged individual at Dunstable SW on 12 May (TD, PT *et al*) was followed by a rather grey bird at Rookery CIP on 21 May (JB, DJO) and another in transitional plumage at the same site on 29 May (PSm). In autumn singles at Rookery CIP on 24 July and 8 August (JB) and a juvenile there on 16 August (MJP), followed by three juveniles at the same site on 4 September (JB) and two there the following day (DJO) when there was also a juvenile at Willington GP (DHB). There was then a slight lull before an excellent series of records from Rookery CIP began with four more juveniles on the 13th and three on the 15th (DJO) and 16th (MJP), and culminated in eleven, a County record flock, on the 17th (MJP, PT *et al*), with two remaining on the 18th (PSm). Elsewhere there was one at Priory CP on the 14th (DK) and another at Grovebury SP on the 19th (PSm). Finally three juveniles at Rookery CIP on 26 September concluded a remarkable passage (JB).

- Purple Sandpiper** *C. maritima* Wader highlight of an excellent year for calidrids, the third ever in the County was found on 27 September on the boat slipway at Stewartby CP and remained to the following day, being seen by many observers (TD, MJP *et al.*).
- Curlew Sandpiper** *C. ferruginea* An interesting adult in very grey fresh summer plumage was at Willington GP from 25 to 27 May (DHB, DJO *et al.*). In autumn a juvenile at Rookery CIP on 4 and 5 September (JB, DJO).
- Dunlin** *C. alpina* Unusually this year there were several January records which may have involved some of the same birds, four at Brogborough CIP, two flying over Houghton Regis ChP and three at Dunstable SW all on 3 January, two at Priory CP on 4 January and eight flying over the same location 30 January. After six at South Mills NR on 21 March, the main spring passage took place during April and May, notable records being 18 Rookery CIP on 24 April, ten Rookery CIP on 10 May, seven Dunstable SW on 12 May and five at Coronation CIP on 15 May. On the return passage the highest numbers were recorded at Rookery CIP, 13 on 25 July, 20 on 28 July and six on 15 September. The latest record was of a single bird at Rookery CIP on 24 October.
- Ruff** *Philomachus pugnax* The earliest record was of a female South Mills NR 21 March. The spring passage was mostly recorded from Rookery CIP where the first birds were two females 27 April with a maximum count of five birds 7 May. Other spring/early summer records included two males in resplendent breeding plumage at Dunstable SW 22 June, a very rare record for this month in the county. On the return passage Rookery CIP again attracted the highest number of birds with seven 17 September. Other sightings included three at Priory CP and two at Willington GP both on 2 October, possibly involving the same birds. The latest record was of a single bird at Priory CP 17 October.
- Jack Snipe** *Lymnocyptes minimus* During the first winter period the maximum count was of seven at Grovebury SP 17 January followed by three 14 February. A maximum of three birds were seen at Houghton Regis ChP 14 February with two still present 17 February. Four birds were present at South Mills NR 28 March. The only remaining records were of single birds at Linslade and Dunstable SW. Records in the second winter period were even more scarce, the first being of a single bird at South Mills NR 16 October followed by two at the same locality 22 October. Single birds were present at Biggleswade Common 24 October, Dunstable SW between 12-17 November, two at Houghton Regis ChP 27 November and finally a single at Grovebury SP 12 December. A poor year for this attractive wader.
- Snipe** *Gallinago gallinago* Possible breeding was only reported from two locations Rookery CIP and South Mills NR but no eggs or young found. Peak numbers outside the breeding season were Grovebury SP 30 on 31 January and 11 on 14 November, South Mills NR 19 on 6 March, 24 on 27 November and 25 on 5 December, Luton Hoo 13 on 14 February, East Hyde 20 on 25 January, 15 on 21 February and eight on 28 December, nine at Houghton Regis ChP on 27 March, four Dunstable SW on 27 September and five Biggleswade Common on 26 November.
- Woodcock** *Scolopax rusticola* Roding recorded at Wavendon Heath/Aspley Heath (3), Pegsdon Hills (3), Maulden Woods (3), Sheerhatch Wood (2), The Lodge Sandy, Haynes, Flitwick Moor (2), Shuttleworth, Home Wood, Knotting Green and Hillands Melchbourne. Outside the breeding season birds were noted from Wavendon Heath/Aspley Heath, South Mills NR, Bluebell Wood Whipnade Wild Animal Park, Galley Hill, Flitwick Moor, Hills Spinney Turvey, Bramingham Wood Luton and Girtford East GP.
- Black-tailed Godwit** *Limosa limosa* As usual all records are published; one Rookery CIP 10 May (RIB), one Dunstable SW on 12 May (TD), four adult males, one of the *islandica* race, Rookery CIP 3 July with one remaining on 4 July (PSm), 16 Rookery CIP 10 July (JBT), one (possibly a juvenile) Willington GP 22 July (DHB) and five there on 26 July (RIB), 12 in summer plumage Rookery CIP 30 July (JB) with one there 31 July (RAN), and finally a single bird flying over Rookery CIP 30 August (MJS). A good year for this rare but regular passage migrant.
- Bar-tailed Godwit** *L. lapponica* A much better year than 1992 for this rare passage migrant. All records are published starting with a remarkable occurrence of 27/28 birds flying north west over Priory CP 30 January (EN), followed by four east over South Mills NR 24 April (PRO), one Rookery CIP (MJP) and five over Priory CP (per DK) 28 April, three winter plumage

and one summer plumage birds at Dunstable SW (TD, PT, PSm), two flying over Priory CP (DK) and two further birds at Rookery CIP (MJP) all on 29 April, one Rookery CIP 6 May (CET), one Dunstable SW 12 May (PT, PSm), one Rookery CIP 14 May (JB) and finally the only Autumn record one at Rookery CIP 8 September (TD).

- Whimbrel** *Numenius phaeopus* All records are published. The first spring record was of two Rookery CIP 25 April (MJP) followed by two over South Mills (PRO) and one at Dunstable SW (DT) 27 April, one Coronation CIP 5 May (KO), one over Dunstable SW 7 May (PT), one Coronation CIP 8 May (EN), one over Bluebell Wood Whipsnade Wild Animal Park 10 May (CET) and one Rookery CIP 13 May (MJS). The return passage started with one Rookery CIP 12 July (AW) followed by one Coronation CIP/Rookery CIP 16 July (KO), 33 over the Greensand Ridge Everton 2 August (AHC), five Rookery CIP 19 August (KO), one over Dunstable SW 11 September (PT) and the final record for the year one heard at night over Eaton Bray 26 September (PT). A much better year in the county for this species than 1992.
- Curlew** *N. arquata* Successful breeding was again reported from Thurleigh Airfield in the north of the County but unfortunately no details of the success rate were received. The greatest number of birds seen together in one flock were six over Priory CP 24 July. Groups of two were reported from Willington GP 7 July and 24 August, Priory CP 2 August, and at Everton 7 August, all remaining records were of single birds spread throughout the year; Arlesey 9 January, Rookery CIP 14 February, Dunstable SW 5 and 13 March, Bromham 31 March, Priory CP and South Mills NR 3 April, Rookery CIP Stewartby CP and Cockayne Hatley 11 April, Priory CP 25 April, Rookery CIP and Dunstable SW 27 April, Coronation CIP 5 May, Thurleigh 13 May, Old Warden CBC 15 June, Priory CP 27 June, Rookery CIP 7 July and 7 and 25 August, and at South Mills NR on 8 July, 21 July and 3 October. There was a late November record from Luton Airport but no date given. The last definite record for the year was of a single bird over Priory CP 27 November.
- Spotted Redshank** *Tringa erythropus* As in 1992 there were only three records of this rare wader in the county this year. The first one was an adult in breeding plumage at South Mills NR 24 May (PRO), followed by an adult already moulting into winter plumage at Rookery CIP 11 July (PSm) and finally another adult bird moulting at Rookery CIP on 5 September (PSm, DJO, RDH, PH).
- Redshank** *T. totanus* Despite the worst ever spring for numbers at South Mills NR a pair did breed and raised two fully fledged young. Two pairs raised three young at Rookery CIP, one pair bred at Groveby SP raising two young, one pair at Dunstable SW raised four young and successful breeding also took place at Willington GP with two broods each of two young. A more successful year for breeding in the county than 1992. Outside the breeding season the earliest record was of a single bird at South Mills NR 27 January and the last, also of a single bird, at Willington GP 15 November. Peak numbers were seven Coronation CIP 14 March and six Willington GP on the same date, eight Rookery CIP 24 and 27 April followed by a count of nine there on 7 May and finally five at Dunstable SW 19 July.
- Greenshank** *T. nebularia* The earliest record was of a single bird at Steppingley Reservoir on 28 April and the latest of a single bird at South Mills NR 19 September. The spring and autumn migration recorded by bird dates was one in April, 13 in May, five in July, 19 in August and 11 in September with a total number of 49 as opposed to 60 bird dates in 1992. Peak numbers were also disappointing with four at Coronation CIP 7 May, nine Rookery CIP 15 August and five Dunstable SW 17 August.
- Wood Sandpiper** *T. glareola* One at Willington GP on 15 April (RDM), one at Rookery CIP on 10 May (PA, JB), and one at the same site 17 September (JB, MJP) were the only records.
- Green Sandpiper** *T. ochropus* One or two birds were reported virtually throughout the year at Dunstable SW. The species was recorded in every month at other wetland sites throughout the county. Peak numbers were three to five at Willington GP between 18 July and 12 August, followed by three at Arlesey Common 20 March, South Mills NR 18 September and Priory CP 16 October.

- Common Sandpiper** *Actitis hypoleucos* This species was recorded on 112 dates throughout the year and almost daily during May, July and August. The greater number of dates than the 94 recorded in 1992 was undoubtedly due to the greater coverage of Dunstable SW. The first birds were earlier than normal with two at Flitwick Moor 27 March followed by one at Woburn 3 April. The latest date was of a single bird at Tiddenfoot SP Leighton Buzzard 9 November. The maximum counts were six at Priory CP on 17 July and ten there 10 October, seven at Dunstable SW 10 May with six at the same location on the 5-7 August and five on 31 July to 4 August and 8 August. From other locations there were four at Rookery CIP on 10 May, four at Grovebury SP on 1 August and four at South Mills NR 18 August.
- Turnstone** *Arenaria interpres* All records this year were either in April or May with none during July or August. They were as follows; four Rookery CIP 28 April, one with two Bar-tailed Godwits flying over Priory CP 29 April, one Rookery CIP 7 May, five Coronation CIP 8 May (MJS), one Chimney Corner CIP 9 May, two Dunstable SW 10-11 May, one Rookery CIP 10 May, four Dunstable SW 12 May and one Rookery CIP 18 and 21 May. The five birds at Coronation CIP (one male and four female) equalled the previously held county record of five or possibly six birds seen at Bedford SF during 7-10 August 1961.
- Mediterranean Gull** *Larus melanocephalus* Three singles bring the county total to around 34, all since 1982. An adult in almost full summer plumage was found in the Stewartby CP roost on 15 February (MSG). Another adult was reported at Rookery CIP on 15 August but no description supplied (RAN, PN), perhaps it was the same as the fully detailed adult at Priory CP roost on 12 September (TN) and still present next morning, flying off at 06.35 (DK). A juvenile moulting to first-winter plumage was at South Mills NR on 20 September (PRO).
- Little Gull** *L. minutus* There were only three spring passage records involving 17 birds. On 31 March, an adult summer plumaged Little Gull was described at Dunstable SW (EN, PT, NRF). Another adult was reported at Priory CP on 13 April (RIB) and on 24 April, 12 adults and three first-winter birds flew in from the north-east and out south-eastward (DK). Autumn passage comprised about 19 individuals and commenced at Priory CP with a second-summer bird on 5 September (EN) followed by an immature on 9th (DJO, JDS), two adults on 13th, three immatures on 14th (DJO) to 16th, reducing to two on 17th (DK) when there were also two immatures seen at Stewartby CP (PT), eight having been there on 13 September (TD) and a single juvenile on 14th (MJP). Two first-winter birds were reported at Priory CP on 19 September (MKB). Another juvenile was at Stewartby CP on 28 (RIB, MJP), 29 (TD, PA) and 30 September (RAB). Lastly a late immature was at Priory CP on 7, 19 to 20, 23 to 24 and 26 November (DK, EN).
- Black-headed Gull** *L. ridibundus* Records were received from eight observers. Two sooty coloured birds were at East Hyde on 2 January (MDR) one of which was at Luton Hoo on 5 January (BRS), (cf. East Hyde 10 December 1992), and perhaps one of these was at Dunstable SW on 1 July (PT). Probably 8000 of around 11000 gulls estimated in the roost at Stewartby CP on 17 January were this species. Occasional evening counts at South Mills NR of birds flying north to roost were: c. 70 on 19 January; c. 100 on 24 January; c. 150 on 12 February, c. 400 on 4, 7 and 11 March, c. 500 on 14 March and c. 100 on 8 April. A leucistic bird was in the roost at Stewartby CP on 11 February (MJP). Strong passage was noted in March at Priory CP with 700 north-east in 2½ hours on the 6th and a similar number on 10 March, while 6000 passed north east there between 17.20 and 18.30 BST on 11 March. In July 850 were noted passing SW on 30th. On 13 and 22 March respectively pairs were seeking territories at Millbrook Pillinge NR and Bromham Lake NR but did not nest. On 8 May 12 birds were apparently on nests at Rookery CIP with c. 20 pairs breeding there later in May and juveniles on 6 June. One at Rookery CIP on 4 May had black wing tips (MJP) and another on 28 December at Bromham was a 'garden first'. Lastly, a most interesting record was of an adult found freshly shot dead on 14 February on no. 4 Lagoon at Dunstable SW which had been ringed as a nestling at Dragsfjard, Finland on 13 June 1988.

Common Gull *L. canus* In the first winter period the maximum at Priory CP was 118 on 31 January. On 17 January, 400 plus were counted amongst around 11000 gulls in the roost at Stewartby CP. At Priory CP, a second winter with faint tail spots was amongst c. 20 present on 12 January (MSG), and on 20 January at Brogborough Lake a different second winter amongst about 30 Common Gulls present had a broken tail band consisting of large blackish spots evenly spread over the tail, characteristics which are rare in second winter Common Gull and invite confusion with second winter Ring-billed Gull (MSG). This species frequents playing fields more than most gulls, and 48 were on playing fields at Hillgrounds, Kempston on 7 February. At Dunstable SW, 25 were present on 29 March and 18 on 4 April. The only report for South Mills NR was of 12 on 9 April. Two first winters were still at Rookery CIP on 7 May. An adult on 20 June at Priory CP was an exceptional date with another bird reported on 1 July. A sub-adult was at Willington GP on 28 June and a first summer was at Dunstable SW on 1 July. These are some of the earliest ever returning birds in Bedfordshire. An adult on Rookery CIP on 31 July was a more typical early autumn date, and an adult and a second summer were there on 2 August and an adult was at Willington GP on 3 August. Late year counts on playing fields at Butterfield Green, Luton gave a maximum of 460 plus on 30 December, whilst 95 were counted at Priory CP on 7 November.

Lesser Black-backed Gull *L. fuscus* As usual, roost counts at the beginning of the year were in single figures only, with five adults at Brogborough Lake on 2 January and only four amongst an estimated 11000 gulls at Stewartby CP on 17 January. Four on 8 February were the first for the year noted at South Mills NR. By 14 February 110 were counted in the roost at Brogborough Lake. Passage records for the south of the county included 130 on a field near Toddington on 5 May and 88 on Barnfield College Fields, Luton on 10 October. After the peak passage, 93 were at Brogborough Lake on 14 April, 230 at Coronation CIP on 15 April, 100 at the same site on 24 April and 150 plus at Rookery CIP on 29 April. At Priory CP north-east movement of immatures was noted in May with 94 on 13th 78 on 18th, 68 on 19th, 82 on 20th and an excellent 540 on 23 May. Highest March to June monthly counts at Dunstable SW were 18 on 3 April, 55 on 17 May and 85 on 10 June, whilst 30 flying north around 22.35 over Kempston on 26 June were notable. As autumn passage built up, 390 plus were counted at Rookery CIP on 16 August and on 2 September the majority of maybe 8500 gulls at Stewartby CP at last light were this species. Lastly, singles were noted at Priory CP on 20 November and at Stewartby CP on 5 December, and up to nine were reported south over Priory CP on 12 December.

Yellow-legged Gull *L. cachinnans* Only three observers were familiar enough with the separation from Herring Gull to submit records. Thanks are due to Rob Hume for very useful comments on some of the more difficult records, particularly of winter and non-adult birds, and we have followed him in accepting a second-winter bird on 20 January at Brogborough Lake (MSG) and an adult in the roost at Stewartby CP on 7 February (MJP), there also being three other possibles on that date and another possible adult there on 14 February. Two 1992 records were also retrospectively accepted — see 'Additions to the 1992 Report' below. Adults at Chimney Corner CIP on 15 August (DHB) and at Rookery CIP on 16 August (MJP) were fully described and on typical dates matching earlier accepted Bedfordshire records.

Herring Gull *L. argentatus* At South Mills NR, Herring Gulls were recorded in small numbers throughout year after January (PRO). At Dunstable SW where the species is scarce, two on 21 March and four on 30 October. At Priory CP, passage was noted from 6 February to 7 March with 94 north on 6 February, 124 north-east on 7 February and 82 north-east on 14 February. The only winter roost count submitted was for maybe 2500 of 11000 gulls estimated in the roost at Stewartby CP on 12 January. Numbers declined quickly during March and by April only single figures were around the clay-pits e.g. five at Rookery CIP on 27 April and seven on 29th. Virtually absent through July to August, (when Yellow-legged Gull is more likely, MJP pers. comm.), six adults were in Rookery CIP on 6 September. On 7th April on albino adult was described at Rookery CIP (KO). During the 1993/94 winter, regular watching of Herring Gulls in roosts at Brogborough Lake and Stewartby CP gave estimates of 70-80% (MSG) and 60-75% (MJP) of this species as being the northern

L. a. argentatus, rather than British breeding *L. a. argenteus*. However nearly all these northern birds have gone by March.

Iceland Gull *L. glaucoïdes* Fifteen observers submitted c. 27 records, quite a reduction compared to recent years. Full descriptions were received, and accepted, of a second-winter bird at Stewartby CP roost on 23 January (PRO, KO, JDS). Presumably the same bird was described from Brogborough Lake on 24 January (RDM, PH) and 30 January (KMS). On 31 January a full adult was seen at Brogborough Lake (PSM) and recorded again from this site on 6 February (RC, RAN, TD, KO). On 28 February it was at Stewartby CP (KO) and again there on 2 to 7 March (MJP, KO, DJO, JDS, TD). It was also at Brogborough Lake on 1 and 7 March (MSG, KO) and reported again on 4 April (RAN). The third bird of the year was a first summer individual described at Stewartby CP on 29 March (JB). In the second winter period, a very white bird was found in the roosts in late October and was seen on several occasions until April 1994. A number of observers did not consider confirmed identification of this individual as Iceland Gull as safe (DHB, RAH, DJO, MJP). Whilst it appeared to show many of the characters of Iceland Gull and probably was of this species, structurally it was not quite right. It was smaller than Herring Gull but a fraction longer than Lesser Black-back, and the head did not seem round enough, with the bill consequently seeming rather long. The primaries extended well and had the characteristic cross-over and the upward tilt exhibited by Iceland Gull rather than either of the other species. Bill thickness was closer to Lesser Black-back than Herring or Glaucous Gull, and a runt individual of the latter species was ruled out by wing proportions. A yellow iris and other bare parts coloration was also correct for a second-winter second/summer Iceland Gull. However, it was considered even less like a typical Iceland Gull after reappearing on 10 February 1994 when the forehead seemed flatter, though it was almost certainly the same bird as it seems very unlikely that there could be two such very white birds. If it was not an Iceland Gull its identity is even more puzzling, as hybrids between Herring and Iceland Gull are unknown and an albino plumaged hybrid seems far-fetched. An albino Lesser Black-back seems the only alternative to Iceland Gull, but over-wintering of that species is not very likely. Kumlien's Gull, *L. g. kumlienii* can show a flattish forehead like this individual (MJP pers. comm), but this sub-species should be darker than typical Iceland Gull, and is so rare in Britain that an albino seems highly improbable.

Glaucous Gull *L. hyperboreus* An adult in winter plumage was fully described in the roost at Stewartby CP on 22 (KO) then 24 January (KO, MJP, PS, DJO). The same bird was reported from Brogborough Lake earlier on 24 January (RAN). Possibly the same bird was claimed at Brogborough Lake on 1 March (RAN) and at Stewartby CP on 4 March (TD), but no details were submitted regrettably. A first winter bird was described at Brogborough Lake on 24 January (RDM, PH) then on 30 January (KMS). Possibly the same first-winter bird was well seen in the Stewartby CP roost on 4 March (MJP, TD) and again on 6 March (KO). On 1 March, at Brogborough Lake, a possible Glaucous/Herring gull hybrid was noted (MSG). With no second-winter period records, the two new birds in 1993 take the County total to around 42, all but two occurring in the last 10 years.

Great Black-backed Gull *L. marinus* Present in the clay pits roosts in high numbers till early February when their numbers decline rapidly coinciding with the equally fast departure of *L. a. argentatus*. Regrettably accurate peak counts are difficult to achieve with gulls still coming into Stewartby or Brogborough at very last light, also rapid increases in Lesser Black-back numbers from late January tend to mask Great Black-back reduction. On 17 January over 620 were counted in a Stewartby CP roost of around 11000 gulls, and 500 plus were counted there on 24 January. Thirteen were present at Priory CP on 27 January and 13 at Coronation CIP on 14 February. Immature birds in single figures hang around the lakes through April, six at Stewartby CP in the evening of 29 April being typical. In the second period a first summer was noted at Rookery CIP on 16 August with an adult and first-winter there on 6 September. Great Black-backs were recorded from South Mills NR in every month except July, whereas at Dunstable SW single adults were recorded on 1 January and mid-December and are considered scarce at that well watched site.

Kittiwake *Rissa tridactyla* Only three records in 1993. An adult was fully described at Brogborough Lake on 25 January (PA). A first-summer was seen at Harrold fire-station pit on 23 February (TD, DJO, JDS). Lastly a first winter was identified flying through Barton Cutting about ½ mile east of Streatley on 10 September (MJS). This gull is becoming less frequent in the County than the white-winged species in this report.

Sandwich Tern *Sterna sandvicensis* Just two records of this annual but scarce passage migrant. On 16 April one was seen at Priory CP (DK, DJO) and two flew east-north-east there on 7 May (DK).

Common Tern *S. hirundo* Recorded from 15 localities. First arrivals were at Priory CP with two on 9 April. The last was a single also at this site on 17 and 18 September; other late singles were at Brogborough Lake and Stewartby CP on 17 September. High numbers at Priory CP included 14 on 21 April, 24 on 24 April, 28 on 3 May, 30 on 28 and 29 July, 27 on 11 and 12 August and 26 on 16 August. Elsewhere, eight at Stewartby CP on 24 April was the highest count for that site. At Grovebury SP one pair raised a single flying youngster and there were four adults and five juveniles on 25 July. Likewise a single juvenile was raised at Dunstable SW. Ten pairs were noted breeding at Chimney Corner CIP on 31 May. At Willington GP mobbing behaviour was noted from late June and two pairs were thought to have fledged two young, whilst one pair with three juveniles was noted at Harrold CP on 23 June and 6 July. No breeding was recorded at Bromham Lake NR.

Arctic Tern *S. paradisaea* Only eight records from five observers was indicative of much smaller passage than in some recent years. At Priory CP, after one reported on 22 April (per DK), three were seen on 25 April and 17 on 2 May (DK), with two more on 5 May (MJP, MF, JB) and two on 10 May (DK) and 11 May (PT). Elsewhere there was one at Rookery CIP on 11 May (JB, GDP) and two at Brogborough Lake on 19 May (TD).

Black Tern *Chlidonias niger* Spring passage occurred on ten dates from 22 April to 19 May with records from seven sites. The highest day count was 45 on 11 May with nine at Priory CP (DK), 11 at Brogborough Lake, 15 at Rookery CIP, six at Dunstable SW and four at Chimney Corner CIP (PT). A single at Luton Hoo on 12 May was a scarce record for that site (AJL, BRS) and a single at Stewartby CP on 9 (PT, RAD) and 10 May (PA) was the only one for that well-watched site this year. A single adult was at Priory CP on the unusual date of 23 June (DJO, DK), and the only autumn record was of three at this site, an adult and two juveniles, on 22 August (DK, PA, EN).

Feral Pigeon *Columba livia* This species is still disregarded by most observers, though it is probably no more reliant on reinforcement from escaped or released stock than Pheasant or Red-legged Partridge, and once again no record cards were received.

Stock Dove *C. oenas* Largest parties noted were 120+ at Luton Hoo on 5 January, with several other counts of between 75 and 100 there during January, 120 in fields near Priory CP on 16 January with other counts of over 50 in the autumn, and a remarkable 210 at Willington GP on 28 August.

Woodpigeon *C. palumbus* Largest flocks reported were 1800 near Kingshoe Wood on 7 January, c. 900 at Galley Hill on 7 February, c. 1000 regularly at Eaton Bray between October and December, 1250+ at Crown Farm Turvey on 1 November, 800+ to roost at Sandy on 7 December and c. 1500 over Dunstable SW on 27 December.

Collared Dove *Streptopelia decaocto* Regular counts were made at the Priory CP roost with maxima of 122 on 5 January and 115 on 6 February. This species can breed through much of the year, and two young were noted making a first flight at Harlington on 16 October.

Turtle Dove *S. turtur* The first was at Pegsdon Hills on 11 and 12 April, with other April arrivals Dunstable SW on 23 April, Stewartby CP on 24 April, Blunham on 25 April, Waterloo Thorns CES on 27 April and South Mills NR on 29 April. None bred at Priory CP and only one male held territory at the Old Warden CBC. A party of 11 on stubble at Lower Gravenhurst on 20 September was the largest of the year and also the latest record.

Ring-necked Parakeet *Psittacula krameri* One flying over Biggleswade Golf Range on 27 December (BK, RDM).

- Cuckoo** *Cuculus canorus* The first were at the Old Warden CBC on 10 April with two or possibly three singing, and at Stewartby CP on 11 and 12 April, but most observers recorded first arrival dates between 20 and 25 April. In autumn two confiding juveniles were noted at Willington GP 10-14 August and Dunstable SW 29 August—26 September, but more remarkable was a first winter at The Lodge on 15 October, a date more normally associated with its American relatives.
- Barn Owl** *Tyto alba* One was noted at the traditional Willington Dovecote site on 7 April, and also reported in the breeding season from Luton Hoo, Harlington, Flitwick, Eversholt, Shuttleworth and Knotting. It was thought that birds might have been released at Luton Hoo. Elsewhere reported from East Hyde, Dunstable SW, Maulden, Eastcotts and South Mills NR in the first winter period, and from Aley Green, Luton Airport, Hockliffe, Toddington, Milton Bryan, Eversholt, Sutton, Everton, Broom, Sandy, South Mills NR, Blunham, Berry Farm Wood Wootton and Priory CP in the autumn and second winter period. A dead bird was seen on the A6 Silsoe bypass on 21 April and another was found dead on the A600 at Cardington on 28 July. Slight encouragement in that records were more widespread later in the year, but the species remains very scarce and the regular road casualties cannot help.
- Little Owl** *Athene noctua* In the breeding season recorded from East Hyde, Luton Hoo (at least three pairs), Stockwood Park Luton, Houghton Regis ChP where a pair bred, Bidwell, Whipsnade Wild Animal Park (three pairs), Eaton Bray (at least three pairs), Tilsworth Golf Course, Clifton, Eggington, Tebworth (two pairs), Leighton Buzzard, Woburn, Silsoe, Lower Gravenhurst, Shuttleworth, Old Warden (two pairs), Haynes, Kempston West End, Turvey, Cardington, South Mills NR where a pair fledged three young, Blunham and Melchbourne Park. Outside the breeding season also recorded at Dunstable Downs, Pegsdon, Knocking Hoe, Hockliffe, Potsgrove, Lidlington, Ridgmont, Hatch, Biggleswade Common, Wootton Broadmead, Stevington and Great Barford. The relative scarcity of reports in the north of the County this year is probably only due to poor coverage following cessation of atlas work.
- Tawny Owl** *Strix aluco* Successful breeding noted at Bramingham Wood where two young were fledged, Eaton Bray (two pairs in the village) and Priory CP where a pair hatched two young, one of which survived. Also recorded from Whitehill Wood Luton, Turvey, Bromham, Berry Farm Wood Wootton, Kempston, Sandy, South Mills NR, Willington and Melchbourne Park. One at roost at Whipsnade on 20 August was being mobbed by no less than seventeen Mistle Thrushes. This species is the most nocturnal and therefore most under-recorded owl, and is far more widespread than these records suggest, certainly remaining the most numerous owl in the County.
- Long-eared Owl** *Asio otus* Breeding was proved at a traditional site in the south of the County where a maximum of four juveniles were seen, and at a new site in the west of the County where two juveniles were fledged. This was definitely a new pair as the site had been visited in previous years. A fledged juvenile was also recorded at a site in the east of the County in May. A maximum of four were recorded at a roost in the south of the County in the first winter period, and in the second winter period a well watched individual roosted in birch and later holly outside offices at The Lodge between 27 October and 15 November. Sadly a road casualty was found at Sewell on 20 December and died the next day despite receiving treatment at Whipsnade Zoo. Elsewhere recorded from Chalton SW where pellets were identified, and from South Mills NR.
- Short-eared Owl** *A. flammeus* One remained at Henlow Airfield from 1992 and was recorded regularly from 1 January to 7 April. Elsewhere in the first winter period one at Coronation CIP on 8 January, one at South Mills NR on 19 and 27 January, three near Turvey on 23 February and two on 4 March, one at Rookery CIP on 14 March and one at Eaton Bray on 18 and 19 March. In the second winter period only recorded from Luton Airport on 26 September and Coronation CIP on 21 and 28 November.
- Swift** *Apus apus* The first was at Barley Brow on 21 April, with two at Priory CP on 22 April, and the last were two at Blows Downs on 18 September, with ten at Dunstable SW on 16 September. Maximum numbers recorded were 300 over Dunstable SW on spring passage

in May, with up to 200 there June and July, 200 at Priory CP on 31 May, and 500 at Stewartby CP on 13 June. Southward movement was noted from 3 to 12 August at Priory CP with 175 on the last date, and on 24 July, 7 August and 9 to 14 August at Pegsdon Hills.

Kingfisher *Alcedo atthis* Breeding was proved at Bromham Brook and at South Mills NR, both pairs fledging two broods. Pairs also held territory at East Hyde, the Ouzel WBS at Leighton Buzzard (three pairs), Twin Bridges Blunham, and also recorded in the breeding season at Tiddenfoot, Langford GP, on the Hiz at Arlese, at Stewartby CP, on the Elstow Brook at Willington GP, on the Ouse at Bromham Hall, at Bromham Lake NR and Harrold CP. Birds were recorded in every month at Priory CP, with a total of 158 bird days and a peak of 27 bird days in August, when juvenile birds thought to have been raised just outside the park were present. Display was noted at Dunstable SW in March but birds did not breed and were not seen again until July. Also recorded outside the breeding season from Whipsnade Wild Animal Park (only the fourth site record), Luton Hoo, the Lea in Luton, Bidwell, Grovebury SP, Mentmore Road SP, Woburn, Swiss Garden, Biggleswade Common, Brogborough Lake, Rookery CIP, Stewartby CP, Coronation CIP, Chimney Corner CIP, Kempston, Tempsford and Felmersham NR. One was noted dead, caught in fishing line, near South Mills NR on 5 January.

Wryneck *Jynx torquilla* One at Bushmead, Luton on 19 September was found sunning itself on a hedgerow but was not re-located after being disturbed by a jogger (SW). This record coincided with a large influx on the east coast.

Green Woodpecker *Picus viridis* Breeding was proved at Flitwick Manor, Reddings Wood, South Mills NR and near the Twin Bridges at Blunham, Waterloo Thorns CES, Harrold CP, Mowsbury Hill and Priory CP where the species was recorded on 158 bird days. A juvenile was seen at Galley Hill. Also recorded in the breeding season at Luton Hoo, Barton Hills, Sundon CP, King's Wood Heath and Reach, Stockgrove CP, Aspley Heath, Millbrook Test Track, Maulden Woods, Chicksands Wood, Marston Thrift, Brogborough Lake, Rookery CIP, Stewartby, Coronation CIP, Berry Farm Wood Wootton, Willington GP, Bromham Park, Bromham Lake NR, Felmersham NR, Round Wood, Chellington, Turvey, Great Oaks Wood and Melchbourne Park. Outside the breeding season also at Bramingham Wood, Knocking Hoe, Pegsdon Hills, Whitehill Wood, Houghton Regis ChP, Tiddenfoot, Woburn, Charle Wood, Sandy Mill, Old Warden Tunnel, Ampthill Park, Millbrook CIP, Vicarage Farm CIP, Kempston West End, Tempsford, Great Barford, Radwell GP and Pavenham. Singles at Dunstable SW on 14 April and 30 July where the species is unusual.

Great Spotted Woodpecker *Dendrocopos major* Less widely recorded than Green Woodpecker. This probably does not reflect the true status of the two species, both because this species may be perceived as the more common and is not reported, and Green Woodpecker probably occurs more often in the waterside habitats and large woods which are visited by birdwatchers, with this species more widely distributed, often occurring in small copses and shelter belts which are little covered. The forthcoming BTO Breeding Bird Survey will probably give a more accurate picture for these and other common species. Breeding was proved at Putnoe Wood, an adult was seen carrying food at Waterloo Thorns CES and fledged young were seen at Aspley Heath, Flitwick, Blunham and Bromham Park. Also recorded in the breeding season at Bramingham Wood, King's Wood Heath and Reach, Rushmere, Stockgrove CP, Charle Wood, Cooper's Hill NR, Marston Thrift, Hanger Wood, Stewartby CP, Abbey Park Turvey, Felmersham NR, Carlton, Harrold CP, Round Wood and Priory CP, where the species was recorded less than Green Woodpecker with only 94 bird days in total mainly in the second half of the year. Outside the breeding season also at Bradgers Hill, Blows Downs, Wardown Park Luton, Stopsley, Leagrave Marsh, Galley Hill, Barton Hills, Eaton Bray, Dunstable SW, Grovebury SP, Henlow Airfield, Flitwick Moor, Ampthill Park, Maulden Woods, Old Warden, Sheerhatch Wood, Sandy Mill, The Lodge, Brogborough Lake, Millbrook/Rookery CIP, Marston Moretaine, Coronation CIP, Cople, Willington GP, South Mills NR, Girtford GP, Wyboston GP, Bromham Lake NR, Great Oaks Wood and West Wood.



Green Woodpecker

(Kevin Sharpe)

Lesser Spotted Woodpecker *D. minor* Very few breeding season records. Breeding was proved at Langford GP where three fledged young were seen, and a male was heard on several dates in Blunham between April and July, with the only South Mills NR record, a male on 27 May, perhaps relating to the same bird. Also heard at Old Warden on 10 April, and drumming at Flitwick Moor on 1 May and recorded twice in Flitwick in April, perhaps the same individual. More widely recorded outside the breeding season, from Whipsnade Wild Animal Park, Wardown Park Luton where two were seen together in February, Barton, Steppingley Wood, Maulden Woods, Warren Wood, Southill Lake, Swiss Garden, Shuttleworth, Abbey Park and New Wood Turvey, and Priory CP where the species was recorded more frequently than in most recent years with sightings on ten dates, once each in January and February, and on eight occasions between 9 September and 27 November. This species remains worryingly scarce, though it is easily overlooked and probably under-recorded. It is interesting for example that in 1992 when a pair bred in central Bedford, there was only one record in the whole year from Priory CP, little more than two kilometres away.

Passerines

- Skylark** *Alauda arvensis* The largest flock noted in the first winter period was 35 feeding in a rape field near Bromham on 8 January. Twelve territories were noted from Eaton Bray to the Leighton Buzzard bypass. There were also 12 territories on the Old Warden CBC, which was about the average for the 1981-89 period but a decline from the peak of 20 pairs in 1978. Autumn movements were noted over Dunstable SW and Priory CP where 46 flew south on 16 October. The largest flocks reported in the second winter period were 76 in fields adjacent to Priory CP on 31 October, and 82 on set-aside near Holcott Wood Cranfield on 31 December.
- Sand Martin** *Riparia riparia* The first of the year were two at Priory CP on 20 March. Next day there were seven at Stewartby CP and singles at Brogborough Lake and Dunstable SW. In the breeding season 165 nest holes were counted in the Leighton Buzzard Area and 201 at Willington GP. Late summer roosts were noted at Priory CP where over 200 birds were counted on five dates in August, and the last were two at that site on 1 October.
- Swallow** *Hirundo rustica* The first of the year (or perhaps the last of 1992!) was a single flying south over Biggleswade on the amazing date of 31 January (GG). In March the first were three at Stewartby CP on the 28th, followed by Dunstable SW and Blunham on the 30th, and Chalton SW on the 31st. High counts were 120 at Priory CP on 22 August, with 150 there on the 27th and 350 on 3 September, and still 120 on 27 September, and 100 roosting at South Mills NR on 19 September. The last birds of the year were one at Dunstable SW on 31 October, and a very late bird at Harlington on 17 November, so the species was recorded in every month except February and December!
- House Martin** *Delichon urbica* After one reported on 11 January at Harrold CP (cf. Swallow), the first typical migrant was on the early date of 31 March at Dunstable SW. Late birds were four at Dunstable on 24 October and one at Eaton Bray on 25 October. There has probably been some long term decline in numbers for this species, but there is little hard evidence, and regular counts of breeding colonies would be useful.
- Tree Pipit** *Anthus trivialis* The first of the year was at Pegsdon Hills on 11 April. Spring migrants were noted at South Mills on 25 April, and Whipsnade Wild Animal Park on 11 May, and possibly a migrant was a bird recorded at The Lodge on 16 April only. Singing males were recorded at Pegsdon Hills, Aspley Heath (3), Millbrook (5) and Old Warden. One observer considered that numbers at Aspley Heath had declined from 1992. Autumn migrants were reported at South Mills NR on 16 August, Whipsnade Wild Animal Park on 28 August, and Eaton Bray on 19 September.
- Meadow Pipit** *A. pratensis* Few records were submitted for this species. In the first winter period high counts were 61 at East Hyde 3 January and 50 at Dunstable SW throughout. Spring passage was noted at South Mills NR in late March, and four pairs bred at that site, with breeding reported at ten other sites. Autumn passage was noted in late September and early October, 60 were at Bagden Farm Turvey on 23 September, and 62 passed south over Priory CP the next day.
- Water Pipit** *A. spinoletta* One at Dunstable SW on 19 and 20 October (PT, SW), and another at South Mills NR on 30 November (PRO).
- Yellow Wagtail** *Motacilla flava* The first was on the early date of 21 March at Blows Downs, but spring passage was generally poor. The last of the year was at Rookery CIP on the late date of 10 October. Four, possibly five, males showing characteristics of the continental 'Blue-headed' race were recorded at Dunstable SW, on 13 and 14 April (DG, SW), a different individual on 15 April (SW), on 28 and 29 April (IM) and on 30 July (KO), and also two at South Mills NR, on 27-29 April and 7-13 May (PRO).

- Grey Wagtail** *M. cinerea* Perhaps because it is distinctive, highly visible, and generally considered interesting, this is a well reported species — no fewer than 38 record cards were received for 1993, and it was recorded at 36 sites in the County. Interesting records included one visiting a Bidwell garden on seven occasions, up to five at Dunstable SW in both winter periods and four at Biggleswade on 10 October. There was a slight autumn passage during October. A pair were seen at Broom Mill on 23 May, and pairs bred in the Tiger enclosure at Whipsnade Wild Animal Park (four young), at Turvey Mill, at Bromham Mill (two young), near South Mills NR, and at Duckmill Weir Bedford, where a pair fledged three young only a few hundred metres from the town centre, and very close to a 1992 breeding site for Lesser Spotted Woodpecker. Up to three at Priory CP from late July to October possibly included birds from this site.
- Pied Wagtail** *M. alba* About five pairs bred at Dunstable SW, two pairs on the Ouzel WBS at Leighton Buzzard two pairs at Priory CP and one pair at Luton Sixth Form College. Maximum counts at roost sites were 160 at Priory CP on 9 October, 50 + at Flitwick on 25 August, and 130 at Cranfield on 22 February, with 110 there 23 November. Birds showing characteristics of the continental 'White' race were recorded at Woburn Park on 20 March, at South Mills NR with singles on 21 and 25 April, and two, possibly three, on 12 October, at Flitwick on 11 May, and at Dunstable SW where birds were present from 13 to 20 April, with a maximum of four on the 16th, 2 May, 14 September (two), and 7 and 8 October.
- Wren** *Troglodytes troglodytes* There were 39 pairs on the Old Warden CBC, up from 37 in 1992 and continuing a gradual long term increase, and 46 pairs at Priory CP were also up from 36 in 1991 and 43 in 1992. At South Mills NR there was an excellent breeding season with 41 new birds trapped, and ringing results at Waterloo Thorns CES followed these welcome trends.
- Dunnoch** *Prunella modularis* There were only nine territories at the Old Warden CBC, the lowest since recording began and less than a tenth of the 107 territories at the site in 1975. There was also a decrease at Priory CP with nine territorial males down from 10 to 15 in 1992. On a slightly brighter note, an observer surveying Corn Buntings in TL06Q, the tetrad in which this species was only just recorded during 1992 County Atlas fieldwork, heard a male Dunnoch singing as he got out of his car on his first visit.
- Robin** *Erithacus rubecula* A gradual decline reported at Priory CP but reports from other sites were more encouraging; at the Old Warden CBC site 35 territories was an increase from 1992 bringing the index back on to the 10 year average. At South Mills NR a site best was logged with seven pairs on site.
- Nightingale** *Luscinia megarhynchos* The first returning birds were noted on 15 April, with one at Turvey Abbey and one at Waterloo Thorns. The latter site eventually held five pairs. Song was noted from the Arlesey, Sutton Fen, Old Warden CBC, Coronation CIP, Odell Great Wood, Tiddenfoot SP, Home Wood Northill and in the car park at County Hall Bedford. At Priory CP a singing bird on 29 April was the earliest ever site record, with a second male present on 2 May. There was no repeat of 1992's breeding record at Stopsley, although a passage bird was noted in song at last year's site for two weeks at the end of April. Breeding was recorded at Priory CP for the first time, with the young fledging in June. The last record of the year came on 30 June also at Priory CP.
- Black Redstart** *Phoenicurus ochruros* An excellent spring for this species with 10 different individuals seen on Blows Downs between 17 March and 20 April (RD, TD *et al.*). At Whipsnade Wild Animal Park four birds were seen between 20 March and 13 May with two together on 24–25 March (RMC, CET). Dunstable SW had its first site record on 11 April (PT, BM). Two birds were seen on autumn passage; one at Langford GP on 19 October (MJS) and one at Whipsnade on 21 October (RMC).
- Redstart** *P. phoenicurus* The first record of the year was a male at Priory CP on 2 April. This preceded a good spring passage with birds reported from Luton Hoo, Blows Downs, Houghton Regis ChP, Millbrook Station and Barton Hills. On Blows Downs 12 birds were recorded between 6 April and 24 April, with a maximum of five birds on 10 April. A singing male at Maulden Wood on 11 May could have been a migrant, otherwise breeding season records came from Heydon Hill, Millbrook on 6 June and Wavendon Heath where a pair were considered to have bred. On the return passage birds were seen at Whipsnade Wild

Animal Park on 31 July, South Mills 27 August, Pegsdon Hills 29-30 August, Priory CP 28 August and 4 September. A huge fall of migrants affected the east coast in mid September, this was reflected locally with birds seen at Dunstable SW 18 September, Whipsnade Wild Animal Park 18-19 September, Turvey 19 September, Pegsdon Hills 21 September and Stopsley, Luton 22 September.

Whinchat *Saxicola rubetra* The first records of the year came on 25 April when there was one at Priory CP and another at Dunstable SW, the latter site also logged singles on 5 May and 18-19 May. Blows Downs had a poor spring with the only records coming on 28 April and 5 May. The only other spring records were: one at Coronation CIP on 30 April, one at Houghton Regis ChP on 7 May and a late migrant at Sewell on 29 May. The autumn passage generally involves larger numbers and on Blows Downs five birds were present around the paddocks on 9 and 15 September with a single staying until 24 September. At Dunstable SW two present on 27-28 August were joined by a third on 29th. Other autumn records were: 30 August one at Butterfield Green, Luton, 31 August one at Potsgrove, Priory CP had a single present on 4 September, three on 19th and one on 22 September, a single on Stopsley Common on 11 September, one at Whipsnade Wild Animal Park 18 September and one on Pegsdon Hills 26 September. The final bird of the year was one at Dunstable SW on 29 September to 1 October.

Stonechat *S. torquata* A series of records around Bedford SW between 16 January and 7 March suggest a pair may have wintered in the area. Other birds were reported at Wyboston GP on 6 January, South Mills NR from 29 January to 1 February, one near Kempston 19 February, a pair at Milton Ernest 4 March and a female at Brogborough Lake on 7 March. In autumn birds were noted as follows: 26 September a single on Pegsdon Hills (see again a week later), 29 September a female at Dunstable SW, 12 October a male at Luton Hoo, 17 October a pair at Clifton, 11-13 November a female near Harlington, 7 November a male at Bedford SW and 12 December, a male at Grovebury SP. On Blows Downs the first sighting was 19 September, a bird which was later joined by a second, the pair then stayed on into the New Year. Following 1992 this was another good year for this species, hopefully there is something of a trend emerging and Stonechats may regain some of the lost ground of recent years.

Wheatear *Oenanthe oenanthe* A widespread spring passage began on 12 March when the first bird was seen at Rookery CIP. A sweeping arrival on 20 March produced records from Biggleswade Common, Barton, Dunstable SW and Whipsnade Wild Animal Park (3). On Blows Downs numbers rose to nine on 20 March, the following day the figure rose to 23 birds scattered around the site. Two males at South Mills NR on 24 March were the first in a run which continued till 5 May constituting the best spring for the site to date. The second wave of arrivals, which often includes "Greenland" types, crossed the county from about 20 April, on that date birds were seen at Leighton Buzzard, Harlington and Eversholt (4), numbers rose on Blows Downs from two on 19th to 19 on the 20th — five of which were "Greenlands". The last sighting of the spring passage were: 12 May Dunstable SW and Blows Downs and 16 May Grovebury SP. There were no reports of summering birds this year. The first autumn passage birds were one at Rookery CIP on 17 August and one at the SKF works in Legrave the following day. Migrants were noted widely from 28 August but the only multiple sightings came from Galley Hill with five on 20 September and Blows Downs with two on 21 September. The last sighting of the year was at Rookery CIP on 2 October.

Ring Ouzel *Turdus torquatus* The majority of records came from Blows Downs starting on 19 March when three were present, then intermittently until 2 May. The peak count was five on 14 April with a passage total of 30 bird days for that site. At Houghton Regis ChP singles were seen on 15th, 20th and 21 April. Autumn passage was minimal with the only record being of a single bird on Blows Downs on 15 October.

Blackbird *T. merula* Concerns continue to be expressed for this species. At the Old Warden CBC site the 26 territories which were held was no worse than 1992 but the figure is still the all time low and compares badly with the all time high of 65 territories that were held in 1976. At

Priory CP nine males held territory compared to 18 in 1992, at South Mills numbers improved slightly rising from eight to nine pairs. The CES ringing site at Waterloo Thorns reported an increase in the number of adults caught although the numbers were still only 2/3 of the 1988 figure while the number of juveniles caught was only half of the 1992 figure. A pair with a nearly fledged youngster in the nest in Luton on 8 March must have begun nesting in response to a mild period in February. An influx in October was remarked upon at both South Mills NR and Blows Downs.

Fieldfare *T. pilaris* There were no large flocks noted in either of the winter periods. On 1 February a gathering of 100+ were seen at Battlesden, at the same site on 13 March numbers had increased to 150, also on the 13th over 100 were seen on Pegsdon Hills. A flock of 150 was reported from the CBC site at Old Warden on 10 April. The last spring sighting was at Whipsnade on 25 April. The first returning birds of the autumn were noted on 2 October at Whipsnade with widely spread reports coming over the next fortnight. The largest flocks in the second winter period were 300 at Turvey on 1 November, 250 at Cockayne Hatley on 8 November and 400-500 at Bromham Lake NR/Biddenham Golf Course on 25 November.

Song Thrush *T. philomelos* The population at South Mills NR remained stable at five pairs, the Ivel Ringing Group caught twice as many adults as in 1992 although there were less juveniles caught. At Priory CP the number of territories fell from the 12 recorded in 1992 to eight in 1993. On the Old Warden CBC the numbers dropped to a new low of four pairs compared to the seven recorded in 1992, measure this against the heady days of 1975 when 44 pairs were present on the site and the problems that the species is experiencing become starkly apparent.

Redwing *T. iliacus* Flocks of over 100 were seen at Woburn, Butterfield Green, Turvey, Blows Downs and Bedford in February and March with the last birds seen at Blows Downs on 11 April. Returning migrants were seen at Whipsnade on 18 September with a widespread arrival over the next fortnight, large numbers included 200 on Pegsdon Hills, 120 at Blunham and about 100 reported at Stopley Common, Butterfield Green, Gravenhurst, Turvey, Knocking Hoe and Eaton Bray. The highest count came from Priory CP where 310 were counted leaving a roost on 14 October.

Mistle Thrush *T. viscivorus* At South Mills only one pair bred compared to two in 1992. Elsewhere gatherings were noted with 19 birds together at Henlow on 9 August, 20 birds at Turvey on 7 September and 23 at Luton Hoo on 15 September and 20 there on 21 December. At Knocking Hoe three birds were seen disputing ownership of a Hawthorn bush on 28 October.

Grasshopper Warbler *Locustella naevia* The first of the spring records was on 14 April at Millbrook CIP; subsequent records saw another trapped at South Mills on the 16th, one at Coronation CIP on the 17th and a fourth at Maulden Woods on the 18th. These records fit well with the earliest dates of recent years. There were four singing males and a female at Millbrook Pillinge on 29 April; courtship feeding was also observed. During the breeding season records of single, reeling males were received from Blows Down, Dunstable SW, Bidwell, Sewell and Bradgers Hill in the south of the county, Eversholt, Steppingley Reservoir, the Old Warden CBC, Arlesey, Tiddenfoot Park and Blunham in the main river valleys. The last summer records were at Coronation CIP and Priory CP on 16 and 18 July. Finally there was a very unusual record of a singing bird in an area of *Phragmites* and felled Alders at Flitwick Moor at noon on 6 December (SH); was this of eastern origin?

Sedge Warbler *Acrocephalus schoenobaenus* The first was at Blunham on 8 April, quickly followed by singles at Langford GP and Priory CP on 10 April, the latter site holding five or more birds the next day. Spring passage peaked between 26 April and 13 May (earlier than usual) at South Mills NR, where 9 pairs bred. Other breeding records include 43 territorial males at Priory CP, Grovebury SP (2), Battlesden Lake (2), Sewell Pond (5), Dunstable SW (6+), the Ivel WBS at Blunham (15) and the Ouzel WBS at Leighton Buzzard (12). Combined CES data showed little change but a drop in the number of adults caught may be a reflection of the alacrity with which the species settled down to breed this year. On autumn passage, 117 birds were trapped in July at South Mills, 19 in August and eight in September. A major exodus was noted at Priory CP on 4 August and the last fledgling was caught on 25 August. The final bird was one at this site on 24 September, a typical date.

- Reed Warbler** *A. scirpaceus* The first bird was at Priory CP on the early date of 14 April. The next was not for another ten days, on 24 April at South Mills NR. The main ingress of birds started around 11 May and went on for three weeks. Breeding colonies were located at Priory CP (41 singing males), South Mills (c. 9), Houghton Regis ChP (12), and Battlesden Lake (3), the last two showing a decrease on last year. The combined CES data also pointed to a slight decrease. Other breeding season records of singing males were — East Hyde, Dunstable SW (2), Langford GP (3-5) and Brogborough Lake. The Ivel WBS at Blunham recorded five territories and the Ouzel WBS at Leighton Buzzard one. At South Mills NR 118 birds were ringed during the year, a new high. Autumn passage was strongest in the latter half of August with a few birds lingering well into September until the last at Priory CP on 10 October.
- Dartford Warbler** *Sylvia undata* A male in gardens at Cockayne Hatley late on the afternoon of 21 November was a first for the County (RSKB). It was searched for but not relocated the following morning. This occurrence roughly coincided with other records of the species from sites north and east of the British breeding range.
- Lesser Whitethroat** *S. curruca* The first was at Waterloo Thorns on 12 April; this equals the earliest date (1947). There was a more general influx between 27 April — 5 May, with a marked passage on 29 April. Three pairs held territory on the Old Warden CBC (the first since 1990). Record numbers were trapped by the Ivel Valley Ringing Group and the combined CES index was up 66 percent for juveniles and 11% for adults. Breeding season records were received from very few sites. Autumn passage occurred from 6 August until the end of the month. Late birds were seen at Whipsnade with three on 24 September, and Priory CP (two on the 23rd and one on the 24th) with the final record of a single at Pegsdon Hills on 3 October.
- Whitethroat** *S. communis* The earliest records were singles at East Hyde, Blows Downs and Willington on 10, 14 and 15 April; this is two weeks earlier than recent years. There was a steady influx from 20 April — 3 May, but peak passage at South Mills was deemed to be 3 — 19 May, by which time pairs were nesting at Waterloo Thorns. Numbers on the Old Warden CBC remained low but steady with three pairs. The combined CES index rose 25 percent for adults but fell sharply by 37 percent for juveniles; however, 1992 had been an exceptional year for successful second broods. The Ivel WBS at Blunham reported six pairs and the Ouzel WBS at Leighton Buzzard 14 pairs, up 30 percent. All sites reported increased territories except Priory CP (5 singing males). The last bird of the year was observed at Willington GP on 3 October.
- Garden Warbler** *S. borin* The earliest was on 24 April at Priory CP. This is a more normal date for the species in the county and ten days or so later than the previous two years. Passage continued for another four weeks. The Old Warden CBC held steady at three pairs and there was a marked increase to 24 territorial males at Priory CP. Nesting pairs increased to four at South Mills. The combined CES index rose by 19% for adults and 38% for juveniles even though less juveniles were trapped this year at Waterloo Thorns. Autumn passage peaked on 13 August and was complete by 1 September at Priory CP. The last bird was seen at Dunstable SW on 11 September.
- Blackcap** *S. atricapilla* Three wintering females were seen in the Luton area and another trapped at Houghton Regis at the turn of the year. Single males were recorded from Blunham, Woburn and Flitwick in January, Houghton Regis (trapped), Flitwick and Haynes in February and, finally, on 15 March, Barton-le-Clay. The first genuine migrants were reported on 28 March at Priory CP and Waterloo Thorns (trapped). There was a steady influx from 3 April with good overnight falls on 14-16 April. Nine territories were recorded at Old Warden CBC, three at South Mills and 26 at Priory CP, the latter up seven on last year. The combined CES index varied little from 1992 for both age classes. Three juveniles were trapped at Priory CP on 3 October and one/two were present there until 6 October. No more were recorded there until 30 October, when a male and two female 'continental' birds were trapped. Birds of both sexes were seen at Dunstable Downs and Biggleswade Common during November, at Aspley Guise, Bromham and Kempston in December and in both months at Priory CP, Blunham and Luton. At least 17 birds were involved over the second winter period.



Plate 10: Houghton Regis Chalk Pit, a disused chalk pit that has developed a rich community of wildlife and was designated a Site of Special Scientific Interest in 1988. *Photo: Mary Sheridan*



Plate 11: Tiddenfoot Pit, a flooded sand pit just south of Leighton Buzzard. *Photo: Mary Sheridan*



Plate 12: A standard mist net ride at Waterloo Thorns, near Everton, one of the birdwatchers' Constant Effort Sites (CES).

Photo: Errol Newman



Plate 13: A mist net at Priory Country Park, Bedford, a Constant Effort Site. *Photo: Dave Kramer*

- Wood Warbler** *Phylloscopus sibilatrix* Singing males were seen and heard at Aspley Guise on 8 May (RAN), and at Coopers Hill/Amphthill Park from late afternoon 14 May until 17 May (KO *et al.*). There were no breeding records for the second year running.
- Chiffchaff** *P. collybita* Over-wintering individuals were reported from Amphthill in January, Boughton End 6 February, one trapped at South Mills NR 7 February, and on 11 dates in January/February at Priory CP. Returning migrants occurred from 11 March, starting with one at Priory CP, with two there on the 13th followed by others at South Mills NR, Stewartby, Whipsnade on the 14th and Chicksands Wood on the 15th. The species was widespread by the end of the month. There were two-three breeding pairs at Priory CP, one at South Mills. The Ivel Valley Ringing Group ringed 106 birds in total, a new high, with increases at all sites. The combined CES index gave a large increase in the number of juveniles present. There appeared to be two out-going peaks — one between 4–11 September, the other between 2–11 October. The last *P. c. collybita* (2) at South Mills NR were trapped on 12 October, a typical date. In the second winter period, the first were trapped at the same site on 23 October, and a record from Luton Hoo on 24 October. In the second winter period up to four were present at Priory CP and other sight records came from Tiddenfoot, Biggleswade Common, Harrold CP and Pegsdon Hills, with finally one at Aspley Guise 26 December and one at East Hyde 27 December. From next year, national rarities committees are requesting full details on trapped eastern Chiffchaffs to clarify their status, as many characters of *tristis* can be shown by East European birds (*British Birds* 87 p. 358). The following records were considered by the observers to apply to northern and eastern forms, but have not undergone any formal vetting: a male, *abietinus/tristis* intergrade, '*fulvescens*' trapped at South Mills on 7 February (PRO); a female *abietinus* at Priory CP on 6 March (EN); an *abietinus* at Priory CP on 1 November, a *tristis* on 23 October and an *abietinus* on 6 November at South Mills NR (PRO); a female *abietinus* (trapped) at Priory CP 27 December (EN); two male '*fulvescens*' (trapped) at South Mills on 30 December (PRO).
- Willow Warbler** *P. trochilus* The first record was of two in Maulden Wood on 28 March. Six were trapped (five male, one female) at Priory CP on 3 April. There appeared to be a major influx on 10 April, with *c.* 50 singing males on Blows Downs and widespread records elsewhere, which tailed off over the next three days. Another influx occurred on 15 April. A continuing decline was reported from the Old Warden CBC, where there were six pairs compared to 36 in 1985, and a slight increase at Priory CP (31 singing males). The combined CES index indicated a slight (4%) decline in adults, but an increase (9%) in juveniles overall. Figures for Waterloo Thorns CES are 30% below those of 1988, in line with the national trend. The presence, on 8 August, of one in a central Luton garden agrees closely with the peak exodus which, from ringing data, ceased abruptly on 13 August. A few records were received until the last birds at Dunstable SW 11 September, Whipsnade on the 17th, Priory CP two on the 27th and finally Bromham Lake NR one on the 28th.
- Goldcrest** *Regulus regulus* During the first winter period recorded from Priory CP (up to 4), Barton Hills (8), South Mills (3), Charle Wood, Maulden Woods, Brogborough Lake and a Luton garden. The only breeding season record came from Aspley Heath. The first of the autumn at Priory CP occurred on 10 August, this party of three was the first record for August here. There was a gradual build up of sightings throughout October, the traditional passage period. Several widely scattered records were received until the year end.
- Firecrest** *R. ignicapillus* In spring there was one, probably a female, at Barton Hills on 21 March (MW). In autumn two on typically late dates, a first year female trapped and photographed at South Mills NR on 12 October (PRO), and a male at Tiddenfoot NR on 30 October (MS).
- Spotted Flycatcher** *Muscicapa striata* The first of the year was at Whipsnade Wild Animal Park on 11 May, with the last in autumn at Priory CP on 26 September. Most of the breeding records were from churchyards, interesting exceptions being four pairs at Priory CP and two pairs feeding young in municipal parks in Luton.
- Pied Flycatcher** *Ficedula hypoleuca* The only record was an adult male at Priory CP on 15 April (LRJ, EN).
- Bearded Tit** *Panurus biarmicus* A male at Tiddenfoot on 9 November (RAD, PSm *et al.*)

- Long-tailed Tit** *Aegithalos caudatus* There were eleven territories on the Old Warden CBC, exceeding the previous highest totals in 1990 and 1992. At Waterloo Thorns CES, 12 adults and 11 juveniles were trapped, giving indices of 133 and 242 respectively (1988 = 100). At South Mills NR a total of 92 new individuals were ringed during the year, the highest ever annual total. The largest party reported was 57 at Priory CP on 26 July, part of a mixed tit flock with 52 Blue Tits and several Great Tits and Willow Warblers. This species was also in the top twenty species recorded in the 1993/94 Winter Garden Bird survey, being noted in 57% of participating gardens.
- Marsh Tit** *Parus palustris* Six territories were held at the Old Warden CBC, about the average number. An unusually large party of 15 was recorded at Maulden Woods 21 February.
- Willow Tit** *P. montanus* Reported during the breeding season at Dunstable SW, Maulden Woods, Eggington, near Luton Airport, Whipsnade and Priory CP, and at other times from Hanger Wood Staggsden, Stockgrove CP, Blows Downs, East Hyde, Woburn Park, Caddington and Pegsdon Hills.
- Coal Tit** *P. ater* Seven territories were occupied at the Old Warden CBC, the highest since recording began in 1973, the average being three. This species was also in the top fifteen species recorded in the 1993/94 Winter Garden Bird survey.
- Blue Tit** *P. caeruleus* At the Old Warden CBC, 41 occupied territories was slightly above the recent average of 36. At South Mills NR 92 were trapped, the best ever yearly total, as for Long-tailed Tit. Results from Waterloo Thorns CES showed a reduction in the number of adults caught, with just two, but the total of 28 juveniles was almost double the 1992 figure. This species was in the top four species recorded in the 1993/94 Winter Garden Bird survey, and was noted in 99% of participating gardens.
- Great Tit** *P. major* At the Old Warden CBC, 18 occupied territories was about the recent average. At Waterloo Thorns CES the same number of adults were trapped as in 1992, only a third of the 1988 figure, but juveniles were almost 50% up on 1992. This species was in the top ten species recorded in the 1993/94 Winter Garden Bird survey, and was noted in 94% of participating gardens.
- Nuthatch** *Sitta europaea* Remains widespread in favoured areas, particularly the Greensand Ridge.
- Treecreeper** *Certhia familiaris* Six territories on the Old Warden CBC was about the average.
- Great Grey Shrike** *Lanius excubitor* An adult female at Blunham GP on 4 January, and at South Mills NR on 12 January and 4, 6, 16 and 21 April was typically elusive (PRO, JDS). On 21 April it was seen to mob and chase off the first Cuckoo of the year.
- Jay** *Garrulus glandarius* Evidence of influxes into the County were reported from Maulden Woods in the first winter period, when at least 12 were noted in 90 minutes in January and there was a flock of 23 at the same site on 21 February, and from several other sites in September and October, with five over Blows Downs on 19 September, seven at Millbrook on 2 October, three over Turvey Abbey on the 5th, two parties of three over Priory CP on the 10th, and a minimum of 10 at Luton Hoo on the 24th.
- Magpie** *Pica pica* Seven pairs were mapped on the Old Warden CBC, the highest ever recorded number of breeding pairs on this 200 acre site. A pre-roost gathering of at least 50 was counted on Dunstable Downs on 18 February, and 50-60 were in Houghton Regis ChP on 12 January. This species was in the top fifteen species recorded in the 1993/94 Winter Garden Bird survey.
- Jackdaw** *Corvus monedula* The highest count was a mixed corvid roost of 1000 at Bromham Park on 25 November. A pale bird with coffee brown plumage, presumably leucistic, was noted at Marston Thrift on 3 August.
- Rook** *C. frugilegus* The highest count was c. 600 at Willington GP on 8 August.
- Carrion Crow** *C. corone* Highest total was 91 feeding near Bromham Lake NR on 12 April, and 48 at Priory CP on 1 February was the largest ever gathering at this site. A communal roost of at least 45 individuals was noted at Bedford Cemetery on 25 December.
- Starling** *Sturnus vulgaris* None bred at the Old Warden CBC, after only one pair in 1992. The peak was 42 pairs in 1973 and the habitat of farmland, woodland and farm buildings has remained largely unchanged. It was however in the top five species recorded in the 1993/94 Winter Garden Bird survey and was recorded from 99% of participating gardens. Post breeding flocks were noted at Dunstable SW late May to mid June with 400 present on 11 June, and at South Mills NR with 150 in June.

- House Sparrow** *Passer domesticus* The only record received was for six — ten breeding pairs at South Mills House. Regular records from this site and hopefully a few others would help monitor this still abundant but possibly declining species.
- Tree Sparrow** *P. montanus* Another very poor year. The only breeding records were at Eaton Bray (3-10 pairs), Tilsworth (6-10 pairs), Tilsworth Golf Course (1-2 pairs) and Battlesden (3-5 pairs). Breeding also possibly occurred at Dunstable SW (one pair) and at Sewell where there were 10-15 on 30 June. There was a displaying male at Waterloo Thorns CES on 28 March, the first site record for seven or eight years, and a pair at Galley Hill on 14 March with three there on 23 September, and one was recorded on the Ouzel WBS on 20 April with a party of eight there on 2 May just in Buckinghamshire. Outside the breeding season there were 20+ at Berry Farm Wood Wootton, a maximum of 20 at Boughton End and 20 at Eversholt in February, and eight at Brogborough Lake on 4 January, with one at Steppingley Reservoir in August.
- Chaffinch** *Fingilla coelebs* The Priory CP population was slightly down with 18 singing males, and numbers at South Mills NR were stable with four pairs. Waterloo Thorns CES and Ivel Valley CES results were both up on 1992 for adults but down for juveniles. Autumn passage was noted at Priory CP with 30 west on 3 October, and in winter the largest flocks reported were c. 300 at Eaton Bray in a large mixed finch flock in late November, and c. 150 with Greenfinches at Stewartby on 29 December in 'a good old-fashioned finch flock'.
- Brambling** *F. montifringilla* Little in the way of large numbers reported. In the first winter period two at Swiss Garden 2 January. One over Grovebury SP 27 February, two at Woburn Park 20 March and nine at Maulden Woods 28 March, but a little more evident on spring passage with seven at Battlesden Lake 3 April, a male at Whipsnade Wild Animal Park 13 April, 10+ at King's Wood Heath and Reach on 18 April, and a party of five at Priory CP 15 April, a male and female there on the 17th and the last single males on 18th, 20th and 25th. In autumn the first were four at Pegsdon Hills on 3 October, followed by one over Whipsnade Wild Animal Park on 7 October, one at Priory CP 10 October, with six west there on the 15th and two on the 16th, two more at Pegsdon Hills 17 October, and also reported from Legrave Marsh on that date, and 15 with Chaffinches at East Hyde 31 October followed by seven at Priory CP 4 November. Then a lull before three at South Mills NR 27 November and two in a large finch flock at Eaton Bray 28 November, one with Chaffinches at Whipsnade Wild Animal Park 15 December, three at Amptill Park 18 December, with the largest flock of the year 60-70 there on 25 December, and finally a single at Willington 30 December.
- Greenfinch** *Carduelis chloris* Six males held territory at Priory CP and there were two pairs at South Mills NR, where only one was trapped all year. Results from the CES schemes were very poor with only one juvenile and no adults trapped at Waterloo Thorns CES, and only five of each in the Ivel Valley, though numbers of juveniles there were up on the single trapped in 1992. More encouraging was a flock of c. 150 at Wilstead in January, a maximum of 150 at Priory CP in October, c. 150 with Chaffinches at Stewartby on 29 December, and 500-600 rising to perhaps 1000 in a large mixed finch flock at Eaton Bray in late November, one of which was killed by a Merlin.
- Goldfinch** *C. arduelis* There were 130 on set aside near Priory CP on 31 August, and a maximum of 79 there in February, but elsewhere no party of more than 50 was reported.
- Siskin** *C. spinus* In the first winter period the largest parties were 100+ at Eversholt on 3 January, 102+ at Flitwick Moor on 14 February and three flocks of c. 100, c. 80 and 40-50 there on 28 February, 100 at Aspley Heath on 12 March and 86 at Southill Park on 21 March. Also recorded at Whipsnade Wild Animal Park, Legrave Marsh, Sundon Park, Dunstable, Houghton Regis ChP, Eaton Bray, Flitwick, Maulden Woods, Millbrook Station, Swiss Garden, the Old Warden CBC, Sandy Mill, The Lodge, Bromham and Priory CP, where the last in spring were seven on 20 April. The first in autumn were at Whipsnade Wild Animal Park where two flew over on 15 September and there were four more on 1 October and 40+ on 15 October, and they were recorded at The Lodge from 24 September. Elsewhere there were early October arrivals at Priory CP and Lower Gravenhurst on the 9th, and East Hyde and Harrold CP on the 10th, with 40 at the latter site. There was a widespread arrival on the 17th with birds at Eaton Bray, Woburn Park and Southill Park and an increase to 60 at Priory.

- CP. Others were recorded in October on the Lea in Legrave on the 20th and at Luton Hoo on the 24th, on which date 50+ were at Woburn, whilst there were 70 at Linden Lake Eversholt on the 30th and the East Hyde flock had reached 55 by the 31st. Numbers at Priory CP peaked at 96 on 22 December, and there were 40-50 at Felmersham NR on 5 December. Also recorded in the second winter period at Sherborne Avenue Luton, Butterfield Green, Pegsdon Hills, Dunstable SW, Flitwick Moor, Southill Park, Stewartby, Bromham Mill and South Mills NR, where four on 15 November and 18 December were a site first.
- Linnets** *C. cannabina* There were 300+ at Stewartby CP on 2 January and the large finch flock at Eaton Bray in November included c. 100, but elsewhere no parties larger than 50 were noted. The large flock which had included a few Twite at Willington GP in 1992 did not return, and a noticeable decline was reported at South Mills NR where the maximum number was 15 in July — September.
- Twite** *C. flavirostris* One at Blows Downs on 19 September (MP). This was an interesting find, echoing the reports of large winter flocks of this species on Downland in the 19th century. It is good to see that the spring migration fixation for this site does not apply to all observers.
- Redpoll** *C. flammea* The largest party reported were c. 50 at Flitwick Moor in February. Display was noted in Devon Park Estate in Bedford.
- Crossbill** *Loxia curvirostra* The only records were of a party of five in Maulden Woods on 5 January (KMS), another party of five at The Lodge on 11 November which included at least one male (RDM), and a single over Whipsnade Wild Animal Park calling on 20 November (CET).
- Bullfinch** *Pyrrhula pyrrhula* Numbers of adults trapped at Waterloo Thorns CES and at the Ivel Valley CES sites were up slightly on 1992, but numbers of juveniles were poor with none at all at Waterloo Thorns. Two pairs bred at South Mills NR. A party of 17 at Picts Hill House Turvey on 19 November was notable in these days of declining population for this species.
- Hawfinch** *Coccothraustes coccothraustes* Only three records of single birds throughout the year. A male at Maulden Woods on 30 January (KMS), one in flight at Luton Hoo on 14 February (AJL), and one over the Old Rectory Eversholt on 7 August (PSm). Searched for but not found at traditional sites on the Clay-with-Flints in the south of the County. The situation may not be quite as bad as this very poor showing suggests, since the species can be very elusive, and a new wintering flock was found at Woburn Park early in 1994.
- Yellowhammer** *Emberiza citrinella* Two pairs bred at South Mills NR where a party of 26 on 6 November was an all time site maximum. Fifteen territories on the Ouzel WBS at Leighton Buzzard. Ringing results from Waterloo Thorns CES were down from 1992 and only a fifth of 1988 numbers, and the Ivel Valley CES results for juveniles were also very poor. Largest winter parties noted was 100+ near Coronation CIP on 2 January and 40-50 near Warden Hill on 30 January.
- Reed Bunting** *E. schoeniclus* There were five pairs on the Ivel WBS at Blunham and nine territories on the Ouzel WBS at Leighton Buzzard. Four pairs bred at Dunstable SW and eleven at South Mills NR, where 130 new birds were trapped during the year (the second most frequent species), and one male of the breeding population is known to be at least six years old.
- Corn Bunting** *Miliaria calandra* Breeding records from sites which have been covered in previous years included three territories on the Ouzel WBS at Leighton Buzzard, four or five pairs on Stopsley Common with nine singing males also recorded between there and Warden Hill, 10+ in the 'Biddenham Loop' area and three singing males between Bedford SW and Willington in another traditional area. Though the species is in national decline it appears to be holding its own in the County, and is even capable of colonising new sites as evidenced by a singing male in extensive grassland (an unusual habitat) at Willington GP, and another at Tilsforth in an area in which they were not recorded during Atlas fieldwork. Outside the BTO Survey, large winter parties were recorded at Stopsley Common with 50+ on 1 January, the Ouzel near Leighton Buzzard with c. 80 on 12 February and Langford GP with 64 on 27 February, but the only count for any traditional roost was 30+ at the small Brogborough Lake roost on 14 February.

As indicated above, in 1993 this species was the subject of a BTO survey with the following results:

| Tetrad | Area | Winter | Breeding season visits: | | | |
|--------|-----------------|-------------|-------------------------|---------|-------------|---------|
| | | | 1st - males | - total | 2nd - males | - total |
| SP92V | Totternhoe | 27 | 11 | 11 | 10 | 13 |
| SP92W | Sewell | 85 | 9 | 9 | 11 | 15 |
| SP93N | Aspley Guise | nc | — | 0 | — | 0 |
| SP93P | Holcot | nc | — | 5 | — | 10 |
| SP94R | Cranfield | 0 | — | 0 | 2 | 2 |
| SP94Z | Stagsden | 0 | — | 0 | — | 0 |
| SP95Q | Bromham | 0 | nc | nc | nc | nc |
| TL02C | Houghton Regis | 9 | 1 | 8 | 2 | 6 |
| TL02D | Chalgrave | 3 | 1 | 3 | — | 1 |
| TL04C | Wootton | nc | — | 0 | — | 0 |
| TL04S | Wilstead | nc | 2 | 6 | 3 | 6 |
| TL05I | Milton Ernest | 0 | nc | nc | nc | nc |
| TL05U | Thurleigh | 0 | 2 | 3 | — | 0 |
| TL06Q | Keysoe | at least 22 | 9 | 10 | 10 | 12 |
| TL06S | Pertenhall | 2 | 3 | 3 | 8 | 9 |
| TL13I | Meppershall | at least 5 | 1 | 1 | nc | nc |
| TL13Z | Henlow | 13 | 1 | 1 | 2 | 5 |
| TL14D | Cople | 1 | — | 0 | — | 0 |
| TL14R | Broom | 0 | — | 3 | — | 8 |
| TL15P | Honeydon | 0 | nc | nc | 23 | 26 |
| TL15U | Eaton Socon | 0 | nc | nc | — | 0 |
| TL24B | Biggleswade | 0 | 6 | 9 | 3 | 6 |
| TL24P | Cockayne Hatley | 1 | 4 | 7 | 3 | 5 |

A fascinating set of results which emphasise the extremely patchy distribution of the species, often in apparently similar habitats. This makes it difficult to draw conclusions, though habitat data tends to support the theory that winter stubble is important. Some tetrads were chosen at random and included little or no suitable habitat. The large numbers in some northern 'prairie' tetrads, comparable to or exceeding those in the well known Downland habitat, may surprise observers not familiar with such areas.

MISCELLANEOUS RECORDS

Fulvous Whistling Duck *Dendrocygna bicolor* An individual at Willington GP from 1 to 5 September was an unusual addition to the escaped wildfowl at large in the County.

Black Swan *Cygnus atratus* A single at Rookery CIP 4 May and 3 immatures there 1 and 2 September.

Feral Goose *Anser sp.* In view of the publication of records of feral Muscovy Duck (see below), it should perhaps be noted that a flock of feral farmyard-type geese have been present on the Ouse in Bedford over at least the past fifteen years. They frequently breed successfully, and the total population has risen from about 10-15 birds to about 60-70. It is interesting that whilst the original birds were typical large fat farmyard geese, 'wild bred' individuals in the population tend to be smaller and nearer the body form of Greylag Geese, though still occurring in multiple shades of white and grey.

Bar-headed Goose *Anser indicus* A pinioned bird was released at East Hyde and subsequently taken back into captivity (per PJW). It was present from at least 8 to 17 April. At Rookery CIP records of singles on 23 May and 30 August were presumably of the long standing feral individual which sometimes frequents the Marston vale.

Canada × Greylag Goose *Anser × Branta* A family party of both parents and six fledged juveniles accompanied a flock of Canada Geese at Southill Farm Reservoir on 14 August, and probably the same party were at Willington GP on 15 August, whilst odd singles were reported from Priory CP and clay pits sites during the autumn.

Ruddy Shelduck *Tadorna ferruginea* An adult at Brogborough Lake on 12 October (AW).

- Muscovy Duck** *Cairina scutulata* Following the addition of this species to category D4 of the British List on the basis of a population at Ely, one observer reported a small feral population between Old Warden and Swiss Garden (three birds on 2 January, increasing to six by 30 December), also an odd individual at Willington GP 25 May. Odd feral birds have been present on the Ouse in Bedford for many years, and may even have bred on occasion, but the total population has almost certainly never reached double figures.
- Wood Duck** *Aix sponsa* Odd reports on the Ouse in Bedford of a female between 4 February and 4 April and a male on 28 February, and also a female at Priory CP on 27 March, presumably related to individuals present from previous years. In Biggleswade a pair reported on the Ivel 18 March, and a female 23 October.
- Chiloe Wigeon** *Anas sibilatrix* A pair flying into Dunstable SW on 25 April were thought to originate from Whipsnade Wild Animal Park.
- Speckled Teal** *A. flavirostris* Two records of this interesting South American species which gave the observers more challenge than the typical run of escaped wildfowl, Dunstable SW 25 to 31 March, and Willington GP 11 August. The latter bird was considered to be a male of the southern nominate race *flavirostris*, also known as Chilean Teal.
- Bahama (White-cheeked) Pintail** *A. bahamensis* A single at Rookery CIP 3 to 13 September.
- Hooded Merganser** *Lophodytes cucullatus* A male on the Ivel at Girtford/South Mills from at least 31 August to 11 December. This is a species which has been accepted as a wild vagrant in Britain, but this individual was thought to have come from no further away than the Zwetsloot wildfowl collection at Blunham.
- Golden Pheasant** *Chrysolophus pictus* A male beside Astey Wood on 23 August was so close to Stagsden Bird Gardens that the probability of a local escape must approach certainty.
- Peacock** *Pavo* Again a male seen at Great Oaks Wood, and reported as living ferally and breeding successfully by the local farmer.
- Demoiselle Crane** *Antropoides virgo* One flying around the Stewartby area and later roosting at Rookery CIP on 2 October caused considerable excitement, not least because of the initial possibility of Common Crane, but it was confirmed as this species, and from the state of wing moult believed to be the individual of dubious origin previously at Spurn in Humberside and elsewhere, and subsequently in Essex (PA, RAD, RAN *et al.*). Despite this, there was considerable disappointment when it was not present the next morning.
- Cockatiel** *Nymphicus hollandicus* One at Blunham on 27 April, and presumably the same at Tempsford 29 April.
- Weaver sp.** *Ploceus sp.*, probably **Masked Weaver** *Ploceus intermedius* One in a Harrold garden in late June was initially reported as a Black-headed Bunting *Emberiza melanocephala*, but was videoed and photographed, the photographs surprisingly proving more conclusive in identifying the bird as a weaver, most probably of this species, (Mr. A. Holden per DHB).

CORRECTION TO THE 1991 REPORT

- Water Pipit** *Anthus spinoletta* The bird trapped and ringed at South Mills NR was on 16 February, not 16 May (PRO).

ADDITIONS TO THE 1992 REPORT

- Bewick's Swan** *Cygnus columbianus* A party of eight adults at Rookery CIP on 26 December (RAN).
- Marsh Harrier** *Circus aeruginosus* A female photographed at Thurleigh Airfield on 15 June (PSJ).
- Red-footed Falcon** *Falco vespertinus* A female photographed at Thurleigh Airfield on 13 June 1992 has been accepted by the BBRC and is the first County record (PSJ). It was part of a large national influx.
- Nightjar** *Caprimulgus europaeus* A record of a male heard churring at Pegsdon Hills on the evening of 14 May, the same date as that on which birds returned to Aspley Heath, was omitted from the 1992 report in error. With no other records from this well watched site, this must have been a migrant.

BIRDS NEW TO BEDFORDSHIRE (1993)

Dartford Warbler *Sylvia undata*

Cockayne Hatley, 21st November 1993, R. S. K. & R. M. Buisson

These notes on a Dartford Warbler seen by Roger Buisson in gardens at his home in Cockayne Hatley represent the first record of the species in Bedfordshire. The original notes were made at 16.15 and 16.30 after the first and second sightings of the bird.

“21st November, 1993 Sun set at 16.00 but light still good due to being clear sky to 16.20.

Bird first seen 16.05 in front garden (single bush) of 31 Village Road, noted because of grating call that it repeatedly gave. It flew across the front of 25 Village Road to the *Leylandia* in 23 Village Road where it was observed by RSKB for c. three minutes and by RMB for c. 30 seconds before it moved to the rear of 23 Village Road.

Noted in particular were:

- * regular grating call
- * erect posture when perched, head held high and tail held up at around 45°
- * tail, back, wings and head slaty grey
- * underside, including throat plum/wine red but with pale patch between legs — which were pale in colour.
- * body size slightly larger than Wren but long tail gave it total length of about a Robin (size compared with Robin at later viewing in rear of 25 Village Road)

The bird was identified by RSKB as Dartford Warbler and RMB called to confirm this, which she did.

After this initial view the bird flew to the rear of 23 Village Road and then through to 27-31 Village Road where its movements were traced by its regular calling. Errol Newman (who lives in Gamlingay only a few miles distant) was then phoned to gain confirmation of the sighting.

At 16.20 the bird was re-sighted from the rear of 25 Village Road when it appeared in a deciduous tree in the rear of 23 Village Road for a couple of minutes. The features noted earlier were confirmed. It was when a Robin perched in the same tree that relative size was noted.

The bird then flew into the *Leylandia* hedge at the rear of 25 Village Road where it called a few times before going silent and presumably to roost. EN arrived when it was fairly dark and the bird had fallen silent.

Optics used by RSKB and RMB Leica 8×42 binoculars.

Weather on 21 November predominantly clear, some cloud on southern horizon, cold, c. one cm of lying snow from fall at dawn that day.

Light good at 16.05 (sun set at 16.00) but rapidly failing to poor by 16.30 and non-existent at 16.45.”

The bird was searched for at dawn the following day but was not seen again. Roger Buisson was familiar with Dartford Warbler from a site in Sussex which was recolonised whilst he was living in the area, with two pairs in 1990, and had also seen birds in the New Forest and an ‘out of context’ migrant not dissimilar to this sighting at Dungeness on 23 October 1988. He was familiar with the main confusion species, Marmora’s Warbler from visits to Mallorca and Subalpine Warbler from ringing experience in Spain, Portugal and Senegal. Both are eliminated by the dark red underparts of this bird — Marmora’s Warblers having grey underparts, whilst Subalpine Warbler differs structurally and males having red underparts are not as dark red and also show an obvious pale moustachial stripe.

DAVE BALL

DUNSTABLE SEWAGE TREATMENT WORKS REVIEW OF 1993

by Paul Trodd (BNHS Honorary Warden)

The first full year of bird recording at Dunstable STW, as a Society wardened site, proved to be a resounding success; few other Bedfordshire sites can ever have been subjected to such intense scrutiny from the county's birdwatchers. Visits were made on 322 days during 1993 and there was daily recording from 19 March — 29 November; coverage ranged from a brief 15 minutes by a single observer to a 12 hour day involving some 20 birdwatchers during the busy spring passage period.

Work parties were arranged during the first-winter period in order to shingle-cap the main island on the wader scrape, and also in late summer to cut and stack the lush vegetation which threatened to choke the entire scrape. The old tern raft was reconstructed on number four lagoon, with great success, and a variety of nest boxes were erected around the site. Work was also carried out to screen either side of the hide with fence panels and the hide itself received a coat of preservative. Monies were received from the Society to pay for plastic sheeting, shingle and fence panels which proved vital to the conservation effort.

The main events of the year were the official hide opening ceremony, carried out by Bill Drayton on 19th March, the draining of number four settlement lagoon in the spring which enticed a record number of passage waders to pause a while and the Society open evening which attracted around 80 members on a glorious evening in May.

Records of birds, mammals and dragonflies were submitted to the respective recorders — as for the birds a log was maintained in the hide resulting in a total of 126 species being recorded on, or flying over, the site. Full details are held by the Honorary Warden and the County Bird Recorder and are featured throughout this year's Bird Report, the highlights of which are as follows:

There were four new species for the site, all in the spring period: Little Gull, Black Redstart, Red Kite and an over-flying gaggles of 12 Barnacle Geese. Twenty species of wader were recorded including six Sanderlings, five Bar-tailed Godwits, three Grey Plovers, two Jack Snipes and single Knot and Little Stint. By late afternoon on 12 May number four lagoon was crammed with 51 individual waders of 13 species, including a flock of 21 Ringed Plovers; an evening long to be savoured by those who were present. Several stunning Blue-headed Wagtails were watched at close quarters on the scrape in April while small parties of Black Terns appeared on cue in early May.

A breeding census was carried out for the first time with 21 species proved to have bred including, Common Tern and Ringed Plover as new for the site, Little Ringed Plover, Gadwall, Redshank, Grey Partridge, Meadow Pipit, Yellow Wagtail and Reed Warbler. The autumn wader passage produced a good run of Greenshanks amongst the commoner species and a couple of Kingfishers in late summer obliged the photographers by perching on a contrived "No Fishing" sign in front of the hide. A one-day Water Pipit stayed all too briefly in October, as did a Merlin the following month and the year ended as it had started, quietly, with the usual collection of wildfowl on the lagoons and flooded wader scrape.

Special mention must be given to the Little Ringed Plover, the very essence of birding at Dunstable STW. From the arrival of the first adult on 14 March to the departure of the last juvenile on 26 August this Schedule One species raised about 12 young to flying stage from three pairs (one pair double-brooded), and in the process delighted all who visited the site and watched the unfolding drama from the comfort and vantage of Drayton Hide. This incredible success story did not, of course, happen by chance but by a combination of physical hard work from Society members and a substantial financial input from Anglian Water. It would be churlish of me to single out any one of Anglian Water's staff for special mention as their overall commitment to conservation is without question. However, on behalf of all the permit holders I would like to warmly thank the on-site operational team for their assistance with water control in the wader scrape and a remarkable understanding of the vagaries of a small collection of Bedfordshire's birdwatchers.

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



A work party at Dunstable Sewage Treatment Works March 1993

(Photo: Paul Trodd)

HOBBIES PREYING ON SUMMER CHAFERS

by Anthony H. Chapman

During July and August 1993 the evening flight of numerous Summer Chafer *Amphimallon solstitialis* over a rough pasture field (and adjacent parkland) on the Lower Greensand near Everton, Bedfordshire attracted several Hobbies at once to prey on the beetles. I watched the event on 22 evenings between 23rd July and 5th September and summarise my observations as follows:

The chafers generally began flying over this field and adjacent hedgerow about 10 minutes before sunset, building up in the July dusk to swarms. The first Hobby came on the scene at up to 30 minutes before sunset during July but increasingly later (maximum 17 minutes after sunset) in August. During late July as many as eight Hobbies hunted insects over this field at once, this number then declining during early August. The peak gathering coincided each time with the greatest abundance of chafers, 10–15 minutes after sunset.

The Hobbies hunted by weaving among each other in alternately swift and leisurely flight, snatching the chafers in flight, rapidly removing the elytra and devouring the insect while gliding with intermittent wingflaps. The insect was taken usually in an upward swoop, presumably so as to sight it against the sky. At peak hunting a Hobby would take and devour some two chafers per minute. Later in the season one or more birds hunted by sallying from fence posts to catch the chafers, behaviour that was shared with Kestrels and Little Owls in the same field. Often a male Hobby flew with a beetle in its talons to a nearby wood which was believed to have a nest site, and was presumably feeding young with this prey.

Throughout the period the sky was largely clear, and the weather always dry, after sunset. One to three Hobbies remained to hunt in the twilight as late as 41–47 minutes after sunset.

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THE EFFECT OF INCREASED CORMORANT POPULATION ON FISH STOCKS AT PRIORY COUNTRY PARK DURING THE 1992 — 1993 WINTER by David Kramer

The increase in the numbers of cormorants (*Phalacrocorax carbo*) at Priory Country Park during the last five years has been dramatic. Twelve years ago the status of this species was that of an uncommon, but regular, visitor and passage migrant. In 1982 it was recorded on only 8 occasions, 9 in 1983, 12 in 1984, 14 in 1985, 19 in 1986 and 20 in 1987 and 1988. It was not until 1989 that a marked increase took place. In that year it was recorded on 95 occasions. In 1990 a party of 54, the largest number ever recorded in the park up to that time, was present on 9–10 February and other large numbers were recorded during the first winter period of that year. Fewer were recorded in 1991 but in 1992, after good numbers on spring passage, the wintering population built up to unprecedented levels.

This increase followed the establishment of inland breeding colonies in neighbouring or nearby counties, e.g. Little Paxton in Cambridgeshire and Abberton Reservoir in Essex. The continental race of the cormorant *P. carbo sinensis* has an inland nesting habit and it is known that there has been some ingression by this race at these colonies.

| | Nov | Dec | Jan | Feb | Mar | Apr |
|--------------|-----|-----|-----|-----|-----|-----|
| Bird Days | 179 | 704 | 515 | 270 | 287 | 130 |
| Daily Maxima | 30 | 52 | 56 | 14 | 15 | 13 |

It is not surprising that anglers became very concerned about the effect that the cormorants were having on fish stocks in the lake.

The daily consumption of fish by cormorants varies between 425–700g per day (Cramp *et al.* 1977) and averages between 15–17% of body weight. Assuming that this is so for cormorants at Priory Country Park one can estimate that the total consumption of fish taken by the cormorants during the 1992/93 winter was between 886 kg (1953 lbs) and 1459.5 kg (3217 lbs); or roughly between 1–1.5 tons. These figures are maxima as they assume that each cormorant consumed all of its daily food requirements at Priory Country Park lake.

In order to have some idea as to what proportion of the fish were taken it would be necessary to know the total biomass of fish in the lake.

Without removing and weighing all the fish in the lake it would be impossible to find out. However, at Great Linford (a very similar gravel pit lake in many respects) they did exactly this on two of the lakes. At Great Linford the biomass per hectare was 420 kg/ha on the Main Lake and 355 kg/ha on St Peter's Lake (Giles, 1992).

The area of the main lake at Priory Country Park is 25.6 ha. If the fish crops were similar at Priory Country Park one may expect a total biomass between 10752 kg and 9088 kg.

This would mean that, during the 1992/93 winter, cormorants took 8.2–9.7% of fish stocks at a minimum rate of 425g per day and between 13.6–16% at a maximum rate of 700g per day. This averages out at 11.9% of the fish biomass.

These figures assume that the cormorants acquired all of their daily food consumption at the lake and may therefore be on the high side.

Visual observations usually give a wrong impression of the size of fish eaten by cormorants. Most fish are caught and swallowed under water and it is usually only the larger fish which are awkward to swallow which are brought to the surface and thus seen by observers. It would be interesting to know if cormorants take more of a specific size range — in other words does their predation affect one particular age range or species more than another? If it does, would this affect the number of older fish present in the lake?

By thinning out the population of young fish, further predation (e.g. by pike, terns, kingfishers and herons) would be reduced. Also a point would be reached whereby the amount of energy expended by a cormorant in catching a fish would exceed the energy gained by eating it. At this point it would no longer be worthwhile for cormorants to use the lake for fishing and one would expect to see a decline in cormorant numbers. Reduction in the fish population might result in a change in fishing strategy by cormorants and they might employ communal methods of fishing. A reduction in the population of young fish would also result in more food being available for the remaining fish and thus better quality fish may be recruited into the breeding population.

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THE DECLINE IN BREEDING SUCCESS OF MALLARD (*ANAS PLATYRYNCHOS*) AT PRIORY COUNTRY PARK

by David Kramer

During the early years (1982-85) after the establishment of the lake at Priory Country Park the Mallard was a common breeding bird producing reasonably large broods of which a fairly high proportion were recruited into the breeding population. By 1987 the number of young surviving until August (and therefore probably recruited into the breeding population) had decreased by 60% of the 1983 and 1984 figures. Since 1987 the number of pairs breeding and the number of young hatched has declined further. By 1992 the number of young surviving until August had further declined to 21% of the 1987 figure and 8.3% of that of 1984. This raises the question of what has caused this drastic decline.

It is known that the survival of mallard and tufted ducklings is generally very poor at gravel pit lakes when compared with more natural habitats. One of the major factors affecting the survival of mallard ducklings is predation by mammals such as foxes and mink, both of which have been recorded regularly in the park. Birds such as carrion crows and herons will also take ducklings and the latter species has been recorded doing this within the park. Large pike have been observed taking mallard ducklings on several occasions. One mink even killed an adult female mallard in front of a fisherman (*vide* Priory Country Park Bird Report 1991-1992). However, although predation may be important, other factors may be involved in the determination of annual population density.

| Year | Number of Broods | Number of Young Hatched | Number of Young Recorded Surviving Into August |
|------|------------------|-------------------------|--|
| 1982 | — | | 65 |
| 1983 | — | | 120 |
| 1984 | — | | 120 |
| 1985 | 20 | | — |
| 1987 | — | | 48 |
| 1990 | 12 | | 'low' |
| 1991 | 12 | 58 (4.8) | — |
| 1992 | 10 | 53 (5.3) | — |
| 1993 | 8 | 31 (3.9) | 10 |

Address: 7 Little Headlands, Putnoe, Bedford MK41 8JT

Research by the Game Conservancy and ARC at the ARC Wildfowl Centre at Great Linford has revealed that the fish populations in gravel pit lakes greatly affect the breeding success of mallard and tufted duck (Giles 1992).

Giles, in his excellent review of the research work carried out at Great Linford, points out that adult female mallard require a high protein diet (particularly one rich in invertebrates) in spring to produce good quality yolks and thus young with a better chance of survival. Mallard ducklings require a high protein intake within the first few days of hatching and adult chironomid midges are an important source of protein for both mallard and tufted ducklings during this period. In fact the breeding of mallard appears to be timed to coincide with peak emergence of chironomids. Low availability of chironomid midges will result in low survival of young mallard at an early stage (Giles 1992).

The lakes at Priory Country Park support very high populations of fish, particularly bream, perch and tench. In all three species chironomids form a major part of their diet (Giles op. cit.). Bream rummage through the sediments at the bottom of the lake for chironomid larvae, perch specialise in chironomid pupae and tench feed on a variety of larger invertebrates including a significant proportion of chironomid larvae. Thus a high proportion of midge larvae and pupae are eaten by fish and the adults which would have hatched from them are not available to mallard ducklings during the first few days after hatching.

The reduction by fish in the availability of adult chironomids to ducklings would therefore be an important factor affecting their survival in addition to predation by foxes, mink, herons, crows and pike.

Improved breeding success of mallard could be achieved by removing a significant proportion of the fish. However, coarse fishing is a very popular activity in the park and an important source of income thus any reduction in the fish population would not be acceptable.

One may speculate that during the next few years the population of chironomids and other invertebrates may decrease due to predation by fish. This may bring about a reduction in the fish population and a consequent increase in invertebrates. The survival rate of mallard ducklings would then increase followed by an increase in fish. Other predators (fox, mink, heron, crows and pike) may respond to this.

If the abundance of chironomid larvae or pupae did not decrease then one might expect the fish population to remain constant or further increase. There seems to be competition for a renewable but finite food resource between mallard and fish. Temperature may play a part in determining the abundance of chironomids, the time they hatch and whether they could complete one or two life cycles. In some years low water temperature would result in low abundance of chironomids. If this occurred at the time of egg formation in females, it would result in poor yolk quality. It could also take place at the time when mallard chicks are hatching thus resulting in low duckling survival. Alternatively high water temperatures at these important times would result in high yolk quality and high duckling survival. There may, however, be other factors affecting such a high fish population e.g. disease.

It will be interesting to see whether the fish population and mallard duckling survival is cyclical or whether a constant balance will be achieved.

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BIRD RINGING REPORT 1993

Report of the Co-ordinator

A total of 5106 birds were ringed during 1993, a worthy total and nice to see that it was made up by a number of now active county ringers. The Ivel Ringing Group again formed a large percentage of the totals.

Once again some unusual birds were caught; Teal, Turtle Dove, Long-eared Owl, Redstart and Stonechat.

Recoveries of note were a little thin on the ground this year, the highlights being: the Cormorant which was originally colour ringed at Tenby, Dyfed; the Blackbird, RH75294, ringed in January 1992 at Priory CP and found dead in July 1993 in Sweden; the Lesser Whitethroat ringed at Priory CP in August 1993 and controlled in Belgium in September 1993, moving east across Europe. Lesser Whitethroats migrate east across Europe and then south through the Middle East to Africa, a direct contrast to most of our other summer migrants.

The relationship between UK ringing sites, in this case Bedfordshire and Icklesham in Sussex is also shown up by the number of controls. Icklesham is used by thousands of summer migrants as a stop over before crossing the Channel south on migration.

ACKNOWLEDGEMENTS

My thanks go once again to those ringers who kindly submitted their records and to the efforts they have put in over the year:

P. Cannings, N. Finan, E. Newman, P. Oldfield, J.M. Reed, J. Rimes, P. Wilkinson, R. Wooding

D.S. WOODHEAD

RINGING TOTALS FOR 1993

| | | | | | |
|--------------------------|-----|---------------------|-----|--------------------|------|
| Mute Swan | 52 | House Martin | 60 | Goldcrest | 39 |
| Greylag Goose | 200 | Meadow Pipit | 2 | Firecrest | 1 |
| Canada Goose | 1 | Yellow Wagtail | 1 | Spotted Flycatcher | 1 |
| Teal | 1 | Grey Wagtail | 4 | Long-tailed Tit | 241 |
| Mallard | 5 | Pied Wagtail | 11 | Marsh Tit | 3 |
| Sparrowhawk | 8 | Wren | 176 | Willow Tit | 5 |
| Kestrel | 20 | Dunnock | 181 | Coal Tit | 12 |
| Water Rail | 1 | Robin | 194 | Blue Tit | 471 |
| Moorhen | 3 | Nightingale | 8 | Great Tit | 277 |
| Little Ringed Plover | 1 | Redstart | 1 | Treecreeper | 15 |
| Ringed Plover | 2 | Stonechat | 1 | Jay | 4 |
| Lapwing | 13 | Wheatear | 1 | Magpie | 2 |
| Jack Snipe | 2 | Blackbird | 226 | Starling | 19 |
| Snipe | 15 | Fieldfare | 1 | House Sparrow | 4 |
| Redshank | 2 | Song Thrush | 74 | Chaffinch | 195 |
| Collared Dove | 2 | Redwing | 32 | Greenfinch | 304 |
| Turtle Dove | 1 | Mistle Thrush | 1 | Goldfinch | 22 |
| Cuckoo | 5 | Grasshopper Warbler | 3 | Siskin | 2 |
| Tawny Owl | 1 | Sedge Warbler | 326 | Linnet | 13 |
| Little Owl | 1 | Reed Warbler | 241 | Redpoll | 11 |
| Long-eared Owl | 1 | Lesser Whitethroat | 96 | Bullfinch | 81 |
| Swift | 2 | Whitethroat | 112 | Yellowhammer | 40 |
| Woodpigeon | 3 | Garden Warbler | 147 | Reed Bunting | 388 |
| Kingfisher | 17 | Blackcap | 259 | Corn Bunting | 35 |
| Green Woodpecker | 5 | Chiffchaff | 114 | | |
| Great Spotted Woodpecker | 2 | Willow Warbler | 305 | Total | 5106 |

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) |
|--------------------|-------------|----------|------------------------------|--------------------------------|-----------------|---------------|
| Cormorant | | 1 | 27.07.92 | Tenby, Dyfed | | 298 |
| | | | 14.11.92 | Linford, Bucks. | VV | |
| | | | 18.05.93 | Priory Park | VV | |
| Mute Swan | Z52190 | 1 | 18.08.83 | Abingdon, Oxon | | 78 |
| | | | 04.07.86 | Bedford | VV | |
| | | | 30.10.92 | Cranfield | VB | |
| | 17.01.93 | | Bedford | VV | | |
| | 18.02.93 | | Bromham | VV | | |
| | —, —, 93 | | Kempston | XF | | |
| Z73002 | 1 | 26.08.90 | Stratford on Avon, Warwicks. | | 85 | |
| | | 18.01.92 | Newnham | VV | | |
| Kestrel | ER84847 | 1 | 15.06.93 | Barnsley, Yorks | | 211 |
| | | | 29.10.93 | East Hyde, Beds. | V | |
| Blackbird | RH75294 | 5F | 07.01.92 | Priory CP | | 1117 |
| | | | 26.07.93 | Vaxjo, Kronoberg, Sweden | X | |
| Sedge Warbler | H143316 | 3J | 01.08.91 | Icklesham, Sussex | | 156 |
| | | | 11.04.93 | Priory CP | V=M | |
| | H971138 | 3 | 13.09.92 | Icklesham, Sussex | | |
| | | 27.04.93 | South Mills | V=M | | |
| Lesser Whitethroat | JO30668 | 3 | 28.08.93 | Priory CP | | 384 |
| | | | 18.09.93 | Turnhout, Belgium | V | |
| Garden Warbler | E238223 | 3J | 19.06.88 | Waterloo Thorns | | 157 |
| | | | 19.05.91 | Waterloo Thorns | V=M | |
| | | | 25.05.92 | Waterloo Thorns | V | |
| | | | 17.07.93 | Waterloo Thorns | V | |
| Blackcap | JO30380 | 3J | 16.07.93 | Priory CP | | 4210 |
| | | | 02.09.93 | Icklesham, Sussex | V | |
| Chiffchaff | | 4 | —, 02.91 | Parc du Djoudt, Senegal | | 4210 |
| | | | 10.04.93 | Priory CP | VV | |
| Willow Warbler | 7X4984 | 3 | 15.08.91 | Icklesham, Sussex | | 152 |
| | | | 27.06.93 | Waterloo Thorns | V=M | |

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

FRESHWATER CRAYFISH

Report of the Recorder

This report for 1993 represents the second year of systematic recording of Crayfish, Astacidae species, in the County and reveals that records are proving extremely difficult to obtain. Whether this reflects the fact that Crayfish are scarce in Bedfordshire or simply that the species is elusive and rarely seen, cannot presently be determined; much more work remains to be done.

One contemporary record has been obtained this year and also two historical records. The National Rivers Authority (NRA) has been recording any Astacidae species found during the course of routine fish surveys since 1986 but there were no reports from that source this year.

HISTORICAL RECORDS

Firstly, it is reported that Crayfish were present in the Grand Union Canal in 1963 at a location close to 'The Globe' public house near Linslade. It is already recorded that the native species was present in the canal near Leighton Buzzard some years previously but no records exist for canal sites since that time.

Secondly, Crayfish are reported to have been present in 1964 in a small stream running to the west of Barton and which eventually joins the Ivel Navigation at Shefford.

Both these records would be referable to the native European Crayfish *Austropotamobius pallipes*.

CURRENT RECORD

One Crayfish specimen was taken from the River Ivel at South Mills, Blunham, during 1993. From the description and circumstances we consider it probable that this was the native species rather than an alien but this cannot be confirmed.

A record for the Ivel further upstream at Biggleswade Common (1992) exists and as it is rumoured that Crayfish are present all along this stretch of the river further investigation at this site may yield some positive result.

ACKNOWLEDGEMENTS

Thanks to the following individuals for their information and help:

B. Jones, A. Muir-Howie, A. Peterkin, A. Taylor (NRA), E. Winter.

HARVEY R. WINTER

BUGS (Hemiptera-Heteroptera) Report of the Recorder

The most exciting find occurred at the very end of the season. This was the discovery of a rare shield-bug, *Holcostethus vernalis*, in Rowney Warren at the end of October. It was not a time to be looking for bugs and in fact Rosemary Brind and I were hunting ladybirds when this turned up in Rosemary's net. It has been recorded from about a dozen localities in Britain, mostly single individuals and mostly many years ago — I know of only one other record during the last 30 years. Little is known of its ecology and in the British Red Data Book it is designated Category 3 (Rare).

Another interesting record was also outside the normal fieldwork season. On the 9th February a specimen of *Reduvius personatus* (the 'Masked Assassin-bug') was found in his house at Oakley by Pat Knight. It was a 5th instar nymph which, as is the habit with this large bug (the adult is about 16 mm long), had attached to itself bits of dust and other debris (hence its name). The nymph resembles that of another, smaller, member of the same family, *Coranus subapterus*. The latter is found on heathland and thereby hangs a tale. Some years earlier, on 4th August 1985 another 5th instar nymph of *Reduvius personatus* had been found in the same place by the same person, but when shown it I had concluded that it was a rather grubby specimen of the heathland species, inadvertently imported into the county after a holiday trip. However when the second one turned up, this explanation became totally implausible and I realised the true identity!

A visit to Sundon Quarry on 3rd July 1993 produced several nice records, if not of the quality of the above. *Coriomeris denticulatus* is a largish brown 'near shield-bug' which turns up on sandy verges on the Greensand. On this occasion however it was actually present in considerable numbers in grassland on revegetating gravelly ground (vegetation mainly *Arrhenatherum*, *Medicago* and *Trifolium* spp); there were one or two in my sweep-net after each 10 sq.m sample sweep. Not far away, on Mouse-ear Hawkweed (*Pilosella officinarum*) on exposed chalk in the SW of the quarry, the plant-bug *Hoplomachus thunbergi* was locally quite numerous. This species seems to be extremely local in the county, more so than its host. In the same place I swept a specimen of *Orthocephalus saltator*, another bug I associate with sandy places. Finally, back at the roadside I swept a specimen of the small black shield-bug *Leqnotus limbosus*, yet another bug of sandy places. This was on a hot dusty mixture of ruderal weeds.

Last year I reported the existence of the Scabious bug, *Placochilus seladonicus* (British Red Data Book Category 1) on Pegsdon Hills Nature Reserve. I checked the site again this year on 4th July and found nymphs were fairly common on *Knautia arvensis*, the first few adult males had just matured. As little is known of the bug's ecology it is worth noting that the 4th and 5th instar nymphs were on the leaves and stems of the host plant and in the interstices between sepals and petals.

Finally, it is a number of years since I reported the small water-surface bug *Mesovelia furcata*, which is rarely observed but not uncommon; on 18th August 1993 I saw a few on blanket weed floating in an inlet of the Finger Lakes at Priory Park.

ADDITION TO THE COUNTY LIST

Pentatomidae

Holcostethus vernalis (Wolff) A single specimen was beaten from Larch at the SW corner of Rowney Warren on 31st October 1993. It is likely that this had wandered from deciduous trees and shrubs about 20 m away, these included oak and birch.

B.S.NAU

DRAGONFLIES (Odonata)

Report of the Recorder

The summer of 1993 was probably the poorest for dragonflies for some years. Extended periods of cool, wet weather which developed in May persisted throughout the flight period, reducing the activity of adult dragonflies.

Of particular interest are the number of records coming from ponds, especially newly created ones. David Anderson has made regular observations on the new pond at the front of the Nissan building at Cranfield. Ten species were recorded during the year, including male Banded demoiselles which must have flown across from a nearby stream. Tony Smith has contributed many new records for woodland ponds in the under-recorded north of the county. Paul Oldfield has recorded regularly throughout the year at South Mills ringing station which now has 15 species and Peter Almond's observations at Bromham Lake LNR now bring the number of species present into double figures. John Adams and Dave Parsons continue to monitor their local ponds in the Haynes area. In addition their records for woodland rides, especially those in Chicksands Wood, show how important these areas are for feeding dragonflies.

Mike Williams has been keeping daily records of dragonflies emerging from his garden pond in Barton, which included 16 Common Darters emerging between 26th June and 21st August.

SYSTEMATIC LIST

Zygoptera (Damselflies)

Banded Demoiselle *Calopteryx splendens*

New tetrad records SP92J, SP94F*

Emerald Damselfly *Lestes sponsa*

New tetrad records SP93U, SP94F, TL05F

White-legged Damselfly *Platycnemis pennipes* Paul Madgett reports that it is still present along the R. Ouzel south of Leighton Buzzard. Widespread along the R. Ouse.

Large Red Damselfly *Pyrrosoma nymphula* Individuals started to emerge over the May Day Bank Holiday. At Sundon Springs quarry newly emerged adults were seen on 4th May.

New tetrad records SP94F, SP95FT

Blue-tailed Damselfly *Ischnura elegans*

New tetrad records SP94F

Scarce Blue-tailed Damselfly *Ischnura pumilio* Of the two sites in the county only Sundon Springs quarry was checked during the year. The poor weather conditions meant that adults were less in evidence than in previous years.

The results of an experiment at Sundon to establish generation time in this little known species demonstrated a one year development period. Newly created seepage areas which had been seeded with eggs during 1992 saw the emergence of adults during June (Cham 1993). This one year development time is important for a species which inhabits the transient conditions of a seepage area. The work carried out at Sundon has contributed to an overall conservation plan for this species which is often lost from sites because of a lack of understanding of its habitat requirements (Fox and Cham 1994).

Common Blue Damselfly *Enallagma cyathigerum*

New tetrad records SP94F, TL03IV

Azure Damselfly *Coenagrion puella* At Felmersham N.R. hundreds of individuals were observed sheltering from poor weather on grass stems.

New tetrad records SP94F, TL03I

Red-eyed Damselfly *Erythromma najas*

New tetrad records TL04E

Anisoptera (Dragonflies)

Brown Hawker *Aeshna grandis*

New tetrad records SP94F, SP95M, SP96Q, TL05F

Southern Hawker *Aeshna cyanea*

New tetrad records TL05F, TL13X

Migrant Hawker *Aeshna mixta* Recorded in lower numbers than in previous years probably due to the poor weather in late summer.

Hairy Hawker *Brachytron pratense* A tantalising glimpse of a small hawker by S. Cham at Kempston Church in June may have been this species. *B. pratense* has been on the increase in the last few years and is becoming widespread in Cambridgeshire (VC's 29 and 31). It was recorded in the Lea valley in Essex for the first time last year. Although this observation is unconfirmed it is likely that it will appear in the county if the current expansion continues. It is on the wing for a short period during May and June and due to its small size is unlikely to be confused when seen alongside other hawkers at this time.

Emperor Dragonfly *Anax imperator*

New tetrad records SP93U, SP94F, SP95GU, TL04E, TL05F

Golden-ringed Dragonfly *Cordulegaster boltonii* A single adult was reported along a woodland ride during June. The county does not have suitable habitat for this species which prefers heathland and moorland streams and this observation can be attributed to either a wandering individual or more likely to misidentification

Broad-bodied Chaser *Libellula depressa*

New tetrad records SP95JPR, SP96V

Four-spotted Chaser *Libellula quadrimaculata*

New tetrad records SP95N

Black-tailed Skimmer *Orthetrum cancellatum*

New tetrad records SP94F, TL04EI, TL05F, TL13X

Common Darter *Sympetrum striolatum*

New tetrad records SP94F, SP95M, SP96Q, TL03V, TL05F, TL14I

Ruddy Darter *Sympetrum sanguineum*

New tetrad records SP93U

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ACKNOWLEDGEMENTS

J. Adams, P. Almond, D. and K. Anderson, R. Brind, J. Childs, J. Comont, J. Kemp-Gee, P. Madgett, P. Oldfield, D. Parsons, S. Pittmann, A. Smith, P. Trodd, K. and M. Weedon, M. Williams.

STEPHEN CHAM

BEE TL ES (Coleoptera) Report of the Recorders

Since the present Recorders started their survey of Bedfordshire beetles in 1987, most of the sites studied have been located in the south of the county, with a gradual movement northwards more recently. The exception of this 'southern bias' is the area around Potton, where Ian Woiwod has collected samples for us to examine. Figure 1 shows the tetrads from which we have produced records during the period 1987-1993.

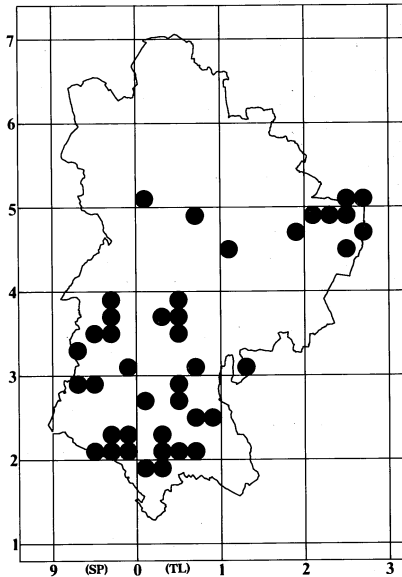


Figure 1 Beetle records 1987-1993

Much of the work carried out during 1992 has been repeated this year; at Flitwick Moor as the second year of the BNHS four year survey, and at Duck End Nature Reserve and Maulden Church Meadow to investigate other areas of the sites. In addition to this, Ian Woiwod has run pitfall traps and a flight interception trap at Cockayne Hatley, Richard Wilson continued to produce material from his pitfall traps on Bradgers Hill, and Tom Thomas passed on beetles from his traps.

As in previous years, some of the beetles in this report are assigned a status (Na, Nb etc.) indicating a degree of scarcity. The recently published review (Hyman and Parsons 1992) provides a more up to date, although still provisional, reassessment of some of the beetle families, and has been followed in this report. For the families not covered by this work, the Invertebrate Site Register (Hyman 1986) has been used.

Flitwick Moor (TL046354) SSSI

The bold lines on Figure 2 indicate the area that has been studied during 1993. In contrast to the part of the site studied last year (Ashby and Powell 1992), much of this year's area was under standing water and therefore inaccessible. Consequently, most samples were taken from areas close to paths, the approximate areas of sampling are shown on Figure 2 as rows of small squares.

Total species in 1993 = 158

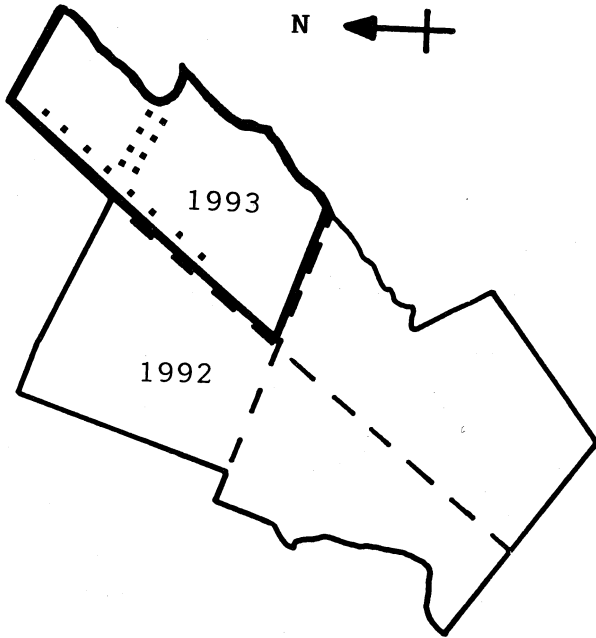


Figure 2 Flitwick Moor Nature Reserve

Species new to Bedfordshire: *Hydaticus seminiger* (Degeer), *Bolitochara obliqua* Erichson, *Erichsonius cinerascens* (Gravenhorst), *Gyrophaena latissima* (Stephens), *Leptusa fumida* Kraatz, *Oxytelus fulvipes* Erichson Nb, *Psylliodes dulcamarae* (Koch), *Tanysphyrus lemnae* (Paykull).

Nationally Notable species: *Acidota cruentata* Mannerheim Nb, *Longitarsus parvulus* (Paykull) Na.

The total number of species recorded from Flitwick Moor in 1992 was 242, a much higher number than the 158 species recorded this year. In part, this is a reflection of the poor accessibility for taking samples that was mentioned earlier. Also, the 1993 part of the site was much more uniform in character, being mostly boggy or wet. Last year's area was more variable, ranging from dry to wet with an associated diversity of flora, which provided a greater variety of habitats for beetles to use. Table 1 compares the number of species caught from both parts, for four of the major groups found at Flitwick Moor. It is readily apparent that in 1993, only the group associated with water show a slight increase in number of species, all of the others show a marked reduction.

Table 1 The number of beetle species in four major groups found at Flitwick Moor

| Group | Typical habitat | No. species found in:— | |
|--|---|------------------------|------|
| | | 1992 | 1993 |
| Ground beetles (Carabidae). | on/in soil | 32 | 16 |
| Water beetles (Dytiscidae, Gyrimidae, Hydrophilidae, Hydraenidae) | on/in water. on/in mud at the edge of water | 10 | 13 |
| Rove Beetles (Staphylinidae) | various — soil, foliage, fungi, etc. | 85 | 59 |
| Weevils (Curculionidae) | on foliage | 23 | 11 |

Of particular interest were two species that the Recorder (JEA) had not seen before. One was the Nationally Notable rove beetle, *Oxytelus fulvipes*, which was recorded from a single specimen caught in a pitfall trap on the 24th April. There appears to be little information on this species in the literature, only that it is rare, and found under dead leaves at the edge of ponds. The second was *Tanysphyrus lemnae*, a small weevil measuring 1.5 — 2 mm in length, found in a pitfall trap on the 30th October. This distinctive species is immediately recognisable by its small claw joints, which are almost concealed by the lobes of the much enlarged third tarsal segment (Figure 3). The beetle feeds on duckweed (*Lemna* sp.) and is therefore normally found close to or on water.

Although only 158 species were recorded from this site in 1993, 56 of these were additional to those recorded from the area studied in 1992. Therefore, the species list from Flitwick Moor for 1992-93 stands at 298.

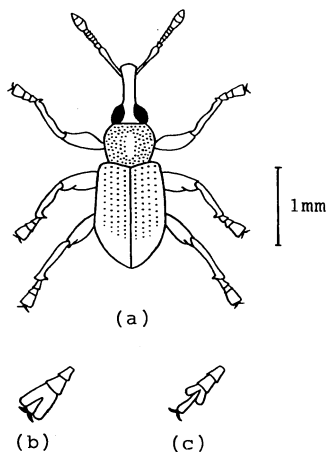


Figure 3 (a) *Tanysphyrus lemnae*.
Enlarged view of tarsus of
(b) *T. lemnae* and (c) a typical weevil

Duck End Nature Reserve, Maulden (TL050375)

Total species in 1993 = 157

Species new to Bedfordshire: *Rhantus grapii* (Gyllenhal), *Enochrus melanocephalus* (Olivier) Nb., *Enochrus quadripunctatus* (Herbst) Nb., *Longitarsus nasturtii* (Fabricius) Nb., *Notaris scirpi* (Fabricius) Nb.

Nationally Notable species: *Cercyon tristis* (Illiger) Nb., *Colon brunneum* (Latreille) Nb., *Colon serripes* Sahlberg Na., *Alcochara ruficornis* Gravenhorst Nb.

ACKNOWLEDGEMENTS

In addition to those already mentioned in this report, we would like to thank the following people:— John Comont (Bedfordshire County Council), Jennie Massey (English Nature), Rosemary Brind, Joan Childs and especially Jonathan Cooter and Michael Cox for expert help with difficult groups.

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J.E. ASHBY.

GRASSHOPPERS AND CRICKETS (Orthoptera) Report of the Recorder

Although I only took over the post of recorder in the last quarter of 1993 I have received records from three people for last year, beside some that I made of my own.

Of the 17 species of Grasshoppers and Crickets recorded in the county of Bedfordshire, there are records for seven species.

Oak Bush-cricket *Meconema thalassinum* There were three records for last year of this species. 8th July at Odell Woods and from Chestnut Hill, Linslade on the 21st and 29th August.

Dark Bush-cricket *Pholidoptera griseoaptera* Recorded on a number of dates in the month of September to October at Priory Country Park and Stewartby Lake.

Lesser Marsh Grasshopper *Chorthippus albomarginatus* Found on the 3rd October on the banks around the lake at Stewartby Country Park.

Field Grasshopper *Chorthippus brunneus* This species was recorded at a number of sites within the county, including Cooper's Hill, Maulden Woods, Flitwick Moor, Willington, Stewartby Country Park and Priory Country Park over a period from late June to October.

Meadow Grasshopper *Chorthippus parallelus* The only record for this species was from Willington Gravel Pits on the 23rd August.

Mottled Grasshopper *Myrmeleotettix maculatus* The only report was on the 3rd July at Cooper's Hill.

Common Green Grasshopper *Omocestus viridulus* On the 3rd July this species was recorded at Cooper's Hill and on the 13th September at Dunstable Downs.

ACKNOWLEDGEMENTS

I would like to thank Mrs M. Sheridan, D. Anderson and E. Newman for their records.

I would also like to point out that there are now record cards available for your records.

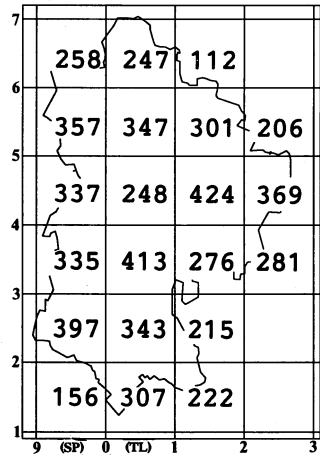
KEVIN SHARPE

MACRO-MOTHS (Lepidoptera)

Report of the Recorder

The weather that was experienced in 1993 was, once again, not very good for moths. Mild winters traditionally mean that a large number of pupae either get eaten by a variety of predators, or they fall victim to disease. As we have had a number of mild winters coupled with poor spring and summer weather, it is not surprising that most of my recorders reported low moth numbers once more. The moth trapping evening at Marston Thrift on the 9th July serves as a typical example. The day had been very wet and although the evening was fine, it was cold with no cloud cover. Despite a walk around a very damp section of Marston Thrift, no moths were observed on the wing, and trapping was abandoned before it was even started.

One species of moth that appeared to be more noticeable was (1991) the Elephant Hawk-moth. Various local newspapers in the south of the County published articles on the abundance of the larvae of this moth, feeding on garden fuchsias. The usual lurid adjectives were used to describe this insect! It is ironic that the fuchsias growing in my garden were all ignored!!



Number of species recorded in each 10km square — as at 31.12.1993

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).

- 1633 **Small Eggar** This moth had not been recorded since 1987, however, A. Smith of Carlton, reported larvae at Yelnow Lane and at Dungee Wood on 13/6/93.
- 1643 **Emperor Moth** Records of this species have been very sparse since 1986. It was not recorded at all in 1988, 92, 93. Is this because the moth has suddenly become uncommon, or does it just reflect a lack of observers?
- 1658 **Oak Lutestring** This species has not been recorded in the County since 1987. This could be because cold damp weather in the early autumn has meant that less moth trapping is being done then.
- 1659 **Yellow Horned** At light from J.B. Barnwell's garden in Aspley Guise, where it is recorded in most years.
- 1731 **Chalk Carpet** This local moth was recorded from Mrs N.H. Browne's Luton garden in 1992. There had been no record of this species in the County since 1987.
- 1771 **Juniper Carpet** Recorded from Mrs N.H. Browne's garden in Luton in 1993, and from Mr and Mrs E. Bowskill's trap in Stotfold, where it has been recorded every year since 1988.

- 1812 **Maple Pug** Five specimens of this moth were recorded at light, by I. Woiwod, from the northern section of Potton Woods, on 4/8/92. One of the moths was a melanic form.
- 1823 **Netted Pug** Recorded from Mrs N.H. Browne's garden in Luton on 5/6/93. This moth had not been recorded in the County since 1985.
- 1827 **Freyers Pug** Recorded every year since 1988 from Mr and Mrs E. Bowskill's trap in Stotfold. This species is under-recorded in Bedfordshire.
- 1830 **Wormwood Pug** One specimen was found alive in Mr and Mrs D. Rand's house in Luton, in mid February 1993. This moth is normally on the wing in June and July.
- 1927 **Brindled Beauty** A common moth, found throughout the County.
- 1952 **Common Heath** This diurnal moth was recorded from Barton and Pegsdon Hills, Sharnbrook Summit and Deepdale, near Sandy.
- 1980 **Eyed Hawk-moth** Recorded from a variety of sites in most years. 1993 was a good year for this very attractive moth.
- 1999 **Lobster Moth** Recorded from J.B. Barnwell's garden in Aspley Guise, and from Mrs N.H. Browne's garden in Luton on 3/7/93.
- 2020 **Figure of Eight** A common moth, found throughout the County.
- 2026 **The Vapourer** A good year for this day flying moth. It was recorded from a variety of sites throughout the County.
- 2167 **Tawny Shears** This species has been recorded from Mr and Mrs E. Bowskill's trap in Stotfold every year since 1987.
- 2205 **Shoulder-striped Wainscot** At light on 25/6/93, in I.Dawson's trap in Tempsford, and from a trap in Whipsnade, run by Miss J. Kemp-Gee. This is not a common Bedfordshire moth.
- 2211 **The Wormwood** Mr and Mrs E. Bowskill found a colony of the larvae of this moth feeding on Wormwood, growing in their garden in Stotfold, in August 1993.
- 2293 **Marbled Beauty** Recorded throughout the County and is quite common in most years. The larvae of this moth feed on various species of lichen growing on walls, rocks, roofs etc. During 1993 they were a common sight on the concrete walls of my garage in Luton.
- 2323 **Reddish Light Arches** This species is normally found on calcareous soil in the south of the County. It was recorded at light from Miss J. Kemp-Gee's trap in Whipsnade, in 1990 and 1992.
- 2349 **Mere Wainscot** An uncommon Bedfordshire moth, recorded in most years from a Rothamsted trap at Cockayne Hatley.
- 2379 **Small Rufous** This species has not been recorded since 1985, when it came to light at Flitwick Moor.
- 2418 **Cream-bordered Green Pea** Two specimens of this uncommon moth were recorded from I. Dawson's trap in Tempsford on 25/6/93.

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V.W. ARNOLD

BUTTERFLIES (Lepidoptera)

Report of the Recorder

Numbers of butterflies fluctuate from one year to another in response to many factors in their environment, such as changing weather patterns, differing levels of attack by parasitoids and predators and natural or man-made alterations to their habitat. Also in any one year one species may be scarce in some sites and abundant in others as can be seen from the comments of observers included below under the individual species. Given this shifting pattern it is not always easy to be sure what the descriptions "normal" or "usual" numbers really mean for a particular site, although individual observers who keep diaries will have a good feel for the "usual". So, in the absence of regular counts, it is difficult to comment county-wide on year-to-year changes in butterfly numbers, apart from reports of extreme abundance or scarcity of particular species. The only such counts in the county are those provided by transect walks that follow the standard procedures (Pollard, 1977; Hall, 1981). Fortunately, more and more transect walks are being set up. The longest running transect is in Potton Wood, monitored by Ian Woiwod since 1976 and part of the national Butterfly Monitoring Scheme. The transect on Barton Hills National Nature Reserve has been walked by Graham Bellamy and his predecessor as Warden for the last 7 years. All the others are on chalk grassland and are co-ordinated by the Beds and Northants Branch of Butterfly Conservation. Of these the transect on Whipsnade Downs has been done for 7 years, those on Dunstable Downs and Sharpenhoe Clappers for 5 years.

The Bedfordshire Chalk Grasslands Butterfly Survey completed its second year in 1993. The main aim of this collaborative Survey is to record the presence or absence of selected "target" species and pinpoint where they have been seen within sites. Management operations that might damage a colony can then be avoided. The mapping is already yielding fascinating insights into the small-scale distribution of several butterfly species, including the Small Blue. Although the Survey protocols do not permit quantitative comparisons to be made, the increased observations of butterflies on the survey sites are providing useful indications of abundance. All references to the Survey and to the Whipsnade Downs transect in the paragraphs that follow relate to the report by Herbert (1994) in which the results were set out in some detail.

General observations

With the notable exception of a few species, such as the Green Hairstreak, White-letter Hairstreak and White Admiral, many species appeared in lower numbers than in 1992. The following general comments were among those received from observers: Luton — "a very poor summer, the buddleia bloomed with hardly a butterfly in sight" (BC); Turvey — "all the species seemed to be well down in numbers" (JM); Carlton and Odell — "a poor year after the excesses of 1992 for many species, particularly the Small Tortoiseshell" (AS). Numbers of both the Holly Blue and Small Tortoiseshell were very low while the Peacock seems to have been relatively scarce in many sites but abundant in both Chicksands and Potton Woods. The total number of butterfly sightings on the Potton Wood transect was 3468 in 1993 compared with 5186 in 1992, 4708 in 1991 and an annual mean of 2735 for the period 1976 — 1992 (IW). The totals for the Barton Hills transect follow a similar pattern, 1622 in 1993, 2812 in 1992 and 2484 in 1991 (GB).

To save repetition comments by named observers on individual species refer in general to areas as follows unless specific localities are mentioned: JA and DP — Chicksands Wood; AD — Westoning; AS — north-west Bedfordshire and BC — Luton.

Skippers

Small Skipper *Thymelicus sylvestris* — "in usual numbers" (JA); "probably down on average" (AS); the smallest number since 1988 were seen on the Potton Wood transect (IW); not distinguished from Essex Skipper in Chalk Grasslands Survey.

Essex Skipper *Thymelicus lineola* — "in usual numbers" (JA); about average on the Potton Wood transect (IW); not distinguished from Small Skipper in Chalk Grasslands Survey.

- Large Skipper** *Ochlodes venata* — “in usual numbers” (JA); “probably down on average” (AS); down to half the number seen in 1992 on the Potton Wood transect and below the 17-year average (IW); seen at 11 out of 23 sites in Chalk Grasslands Survey and about the same numbers as 1992 on the Whipsnade transect but fewer on the Barton Hills transect (GB).
- Dingy Skipper** *Erynnis tages* — seen at 8 out of 23 sites in Chalk Grasslands Survey; not seen on the Whipsnade transect and in only small numbers on the Barton Hills transect (GB).
- Grizzled Skipper** *Pyrgus malvae* — reported as seen at 6 out of 23 sites in Chalk Grasslands Survey but some of these sightings are unconfirmed; slightly more seen than in 1992 on the Whipsnade transect.

Whites

Wood White *Leptidea sinapis* — reported only from the north of the county (AS).

Clouded Yellow *Colias croceus* — one at Shillington on 15 August (GB).

Brimstone *Gonepteryx rhamni* — “above average numbers seen early in the year” (AD); “numbers usual” (JA); average numbers in spring and above average in summer were seen on the Potton Wood transect (IW); “particularly good in August though not in spring” (AS); seen at 18 out of 23 sites in Chalk Grasslands Survey and about the same number seen as in 1992 on the Whipsnade transect but well down in numbers on the Barton Hills transect (GB).

Large White *Pieris brassicae* — “numbers appeared normal” (JA); “not many seen” (AD); “down in numbers” (AS); only one-third of the 1992 numbers were seen on the Potton Wood transect but the numbers were similar to 1991, average for the spring brood and above average in the summer (IW); seen at 20 out of 23 sites in Chalk Grasslands Survey but many fewer than in 1992 on the Whipsnade transect and less than one-fifth of the 1992 numbers on the Barton Hills transect (GB). It must be remembered that 1992 was a year of exceptional abundance which suggested that a large scale immigration had occurred but at the end of 1992 many larvae were parasitised.

Small White *Pieris rapae* — “less than the previous years” (JA); “slightly down” (DP); “had a disastrous year” (SP); “fewer seen than usual” (AD); less than one-quarter of 1992 levels, lowest numbers since 1987 and well below average counts reported from the Potton Wood transect (IW) “down in numbers” (AS); seen at 20 out of 23 sites in Chalk Grasslands Survey but many fewer than in 1992 on the Whipsnade transect and less than one-quarter of the 1992 numbers on the Barton Hills transect (GB).

Green-veined White *Pieris napi* — “a usual distribution” (JA); “down in numbers (AS); below average in the first generation but above average and up to 80% of 1992 levels, higher than 1991, by the second generation on the Potton Wood transect (IW); seen at 14 out of 23 sites in Chalk Grasslands Survey but many fewer than in 1992 on the Whipsnade transect and less than one-quarter of the 1992 numbers on the Barton Hills transect (GB).

Orange Tip *Anthocharis cardamines* — “numbers normal” (JA); “slightly down” (DP); “not so many flying this year and even fewer females” (AD); “up to average” (AS); more than 1992 but only half the 1991 numbers were seen on the Potton Wood transect, below the 17-year average (IW); seen at 15 out of 23 sites in Chalk Grasslands Survey but more than in 1992 on the Whipsnade transect and about the same small numbers as in 1992 on the Barton Hills transect (GB).

Hairstreaks

Green Hairstreak *Callophrys rubi* — seen at 12 out of 23 sites in Chalk Grasslands Survey and four times as common as in 1992 on the Whipsnade transect but present in only small numbers on the Barton Hills transect (GB).

Purple Hairstreak *Quercusia quercus* — “normal numbers” (JA); “down in numbers compared to previous years” in Chicksands Wood but with a long flight period from 27 June to 1 September (DP); more seen in Studham than in recent years (CB).

White-letter Hairstreak *Satyrrium w-album* — “increase in numbers in Chicksands Wood — can now be seen in every sunny ride” (JA); first seen there on 23 June (SP) and on the wing until 19 August with particularly large numbers on 4 July and 2 August (DP); a number of individuals were caught by crab spiders while feeding on the flowers of Creeping Thistle, *Cirsium arvense*

(JA); one seen in Potton Wood, only the third record there in 18 years (IW); seven seen on one day in Tempsford (TN), one near Carlton (AS) and several during a BNHS field meeting in Marston Thrift.

Black Hairstreak *Satyrrium pruni* — a few reported from Marston Thrift (AB,JC).

Coppers, Blues and Metalmarks

Small Copper *Lycaena phlaeas* — “lower numbers — poor year” (JA); none seen (AS); “same as 1992 but down on 1989, 1990, 1991” in Potton Wood but always in relatively low numbers there (IW); seen at 7 out of 23 sites in Chalk Grasslands Survey but fewer seen than in 1992 on the Whipsnade transect; not seen on the Barton Hills transect but recorded only in very small numbers there in previous years (GB).

Small Blue *Cupido minimus* — seen at 10 out of 23 sites in Chalk Grasslands Survey; very few seen in 1992 and 1993 on the Whipsnade transect, but present in good numbers on Bradgers Hill and in small colonies along the western edge of Galley and Warden Hills (TT).

Brown Argus *Aricia agestis* — seen at 8 out of 23 sites in Chalk Grasslands Survey and fewer seen than in 1992 on the Whipsnade transect and less than one-fifth of the 1992 numbers on the Barton Hills transect (GB).

Common Blue *Polyommatus icarus* — “numbers down on previous year” (JA); “100s” at two sites in the north west of the county on 6 June (AS); 13% of 1992 level on the Potton Wood transect (IW); seen at 19 out of 23 sites in Chalk Grasslands Survey though slightly fewer seen than in 1992 on the Whipsnade transect and about half of the 1992 numbers on the Barton Hills transect (GB).

Chalkhill Blue *Lysandra coridon* — “numbers normal” (JA); seen at 12 out of 23 sites in Chalk Grasslands Survey and slightly more seen than in 1992 on the Whipsnade transect; numbers were more than twice those in 1992 on the Barton Hills transect (GB).

Holly Blue *Celastrina argiolus* — “still very low in numbers” (JA); “despite looking in all the places they occurred in 1992, I didn’t see a single Holly Blue in 1993” (JM); two at Stotfold (EB); singles in Carlton (AS), Biggleswade (RR) and Haynes (DP); a few in the Aspley Guise area (JB); none recorded in Potton Wood for the first time since 1988 (IW); seen at only 1 out of 23 sites in Chalk Grasslands Survey.

Duke of Burgundy *Hamearis lucina* — seen at 4 out of 23 sites in Chalk Grasslands Survey and fewer than in 1992 on the Whipsnade transect.

Nymphalids

White Admiral *Ladoga camilla* — “a very significant increase in numbers at Chicksands Wood” (JA); “did very well in Chicksands Wood” with 17 seen on 3 July (SP); and there were new records elsewhere in the county, e.g. Turvey (JM); in West Wood “13 insects were counted on 10 July and 3 August. Because of recent clearance of understorey the adjacent Sheeprack Wood had none.” (AS).

Red Admiral *Vanessa atalanta* — “normal numbers” (JA); “usual numbers” (DP); “slightly fewer than usual but a few newly emerged individuals seen in late September for a few days before the weather deteriorated” (AD); “widespread and in average numbers” (AS); 60% of the 1992 level but still 50% higher than the 17-year average on the Potton Wood transect (IW); seen at 13 out of 23 sites in Chalk Grasslands Survey but slightly fewer than in 1992 on the Whipsnade transect and just over one-quarter of the 1992 numbers on the Barton Hills transect (GB).

Painted Lady *Cynthia cardui* — “none seen” (JA and DP); one in Turvey on 28 August (JM); “only two were seen” in the north of the county (AS); none recorded in Potton Wood for the first time since 1984 (IW); seen at only 1 out of 23 sites in Chalk Grasslands Survey and none seen in 1993 on the Whipsnade and Barton Hills transects.

Small Tortoiseshell *Aglais urticae* — “still very low in numbers” (JA); “thin on the ground” (BC); a few in spring but very few in autumn (DP); “average numbers were seen in the early part of the year. Very few later in the season” (AD); “the worst year since I started recording in 1979. Not until September were more than the odd one seen in any one small area” (AS); at the lowest level in Potton Wood since 1983 and only one-seventh of the average numbers (IW); seen at 16 out of 23 sites in Chalk Grasslands Survey but declined to less than 7% of 1992

numbers on the Whipsnade transect and less than one-fifth of the 1992 numbers on the Barton Hills transect (GB).

Peacock *Inachis io* — Hibernating Peacocks were found during surveys of ice-houses for bats (JC); in Chicksands Wood “very large numbers — had a good year” (JA); “thin on the ground” (BC); “usual numbers” (DP); “fewer than usual this year despite a lot of eggs and caterpillars on stinging nettle in the latter part of 1992” (AD); in Potton Wood “a very good year indeed” with the highest numbers in spring and summer since recording began, 3-times the average, and 1093 individuals seen on the transect compared with the previous high of 697 in 1984 (IW); seen at 20 out of 23 sites in Chalk Grasslands Survey but fewer than in 1992 on the Whipsnade and Barton Hills transects.

Comma *Polygonia c-album* — “usual numbers” (JA and DP); “just two individuals seen, usually this is quite common” (AD); “widespread and in average numbers” (AS); fewer than 1992 were seen on the Potton Wood transect but the numbers were similar to 1991 and almost identical to the 17-year average (IW); seen at 5 out of 23 sites in Chalk Grasslands Survey and only one seen on the Whipsnade transect; less than one-tenth of the 1992 numbers on the Barton Hills transect (GB).

Dark Green Fritillary *Argynnis aglaja* — Two were seen on 27 June and one on 1 July at Bison Hill. As these were near the road it is possible that they were released. Two possible sightings were also reported from Bradgers Hill, Luton on 25 June and 2 July again near the road.

Browns

Speckled Wood *Pararge aegeria* — “usual large population” (JA); “only a small number seen on a few good days” (AD); “after a slow start were found in fair numbers during August” (AS); “a species that has colonised Potton Wood in a big way since about 1986.” The first reduction in population since then was seen in 1993, the numbers being about half those in 1992 but it is still common (IW); seen at 17 out of 23 sites in Chalk Grasslands Survey but fewer than in 1992 on the Whipsnade and Barton Hills transects.

Wall Brown *Lasionmata megera* — “numbers slightly down on last year” (JA); “just about normal numbers were seen but for a very short period” (AD); “seen more often but widespread in singles” (AS); similar to 1992 levels in Potton Wood but still one-third of the 1991 population (IW); seen at 14 out of 23 sites in Chalk Grasslands Survey and the same number as in 1992 on the Whipsnade transect.

Marbled White *Melanargia galathea* — appears to be expanding its range (JA); large numbers flying in two sites in the north of the county (AS); seen at 13 out of 23 sites in Chalk Grasslands Survey but many fewer than in 1992 on the Whipsnade transect.

Gatekeeper *Pyronia tithonus* — “usual large numbers” (JA); “nowhere near as common as last year” (AD); “seemed to prosper after a dismal number of years” (AS); in Potton Wood numbers were about half those in 1992 and one-quarter of the 1991 numbers, well below the average (IW); seen at 18 out of 23 sites in Chalk Grasslands Survey but fewer than in 1992 on the Whipsnade transect; slightly more were seen on the Barton Hills transect than in 1992 (GB).

Meadow Brown *Maniola jurtina* — “usual large numbers” (JA); “not so common as last year” (AD); half of the 1992 and 1991 levels, just below the 17-year average, on the Potton Wood transect (IW); seen at 19 out of 23 sites in Chalk Grasslands Survey but fewer than in 1992 on the Whipsnade transect; in contrast to the previous species only just over one-half of the 1992 numbers were seen on the Barton Hills transect (GB).

Small Heath *Coenonympha pamphilus* — “numbers lower in its chalkland areas” (JA); “few as usual” (AS); for the first time since 1989, this species was not seen in Potton Wood where it is always in low numbers (IW); seen at 19 out of 23 sites in Chalk Grasslands Survey but fewer than in 1992 on the Whipsnade transect; only about two-thirds of the 1992 numbers were seen on the Barton Hills transect (GB).

Ringlet *Aphantopus hyperantus* — “numbers slightly down on last year” (JA); “not so many seen this year as previously” (AD); “widespread but somewhat down in numbers” (AS); about half the 1992 level, very similar to average numbers, on the Potton Wood transect (IW); seen at 15 out of 23 sites in Chalk Grasslands Survey but fewer than in 1992 on the Whipsnade transect; only just over one-half of the 1992 numbers were seen on the Barton Hills transect (GB).

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CHARLES BAKER

MICRO-MOTHS (Lepidoptera) Report of the Recorder

My report for 1993 includes the recording of three species new to the county list. From May until November I was unable to do any fieldwork because of problems with my eyesight. I have, since November, examined the moths obtained from the Rothamsted Insect Survey trap at Cockayne Hatley during the year.

ADDITIONS TO THE BEDFORDSHIRE LIST

Coleophoridae

Coleophora juncicolella Stt. — a small number of larval cases were obtained by sweeping amongst heather at Cooper's Hill, Ampthill, TL 03I (3 April).

Momphidae

Mompha miscella (D. & S.) — the national distribution lists held by A.M. Emmet include this species recorded in the county by R.W.J. Uffen. I have no date or locality for this record.

Tortricidae

Eucosma pauperana (Dup.) — RIS trap at Cockayne Hatley, TL 24P (April).

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D.V. MANNING

LACEWINGS Report of the Recorder

The lacewing meeting at Odell Great Wood in August 1993 was from the point of view of lacewing records a washout! Only two species were seen apart from three larvae which have not yet been named. Fortunately the meeting billed for 'lacewings and other insects' did produce a good many other insects and was enjoyed by all.

Coniopteryx sp. Luton General Cemetery, on ash, 28.viii.1993, B. Verdcourt & B. Rands (all specimens were female which cannot at present be identified with certainty).

Micromus variegatus (Fabr.). Odell Great Wood, low vegetation of Yelnow Lane, 7.viii.1993, B.S. Nau, Beds. Nat. Hist. Soc. Meeting.

Hemerobius stigma Steph. Shire Oak Heath, SP 916285, 26.ix.1993, B.S. Nau.

H. micans Oliv. With last.

Wesmaelius betulinus (Ström). With last.

Chrysoperla carnea (Steph.) Odell Great Wood, 7.viii.1993, common, Beds. Nat. Hist. Soc. Meeting; Luton, Wychwood Ave., 4.x.1993, B. Rands; Luton General Cemetery, 28.viii.1993, B. Verdcourt & B. Rands.

Chrysopa perla (L.). Sundon Dump, 1993, B.S. Nau; incidentally an early record of this species is from Flitwick Moor, 6.vi.1943, B. Verdcourt; this species is instantly recognisable by its bluish green colour with black marks on the head and body and some wing veins black.

Sisyra fuscata Clifton gravel pits by R. Ivel, at edge of large pit by track TL182394, 21.vii.1992, J. Bratton; beside R. Ivel near Broom TL185436, 21.vii.1992, J. Bratton; downstream of Bedford Water Works, R. Ouse TL034511, 27.vii.1993, J. Bratton; to my knowledge *Sisyra fuscata* has not been recorded in the county before. The larva is parasitic on freshwater sponges.

The following Psocoptera may also be recorded; all are common species but I do not think I have seen them in the county before.

Caecilius flavidus (Steph.). Maulden Wood lay-by, on oak, 7.viii.1993, B. Verdcourt; Luton General Cemetery, 28.viii.1993, specimen with venation differing on one side from the other, B. Verdcourt & B. Rands.

Graphopsocus cruciatus (L.). Luton General Cemetery, on ash, 28.viii.1993, B. Verdcourt & B. Rands; Luton, Winsdon Hill, on hawthorn, 28.viii.1993, B. Verdcourt & B. Rands.

Elipsocus hyalinus (Steph.). Luton General Cemetery, 28.viii.1993, B. Verdcourt & B. Rands; Odell Great Wood, 7.viii.1993, B. Verdcourt.

Elipsocus ymclachlani Kimmins. Luton, Winsdon Hill, on hawthorn, 28.viii.1993, one specimen has one hindwing doubled and 'bag-like' as if the faces had separated, B. Verdcourt & B. Rands.

B. VERDCOURT



Plate 14: The Median Wasp, *Dolichovespula media*, was first recorded in the county in 1990.
Top left: nest from the Moat, Dunton Lane, Biggleswade, October 1991. The nest has been carefully opened to show the internal structure
Top right: the face of a worker wasp
Bottom: a worker wasp feeding on Berberis flowers

Photos: Richard Revels



Plate 15: Kings Wood, Heath and Reach SSSI, 11 June 1994. The woodland lies on Boulder Clay in the south passing to Lower Greensand in the north, resulting in a variety of rich habitats. Parts of the wood were designated National Nature Reserve in 1993.

Top: following ride management in the clay area

Bottom: open oak woodland with a ground flora of bracken in the sandy area *Photos: Bernard Nau*

CHANGES IN SOCIAL WASPS (VESPIDAE) IN BEDFORDSHIRE by R.A. Brind

Many species of bees and wasps have declined in numbers, but this article looks at two species of social wasps that are on the increase. Over the last few years the Hornet has been seen more widely both in the county and nationally and we also have two new species of social wasps added to the British list, one of which has spread across southern Britain in the last few years.

British species of social wasp

The social wasp fauna of Britain has increased by two species in the last 15 years with the spread of the Median Wasp, *Dolichovespula media*, and Saxon Wasp, *D. saxonica*, from continental Europe. This brings the British total to eight species.

There are four species that nest in dark places; cavities in the ground, in attics, sheds, hollow trees etc. The Hornet, *Vespa crabro*, is our largest social wasp and occurs in southern Britain. The Common Wasp, *Vespa vulgaris*, and German Wasp, *V. germanica*, are widespread and the commonest wasps in our gardens. The Red Wasp, *V. rufa*, is widespread but not always common.

The remaining four species generally build aerial nests; in trees, bushes, under eaves etc. The Tree Wasp, *Dolichovespula sylvestris*, is scattered throughout the British Isles but is mainly a southern species. The Norwegian Wasp, *D. norvegica*, is also found across Britain but is most abundant in the south-west and northern England, and in Scotland. The new wasp, *D. media*, was first recorded from East Sussex in 1980 and has now spread to many southern and Midland counties; it was first seen in Bedfordshire in 1990. *D. saxonica* was first recorded from Juniper Hall Field Centre, Surrey in 1987, and is now also known from Norfolk, East and West Sussex and Hampshire.

All of these species, with the exception of *D. saxonica*, have been recorded in Bedfordshire and their known distribution in the County was described by Chambers (1985).

A brief summary of the annual cycle of the social wasps will hopefully put some of the records listed into context. Queen wasps emerge from their winter sleep in the spring and begin building a small nest in which they lay a few eggs and rear the first grubs which emerge as worker wasps. The workers then begin to take on the remainder of the nest building and food collection, leaving the queen to concentrate on egg laying. Wasps are extremely good architects and builders, especially when you consider that many nests are built under ground in the dark. Using their jaws wasps shave off thin shreds of wood from sound or rotting timber and carry them back to the nest. They chew the wood, mix it with saliva and spread out the wood pulp to dry into 'wasp paper'. Inside the nest are several horizontal combs, joined by strong paper columns. The combs are made of paper cells, in which the eggs are laid and the grubs develop. The grubs are fed on insects that firstly the queen and later on the workers have caught and killed, or some other dead meat. Adults receive some nourishment from this food, but mainly feed on tree sap, honeydew, nectar and rotten fruit. In general the queens fly from April to June, workers from July to October and the males and new queens in September. The mated queens usually overwinter under tree bark or in cavities, but, as with the nesting site, will make use of houses and sheds. Only a few of the overwintering queens survive the winter.

The Hornet *Vespa crabro*

In 1949 Chambers referred to the Hornet as "Rare and uncertain in appearance". In the previous 15 years of collecting he had taken only a single hornet, at Kings Wood in 1945. He noted two other records: Flitwick in 1945 and nests in willows by the River Ouse at Kempston (Chambers 1949). In a further summary report (Chambers 1985) he noted records up to 1960 in SP92, SP93 and TL25 and records between 1960 and 1983 only from TL13 and TL14. Apart from Chambers published reports which give only the 10Km square reference, the first specific record for the last quarter of the century is from Clayhill Farm, Westoning (TL0432), when a single male was found in the farmhouse on 3rd October 1976.

Address: Bedford Museum, Castle Lane, Bedford MK40 3XD

Hornets are the largest of the social wasps and usually make their nest each year in a hollow dead tree. However, as you will see, a roof space or garage which is dark and protected from the weather may also be used, as well as a bird box and a 'high seat'. An old nest is never reused, the queens begin building a new one each year, although a good site is likely to be used again.

By comparing the map of woodland in the county with recent records it can be seen that most hornets have been recorded in areas of larger woodland and old parkland. It is difficult to tell whether the hornets have been increasing or simply that people are now noting down the records. It is perhaps a mixture of both in that hornets have maintained a population in their woodland stronghold and are now spreading out into other areas. One correspondent who has worked at the RSPB headquarters in The Lodge, Sandy since 1970 reports that he has seen, or heard of, hornets there in most of the last 20 years, with 2 or 3 on some occasions, and that there have been many indoors records. Ian Woiwod, however, who has recorded regularly in Potton Wood for 17 years has only recorded hornets in the wood in the last two years.

During the 1980s all of the recorded sightings were from the centre and south of the county, although this may be due to lack of recording in the north rather than a lack of hornets. Records cover five 10km squares: SP93, TL01, TL03, TL11 and TL14.

- SP9333 Adult flying along hedgerow near Horsemoor Farm 28 September 1986
TL0017 Nest in wooden shed in Whipsnade Zoo, August 1984
TL0338 Adult near junction of A6 and A507, 17 September 1985
TL03X Feeding on apples in Wrest Park, 30 September 1985
TL0637 Dead hornet at Green End, Maulden, June 1986
TL0638 Round House, Maulden Wood, June 1986
TL0639 Wood shed in Limbersey Lane, Maulden, June 1986
TL0738 In Warden's garden, Maulden Wood, 14 June 1986
TL1118 Adults attracted to moth traps in Luton Hoo; one on 10 September 1983 and 29 September 1984; two on 24 July 1985
TL1444 Female at Swiss Cottage, Old Warden, 25 October 1985; several others seen around street lights in village.
TL1545 Nest in gable end of house at Ickwell Green, 1989, the nest remaining active until the end of October.
TL1943 Adults seen in groups of 50-100 over trees lining the playing fields in Biggleswade, July 1989.

During the first three years of the 1990s hornets have been seen in eight 10km squares: SP95, TL02, TL11, TL12, TL13, TL14, TL24, TL25

- SP9258 Nest built in a 'high seat' in Park Wood, near Harrold in 1992. There were possibly three nests in the neighbourhood in 1993.
SP9358 Adult seen in Harrold Park Wood, 9 June 1993
SP9658 Adults seen in Odell Great Wood on 7th and 25th August 1993 and 8 June 1994
SP9658 Adult in Great Hayes Wood on 5 July 1994
SP9559 or SP9659 Adult seen in Odell Great Wood on a BNHS field trip on 7th August 1993.
TL072283 Nest in an outbuilding roof at Streatley Hall, Streatley in 1991.
TL0829 Nest in an old woodpecker hole in a dead elm at Barton Hills, 1990. Hornets also seen as singletons on Barton Hills in May, June and July 1991.
TL0922 Nest in shrub in Luton, August 1993.
TL1024 Nest in tree in Luton, August 1993.
TL1117 Nest in a bird box at Luton Hoo, 1992. Adults were seen foraging in the garden taking butterflies and bees from the buddleia.
TL1437 Two feeding on apple pulp on compost heap in Meppershall, 26 August 1993.
TL1141 Hornets in garage near Rowney Warren, July 1992.
TL1149 There are few records of people being stung by hornets. However, one sleepy queen disturbed during hibernation in a Christmas decorations box in a loft vented its feeling on its disturber, Willington 1992.

- TL1344 Adult seen near Mount Pleasant House, Old Warden, 3 July 1993.
 TL1442 Adult on ivy flowers at Southill Church, 11 October 1990.
 TL1545 Queen noted in the garden at Ickwell Green on 17 October 1990 and a worker on ivy flowers on 26th September 1990 and again in 1991. Nancy Dawson made a number of observations of hornets in her garden during 1993: there were several queens in late May and early June and also two dead in the house in May and July; hornets were observed inspecting the bee hives in June (workers will take honeybee workers from hive entrances and enter hives to feed on honey), feeding on *Cotoneaster* flowers in June and also inspecting a large bush (*Photinia davidii*) that was covered in nectaring insects in September and October.
 TL1847 Two or three at a time regularly patrolling a line of Golden Rod preying on various flies, and bees, The Lodge, Sandy, 1992.
 TL2549 Individuals at South Lodge, Cockayne Hatley on 2nd, 15th and 30th May 1994, with two on 31st May seen gathering wood for nesting material from shed and fence.
 TL2550 Individuals at Potton Wood on 4th and 11th September 1993 and on 30 April, 23 June and 9 July 1994.

The Median Wasp *Dolichovespula media*

First recorded in East Sussex in 1980 *D. media* has, in recent years, spread rapidly. It now occurs in many southern counties and has also reached the Midlands and the south-west (Else 1992, 1993). The nest is very visible and some worker wasps are much blacker in colour compared to our common wasp species, attracting the attention of many observers. It was first recorded in Bedfordshire in 1990 and has rapidly become a very obvious addition to our local fauna, attracting attention in the press.

The colour of the wasps even within a single colony is quite variable, but they generally appear much blacker than our two common wasps *V. vulgaris* and *V. germanica*. The males and workers are black and yellow banded, but the queens are unusual being a yellowish orange with black bands, resembling a small worker hornet in colour as well as in size. The front of the face generally has a black spot in the centre of the yellow, and the ocular sinus (indentation of inner eye margin) is mainly yellow. The antennae are yellow at their base. The thorax generally has four yellow spots at the rear, but several observers have noted that it is often only the rear two spots which are visible. Colour is not sufficient to confirm identification and structural characters are required. The malar space (the distance between the base of the mandible and the eye) is long, making it one of the 'long-faced' wasps. A definitive character is a series of very fine wrinkles on the pronotum (anterior part of thorax when viewed laterally) which can be seen in good light with a X10 hand lens.

The nests of *D. media* appear to be very characteristic, but again, to confirm identification of the colony, a specimen of a wasp is needed. Nests are always aerial, usually suspended among the branches of a tree or bush and are often very visible. They are lemon-shaped and the entrance hole is at the side in a slightly upturned base. The wasp paper is spread in smooth bands around the nest, compared to the scallop-shaped paper of the Common Wasp. It is made from both sound or rotten wood and is generally yellowish grey in colour. In Britain nests have been found at heights from just above ground level to about 5 metres. The numbers of cells is quite low, no more than a few hundred.

Queens emerge from hibernation in the spring and the workers fly from the end of May to October. Females appear in early August and males fly from mid-August to mid-September. Adults will also visit flowers for nectar and this is particularly noticeable in high summer when the females and males emerge.

This species is reported to be much less aggressive than our common wasps, but they certainly do not appreciate having their nest prodded or, on occasion, being observed too closely.

Our first record of *D. media* in the county was at Shefford (TL1438) in August 1990 when an active nest was suspended in the branches of an apple tree in a garden. As it was causing a nuisance the nest was gassed by pest control personnel. The nest was cut out of the tree and later brought into the Bedford Museum with several wasps 'frozen' on the surface. Its identification as *D. media* was confirmed by G.R. Else of The Natural History Museum, London. The next record came in 1991 when a deserted nest was found by R. Revels at The Moat, Dunton Lane, Biggleswade (TL2043) on

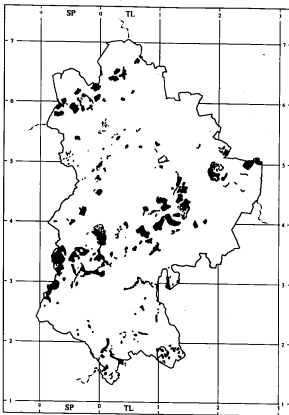
1st October. This nest was suspended in the lower branches of an apple tree among brambles. Mr Else confirmed the identification based on an unemerged wasp we extracted from one of the cells in the nest. The third record came in 1992 when a nest was found in a garden in Studham (TL0217) in August and, also in the autumn of 1992, a rather dilapidated deserted nest was found at Ickwell Green (TL1545).

During 1993 there has been a spate of records across the county. July was the month for which most reports have originated. In Luton, pest control officers had not treated nests of this species before 1993, but were called out to at about 20 in June, July and August 1993 (TL0722 - one; TL0823 - four; TL0824 - one; TL0922 - one; TL0923 - two; TL1022 - three; TL1023 - four; TL1121 - one; TL1122 - one; TL1123 - one). The nests in Luton varied in distance from the ground between about 1' to 15', but one was unusually recorded at 25' under the roof overhang of a house. They were found in a Pear tree, Rowan, Raspberry canes, *Cupressus*, *Hydrangea* and under a front door overhang; one household even had two nests.

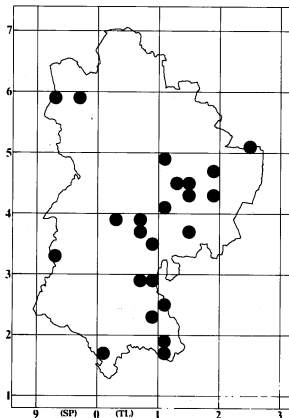
Pest control officers in the north of the county were called to treat nests in 1993 at Bromham (TL0050), Turvey (SP9452), Sharnbrook on a flowering currant (SP9959) and Bedford (TL0752). Other nests in 1993 have been found at The Bury, Pavenham (SP9955), Keysoe Church (TL0762), Bedford TL0751) and Ampthill (TL0337). A second nest was observed near Keysoe (TL0962) and this was more unusually hanging from the south-east side of an open barn roof, perhaps 15 feet above ground level. Through binoculars the nest looked to be a typical *D. media* shape and the wasps were dark but I was unwilling to climb up the timber supports to check! However, a dead wasp found in an adjacent home was *D. media* and this was further confirmed when the nest was retrieved in late summer and a few *D. media* queens emerged.

Several gardeners have noticed very black wasps in gardens; one specimen taken from many observed in Nancy Dawson's garden at Ickwell Green was definitely *D. media*. The wasps were observed collecting wood fibres for their nest from a gatepost in mid July and, in late July in particular, feeding with Tree Wasps on *Berberis wilsoniae* flowers.

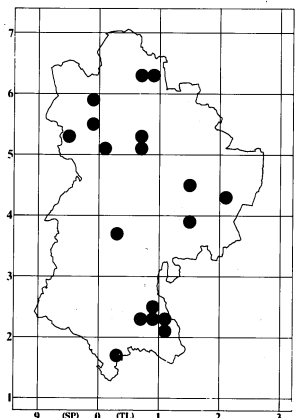
I hope that this report on our social wasps will encourage members to send me both historic records of Hornets and recent wasp records. It is likely that many members will come across a nest of the Median Wasp in the near future, possibly in your own garden. I would be most grateful if you would let me know when and where, together with any observations about behaviour. All records are being passed on to the national recording scheme.



Distribution of
woodland in Bedfordshire



Hornet
Vespa crabro
1980-1993



Median Wasp
Dolichovespula media
1980-1993

ACKNOWLEDGEMENTS

The majority of observations here are based on information which has been given to me by others and I am grateful to all for encouraging me in various ways to delve into a group of species I had previously avoided. I would like to thank the following: T. Aldous, V. Arnold, C. and P. Baker, B. Chambers, J. Childs, J. Comont, M.J. Everett, N. Dawson, A. Keech, P. Hall, Mrs Millar, B. Nau, D. Parsons, R. Revels, J.T.R. Sharrock, T. Smith, T. Thomas, H. Tombs, I. Woiwod, B. Wright and in particular, G.R. Else of The Natural History Museum, London who confirmed the identification of the first specimens of *D. media* that were found in Bedfordshire.

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LICHENS

Report of the Recorder

A recent visit to Buckle Grove, a coppiced woodland once part of Wrest Park, Silsoe, by two lichenologists, resulted in some interesting finds and new records for the county.

Of particular interest in this woodland were three old oak pollards on which were found growing an assemblage of lichens characteristic of ancient woodlands. These specialised lichen communities are scarce in the Midlands area as pollution and changes in the habitat have taken their toll. How long these lichens will survive is doubtful as one of these trees is dead and there are no mature oak trees in the vicinity.

My thanks to B.J. Coppins and A.M. O'Dare for their visit and species lists.

SPECIES LIST

**Arthonia spadicea*, *Calicium viride*, *Catillaria alba*, *Chaenotheca ferruginea*, **C. trichialis*, *Lecanactis premea*, **Lepraria lobiflora*, **Micarea prasina*, **Microcalicium disseminatum*, *Schismatomma declorans*.

* New County Record

FRANCES B.M. DAVIES

THE DECLINE AND CONSERVATION OF *CERASTIUM BRACHYPETALUM* IN BEDFORDSHIRE

by Peter Horn

In 1917 C.E. Salmon listed ten northern European plants which he believed were likely to occur in Britain. One of these plants, *Cerastium brachypetalum* (Grey Mouse-ear), was found in 1947 in railway cuttings in north Bedfordshire by Mr E. Milne-Redhead whilst attending a field meeting of the Bedfordshire Natural History Society.

When first recorded the plant was stated to be 'in large quantity over a considerable distance' (Milne-Redhead 1947). A few years later it was said to be 'Plentiful for about a mile in the two large cuttings' (Dony 1953). The plants appeared mainly in two colonies, both on west-facing banks of the railway cuttings. These colonies were adjacent to areas that are now the nature reserves 'Sharnbrook Summit' and 'Wymington Meadow'.

C. brachypetalum continued to appear in some quantity for twenty five years, and in 1972 the colonies covered a distance of about 500m and contained a total of about 1000 plants (J. Dony record). In 1980 one colony was much reduced in size although still containing a large number of plants, and the other colony was reduced to a small number of plants mainly growing in open patches near the base of the railway bank or in the ballast stones near the track (L. Farrell/G. Crompton record). This latter colony no longer exists. Since the mid 1980's the plants have mainly occurred only towards the base of the bank in one small colony, with the number of plants tending to decline each year. This year (1993) Lynne Farrell (English Nature) and the writer found only a few plants in this colony.

The decline of *C. brachypetalum* calls for some explanation. The obvious difference in conditions over the years is that the railway banks have become overgrown with vegetation which smothers out the *Cerastium*, which is then confined to the narrow strip of soil at the base of the bank. *C. brachypetalum* is an annual which depends upon bare areas of soil for its establishment each year. In the Bedfordshire colonies these bare areas were to a large extent maintained by frequent burning of vegetation on the railway banks. The plants often appeared only within these recently burnt areas and were not found to any extent outside these areas. Following the disappearance of the steam trains in 1968 fires became much less frequent on the railway banks and the periodic burning of the banks, to avoid extensive accidental fires, no longer happened as an integral part of railway maintenance.

C. brachypetalum is a national rarity listed in the Red Data Book (Perring *et al.* 1983). It has been recorded in Bedfordshire, Northamptonshire and Kent. The plant may no longer appear in Northamptonshire and is under threat in Kent from the proposed route of the Channel Tunnel Rail Link (Palmer 1993). In view of this it is very important that the plant should be conserved in Bedfordshire. Hopefully periodic burning can be re-introduced to restore the open conditions required by this species.

ACKNOWLEDGEMENTS

Thanks to Mr E. Milne-Redhead for some historical information and to Miss L. Farrell for copies of early plant records. Thanks also to British Rail for permission to monitor plants on their land.

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THE AUTHOR

Peter Horn has been the Honorary Warden for The Wildlife Trust's Nature Reserves at Sharnbrook Summit and Wymington Meadow since 1981. He is monitoring the rare colony of *Cerastium brachypetalum* on the railway cutting near the reserves on behalf of Plantlife and English Nature as well as the Wildlife Trust.

Address: 22 Jowitt Avenue, Kempston, Bedford MK42 8NW

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

Recording for the new survey of the county's flora, as detailed in last year's report (Boon 1993), has continued. It is now certain that the Botanical Society of the British Isles will go ahead with a national distributional survey based on a 10km square grid. The starting date of 1987 is the same as that for the Bedfordshire survey which will mean that all records to date will have added value.

Poa humilis Spreading Meadow-grass was reported for Flitwick Moor. It was recorded, as *P. pratensis* subsp. *irrigata*, in Dony (1953) as having been recorded from Flitwick prior to 1904. The 1904 published record, in Druce (1904), was named as *P. pratensis* var. *subcaerulea*. It is good to have this grass recorded again for the county and it highlights the problems that can occur with nomenclature, especially for early records.

One of the county's rarer orchids, *Ophrys insectifera* Fly Orchid, is shown in three tetrads in Dony (1976). Until recently it was known in only one of these. In Dony (1953) this species was classed as being rare and limited to calcareous pastures, even so there were many records mentioned, including Barton. It is good news that a thriving colony has been discovered within the Barton Hills National Nature Reserve to add to the importance of this site.

One of the more curious species to occur in the county is *Myosurus minimus* Mousetail. It is of infrequent occurrence and has been reported in an area of disturbed soil near Bromham. The only other recent record was from Little Barford (Boon 1988), prior to which it had not been reported for about 10 years, and then only in the south of the county.

There is some confusion concerning the status of *Ornithogalum angustifolium* Star-of-Bethlehem. Until recently (Stace 1991) the species that occurred in the wild appeared to be regarded as synonymous with the familiar garden species and was called *O. umbellatum*. Dony (1976) indicates records in 12 tetrads, with a further 14 subsequently. How many of these records refer to the wild form is not known, but, in sites such as Biggleswade Common, it is possible that the population could be native. The wild species usually has 4-12 erect flowers and the apparent sepals (actually called tepals) 15-20mm, whilst the garden form may have up to 20 flowers and has longer tepals to 30mm. The plants have a short flowering season in May/June and it would be good to attempt to distinguish the local populations.

During the year's recording expeditions two particular items stand out. First, near Pegsdon in June, a chalk bank covered in literally hundreds of *Gymnadenia conopsea* Fragrant Orchid, and second, in the Ampthill area, an especially good year for *Saxifraga granulata* Meadow Saxifrage. Sometimes one becomes a little depressed at the continuing destruction and degradation of sites and so it is welcome to see such attractive species still in large numbers.

RECORDS FOR 1993

POACEAE Grass family

Poa humilis Spreading Meadow-grass — Flitwick Moor TL03M (JC MP).

ORCHIDACEAE Orchid family

Ophrys insectifera Fly Orchid — Barton Hills NNR TL02Z (GB).

RANUNCULACEAE Buttercup family

Myosurus minimus Mousetail — Near Bromham TL05F (TH)

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CHRIS BOON

BAT DISTRIBUTION IN BEDFORDSHIRE RELATED TO HABITAT FEATURES

by Joan Childs

There has been concerted recording of bats in Bedfordshire since 1987. The cumulative data of seven years' work allow bat distribution in the county to be related to habitat features.

The Pipistrelle *Pipistrellus pipistrellus* is the most common species of bat in the county. Their catholic choice of habitat is reflected in an almost complete distribution across the county, including both rural and urban areas. Roosts are found mostly in buildings and man-made structures of all ages, often in churches. Feeding sites include gardens, woodland, over water and along hedgerows.

The Brown long-eared bat *Plecotus auritus* is the second commonest species in the county. Because they are gleaners, often taking food from vegetation, their distribution is dependent on woodland. Bedfordshire is not well wooded, but much of the woodland it has is associated with the greensand ridge. Most records of Brown long-eared bats therefore come from this area. Roosts are usually found in the roof spaces of older buildings, in churches and sometimes in tree holes. They are rarely seen flying away from the roost, but are sometimes spotted in woodland, particularly near water.

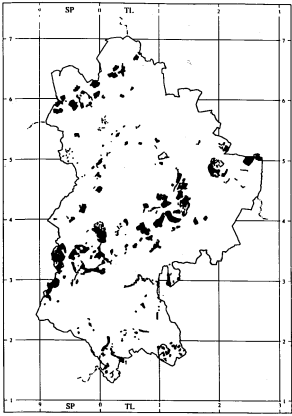
The Natterer's bat *Myotis nattereri* is rarer in Bedfordshire than the Brown long-eared bat. Their distribution also appears to be linked to woodland. Natterer's bats are most frequently found roosting in churches, occasionally in other buildings. They are rarely identified in flight away from the roost, but have been seen feeding in woodland near water and along hedgerows.

The Daubenton's bat *Myotis daubentonii* is also known as the Water bat. The distribution of Daubenton's bats is closely linked with non-overgrown sections of rivers and open, standing water in the county. Although bridge roosts of Daubenton's bats are reported in other counties, none have been found in Bedfordshire. In this county they have only been found in old woodpecker holes and similar crevices in trees, particularly oaks, close to water. Flying bats are usually encountered in level flight, a few centimetres over the surface of water, where they feed on insects.

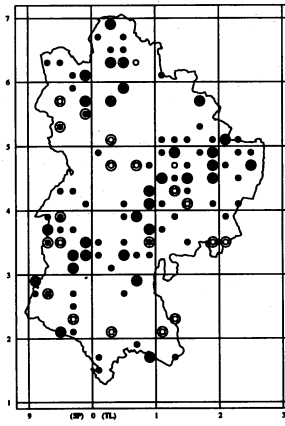
The Noctule *Nyctalus noctula* is rarer than the Daubenton's bat in the county. The distribution of Noctules in Bedfordshire also follows that of waterways and standing water. There have been few roosts identified in the county, but they have all been old woodpecker holes in trees. Bats are usually seen flying high over water, often in the early evening.

Other species recorded in the county, such as Whiskered/Brandt's bat, Barbastelle and Leisler's bat, are so rare that their distribution tells us little about their habitat preferences and requirements.

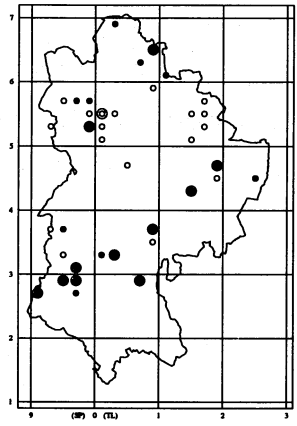
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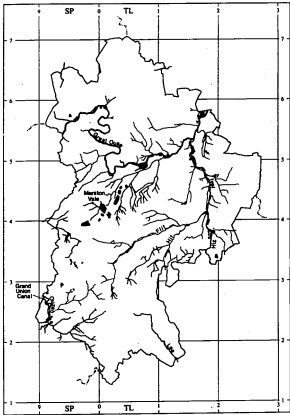
Woodland in Bedfordshire



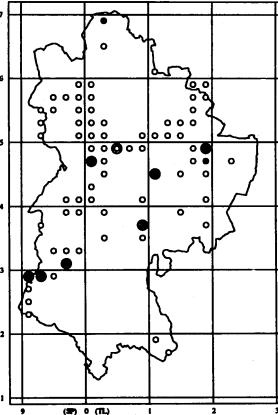
Brown Long-eared Bat
Plecotus auritus
1987 — 1993



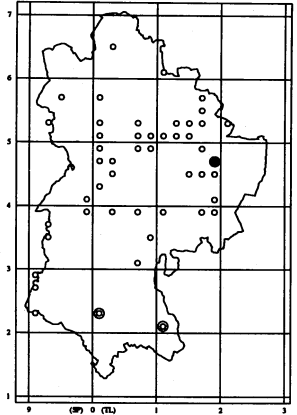
Natterer's Bat
Myotis nattereri
1987 — 1993



Rivers and open water
in Bedfordshire



Daubenton's Bat
Myotis daubentonii
1987 — 1993



Noctule
Nyctalus noctula
1987 — 1993

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

DYING ASH TREES

by B.S. Nau

During summer 1992 I became conscious of a surprising number of hedgerow Ash trees dying back. In mild cases it was only a few upper branches, in more severe cases a large proportion of the tree was dead and, in a few cases, the entire tree was dead. I first noticed this when commuting between Toddington and Cranfield via Woburn. Having become conscious of the phenomenon, on travelling about more widely I realised that it was widespread in the county, and also in the neighbouring counties of Bucks, Oxon and Cambs, and elsewhere in East Anglia. At the time I could not be sure that the trees had not simply shed leaves early due to the relatively dry year. However, the phenomenon was sufficiently striking that I photographed one group of trees near Milton Bryan which were particularly badly affected.

1993 Survey

The following year it was soon apparent that the trees had indeed permanently died back. More surprisingly, on returning to rephotograph the group of trees photographed in 1992, I was surprised to find that they were in *exactly* the same condition as when photographed the previous year, the damage had progressed no further in these trees!

I then decided to quantify the extent of the problem by systematically checking the condition of a sizeable sample of Ash trees, the survey was undertaken on 4th September 1993, The survey area extended from Toddington to Milton Bryan, being conveniently close at hand, and the sample comprised eighty trees: namely all roadside Ash trees along Park Road, and its continuation through Milton Bryan to the Hockliffe — Woburn road, plus accessible Ash trees in adjacent fields/hedgerows. The latter were generally within 100-200 m of the road.

The survey revealed that 25% of Ash trees in the sample had died to the extent of 20% or more, the histogram in Figure 1 shows the incidence of the phenomenon.

The technique used in the survey was to record the extent of die-back of each tree, on a scale of 0 to 100%. In addition, certain additional information was recorded in the hope of shedding light on the cause of the problem. The additional information comprised:

- girth at 1.5 m above ground;
- tree management;
- land-use adjacent to the tree;
- extent of Ivy growth on the tree;
- drainage.

Analysis of factors

Girth was included in case the effect is age-related. In fact, one tree was apparently dying of old age but most were not yet mature. It is therefore unlikely that old age is a factor. Ivy has often been accused of damaging trees and was therefore recorded. Ivy growth increases with tree age and girth, and therefore inter-relates with these, not surprisingly therefore, analysis of die-back against amount of Ivy on the tree also shows no correlation. Few trees showed signs of major management, three were coppiced and one pollarded; this cannot therefore be a major factor.

Land use was recorded in case the cause was related to agricultural cultivation or spray. The land-use categories were kept simple and comprised the following categories:

- A — arable field
- P — pasture
- U — uncultivated ('set aside')
- V — verge (extending beyond tree canopy)
- R — road (tarmac within 2 m of trunk)
- T — track (unsurfaced track within 2 m of trunk)
- G — garden (lawn)

Figure 2 presents the die-back frequency distribution for each land-use category. The annotations comprise two letters e.g. AP to denote arable, 'A', one side of the tree and pasture, 'P', on the other. The results show that most of the badly affected trees are associated with groups: AA, AV and PR. Both arable and pasture feature in these three groups, but significantly *neither* appears in all three. Note that since most of the trees are necessarily in one or other of categories A and P, these categories would appear even if they have no role in causing the damage. On the other hand one cannot rule out the possibility that a critical chemical treatment has been applied to both pasture and arable.

The last factor was included as in some places a very deep ditch (1.5-2 m deep) had been cut close to trees in such a way that damage to root systems seemed likely. Also, some trees were on sloping well-drained ground and others on low-lying relatively damp ground (e.g. growing in proximity to Hairy Willowherb). In fact few trees suffering significant die-back are associated with deep ditches (3 out of 16), and badly affected trees seem equally frequent in well-drained and damper areas.

The above analysis does not identify the cause of Ash die-back. On the other hand die-back is not random, as can be seen from Figure 1 which shows the surveyed trees in order of survey, namely from south to north. Notice that there is a marked tendency for affected trees to be in groups. The largest affected group (ref. nos. in the 30's in Figure 1) are located on a well-drained north-facing slope, in hedgerows bounding arable fields on either side of the road. The next largest group (upper 60's) are in much damper level ground, although with deep ditches. The affected trees in the 70's are in somewhat similar situations.

Change with time

Figure 3 shows two photographs of an affected group of Ash trees, taken on 20th September 1992 and 4th September 1993. In the first year, when the photograph was taken slightly later in the season, the pair left of centre show premature autumnal leaf loss, interestingly this was recovered in subsequent years, however it seems to indicate stress which the trees are experiencing before actual die-back.

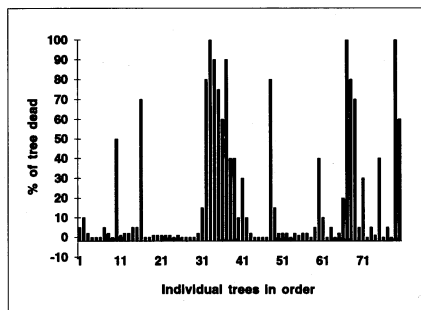


Figure 1 Dieback in Ash trees in the Toddington — Milton Bryan study area

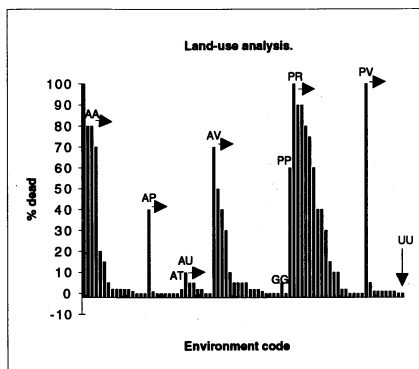


Figure 2 Dieback frequency distribution for each land use category



Figure 3 Dieback in Ash trees photographed on
a) 20th September 1992
b) 4th September 1993

(Photos: Bernard Nau)

The wider picture

After completing this analysis, my attention was drawn to other studies of dieback in Britain (Hull and Gibbs, 1991; Pawsey 1983) and North America (Ross 1964; Tobiessen and Buchsbaum, 1976; Houston 1981). No single clear-cut cause emerges from these studies, but it seems likely that a combination of factors, individually inducing stress, combine to cause dieback. Oak is affected almost as much as Ash.

Hull and Gibbs examined more than 4000 Ash trees, sampled across England, Wales and Scotland. They found the worst affected area to be the south-east Midlands (i.e. our own area), here 28% of trees were affected; least affected is Wales (7%). The proportion of trees affected in rural areas is double that in urban areas. Trees adjacent to arable land, roadsides, or deep ditches are considerably worse affected; which is supported by the results of the present Bedfordshire study. Other factors associated with dieback are the soil types rendzina and gley; and mean summer rainfall below 400 mm. Soil compaction is considered to be another possible factor, and is known to be worse on some soil types than others. Hull and Gibbs found no correlation with proximity to Bedfordshire brickworks.

Conclusions

On the evidence from the present survey alone, one cannot point to a clear-cut factor likely to be responsible for the observed die-back of hedgerow Ash trees, dramatic though this is in parts of our county. At first I expected that there might be a correlation with land-drainage or agricultural spray. The former does not seem to be implicated in a simple manner by the present evidence, but drainage in apparently damp low-lying areas might have been more effective as far as hedgerow trees were concerned, than appeared likely from the occurrence of damp-loving herbaceous vegetation flourishing across the ditch from a hedge. The present data do not therefore rule out lack of water as a factor. Agricultural spray appears vindicated unless it is used both on pasture and arable.

The conclusion drawn from the literature is that almost any factor reducing availability of water to the tree can contribute to dieback. This is supported by studies in both Britain and N. America, where Ash also suffers dieback. Interestingly Oak, which has a deeper root system than Ash, seems less affected by deep ditches although suffering equally elsewhere.

It may be no coincidence that the dieback problem is worst in this the driest region of the country, an effect apparently worsened by cultivation or drainage activities which further deprive the tree of water.

ACKNOWLEDGEMENTS

Thanks are due to John Niles, County Forestry Officer, for drawing attention to the Hull and Gibb paper, and to Rosemary Brind for obtaining a copy.

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THE FUNGUS FORAY, 1993

KINGS WOOD, HEATH AND REACH AND STOCKGROVE COUNTRY PARK

The fungus foray, held late in the season this year, on 31st October was again led by Dr D.A. Reid, with about 25 members present. The morning was spent searching Kings Wood, Heath and Reach, previously visited on 9th October 1988 (*Bedfordshire Naturalist* 43, 95-96) while in the afternoon adjacent Stockgrove Country Park was visited. Both stretches of woodland comprise conifer plantations and areas of mixed deciduous trees.

In general fungi were rather scanty, at least with regard to numbers of fruitbodies, but when the proceeds of each of the forayers baskets were inspected a list of 110 species was compiled from Kings Wood and 25 species from Stockgrove Country Park, giving 134 different species for the day, of which 6 were new to the County.

From the short stretch of mossy roadside bank with gnarled pollarded oaks, leading from the Country Park to the entrance into Kings Wood, three unusual fungi were found i.e. *Gaestrum triplex*, *Leotia lubrica* and *Hygrophorus quercetorum*.

The Earth Star *Gaestrum triplex* is a rare species in Bedfordshire with only four records in the last forty years or so. This species can be up to about 14 cm across when the rays are fully expanded, and before they curve under the fructification, pushing up the globular spore sac above the surrounding leaf litter. The central spore sac has a fringed apical pore surrounded by a distinctive halo and is seated in a saucer-shaped splash-cup. At maturity the powdery spores are held in a brown cotton-wool-like tissue within the spore-sac, the wall of which becomes thin and papery. Rain drops falling on the spore-sac cause it to act like a pair of bellows puffing out clouds of spores. Drops which miss the sac but fall in the surrounding saucer exert a lateral splash effect, again liberating a cloud of spores.

Leotia lubrica more popularly known as the "Jelly Baby Fungus" has a uniform amber translucent appearance very like that of the old-fashioned childrens' sweets. It is up to 4 cm high with a convex to flattened head with a downwardly enrolled margin. This fungus, which is an Ascomycete, belonging to the group of the cup fungi or Discomycetes, was last found in the County at Chicksands in 1956. *Hygrophorus quercetorum*, previously found in precisely the same locality in 1988, is a sticky, white species with pointed stem, decurrent gills and an aromatic smell. It has no doubt been confused at national level with the very similar *H. cossus* and *H. eburneus*. However it has a slightly different resinaceous smell from the former which is said to resemble that of goat-moth larvae. *H. quercetorum*, which occurs under oak has a tendency to become cream coloured at maturity.

Other noteworthy agarics from Kings Wood included *Agaricus bitorquis* — a rather large white fleshy species recognised by having two sock-like rings which sheath the base of the stem; *Cortinarius acutus* with a brown striate, hygrophanous cap and a prominent acute umbo; and the cone inhabiting *Pseudohiatula esculenta*. The latter arises from buried spruce cones to which it is attached by a rooting stem. This marasmioid agaric has a tough elastic texture, a brown cap about 2 cm in diameter, pale stem becoming brown below and white gills with a greyish tint. Under the microscope it is distinguished from related cone-inhabiting species by the presence of thick-walled, apically encrusted, fusoid cystidia on both gill face and margin.

A list of species from Kings Wood follows:

**Agaricus bitorquis*; *Amanita muscaria*; *A. rubescens*; *Armillaria mellea*; *Boletus badius*; *B. chrysenteron*; †*Cantharellula cyathiformis*; *Clitocybe clavipes*; *C. bicolor*; *C. ditopa*; *C. nebularis*; *Collybia butyracea*; *C. dryophila*; *C. erythropus*; *Coprinus leiocephalus*; **Cortinarius acutus*; *C. delibutus*; *Cystoderma amianthina*; *Galerina hypnorum*; *G. mutabilis*; *Gymnopilus penetrans*; *Hebeloma crustuliniforme*; *Hygrophorus hypothecus*; *H. quercetorum*; *Hypholoma fasciculare*; *H. sublateritium*; *Laccaria amethystea*; *L. laccata*; *L. proxima*; *Lactarius chrysorheus*; *L. quietus*; *L. subdulcis*; *L. turpis*; *Lepiota aspera* (= *acutesquamosa* = *friesii*); *L. cristata*; *L. sistrata*; *Marasmius epiphyllus*; *M. undatus*; *Mycena cinerella*; *M. epipterygia*; *M. galericulata*; *M. galopus*; *M. inclinata*; *M. polygramma*; *M. pura*; *M. vitilis*; *Paxillus involutus*; *P. panuoides*; *Pluteus phlebotomus*; *Psathyrella hydrophila*; *P. microrhiza*; **Pseudohiatula esculenta*; *Russula cyanoxantha*; *R. fragilis*; *Tricholoma sulphureum*

Bjerkandera adusta; *Botryobasidium subcoronatum*; *Clavulina cinerea*; *Coniophora puteana*; *Coriolum versicolor*; *Daedaleopsis confragosa*; *Ganoderma adspersum*; *Hirschioporus abietinus*; *Hymenochaete rubiginosa*; *Merulius tremellosus*; *Peniophora quercina*; *Phellinus ferreus*; *Phlebia merismoides*; *Piptoporus betulinus*; *Schizopora paradoxa*; *Stereum gausapatum*; *S. rameale*; *S. rugosum*; *Trechispora vaga* [*Cristella sulphurea*]; *Typhula erythropus*; *Tyromyces albellus* [*T. chioneus*]; *T. sericeo-mollis*; *Vuilleminia comedens*
Dacrymyces stillatus
Exidia glandulosa
Geastrum triplex; *Lycoperdon pyriforme*; *Phallus impudicus*; *Scleroderma citrinum*
Coleosporium tussilaginis; *Phragmidium violaceum*; *Puccinia annularis*
Ascocoryne (Coryne) sarcoides; *Bisporella citrina*; *Chlorosplenium (Chlorociboria) aeruginascens*;
Cudoniella acicularis; *Hymenoscyphus fructigenus*; *Leotia lubrica*; *Mollisia cinerea*; *Polydesmia pruinosa*;
Trochila ilicina [= *T. ilicis*]
Claviceps purpurea; *Daldinia concentrica*; *Diatrype stigma*; *Hypoxylon fragiforme*; *H. multiforme*;
Lophodermium pinastri; *Nectria cinnabarina*; *Rhopographus filicinus*; *Xylaria hypoxylon*
Fusidium aeruginosum; *Sepedonium chrysospermum*
Lycogala epidendrum; *Trichia botrytis*; *Tubifera ferruginosa*

Total 110 species:

† Confirmation of existing record (1); * Species new to the County (3).

From Stockgrove Park it is interesting to note the occurrence of *Amanita gemmata*. This is an uncommon species of conifer woods but one which is known from several localities in the County. It has a pale citron-yellow cap, with whitish patches of velar tissue, and a grooved margin; the white stem which lacks a ring is sheathed by a volva which has a free collar-like edge.

Also from Stockgrove were two unusual species of *Conocybe*, although both have been previously recorded from the County. *Conocybe blattaria* appears in Dony's flora as *Pholiota blattaria*, and is one of those species of *Conocybe* with a well defined yellowish ring on the brown stem. Under the microscope it is recognised by having 2-spored basidia and large, somewhat amygdaliform spores 11-13(14) x 5.5 - 6.5 (7) µm. In contrast *C. vestita* lacks a ring but has velar remnants adhering to the cap margin, and a stem which is cream above becoming dark brown below, but the latter colour is obscured by copious silvery fibrils. It has 4-spored basidia and amygdaliform spores measuring 6.5 - 9.0 x 5.0 - 5.5 µm.

The finding of *Mycena smithiana* on rotting oak leaves, in the Country Park, by Kerry Robinson adds another species to the list of known fungi for Bedfordshire; it is probably often overlooked on account of its small size. The whitish cap with a pale pink flush is only 2-3 mm across, and is borne on a tall, thread-like stem.

Ascocoryne cylichnium is very similar to the firm gelatinous purple cup fungus — *A. sarcoides*, from which it is distinguished by having larger spores 18 - 30 x 4 - 6 µm which become multiseptate and bud off globular secondary spores while still within the ascus. It too is a new addition to the County.

A list of the species from Stockgrove Country Park follows:

Amanita citrina; *A. gemmata*; *Boletus subtomentosus*; †*Conocybe blattaria*; *C. vestita*; *Coprinus comatus*;
Hypholoma marginatum; *Lactarius deterrimus*; *Lepista nuda*; *Mycena galopus* var. *candida*; **M. smithiana*;
Russula atropurpurea; *R. betularum*
Hirschioporus abietinus
Calocera viscosa
Auricularia auricula-judae
Lycoperdon foetidum; *Scleroderma verrucosum* s. str.
**Puccinia phragmitis*
**Ascocoryne cylichnium*; *Bulgaria inquinans*
Erysiphe tortilis; *Nectria episphaeria*
Arcyria denudata; †*Brefeldia maxima*

Total 25 species

† Confirmation of existing record (2); * Species new to the County (3)

SITES

Report of the Recorder

There are now a number of statutory and non-statutory designations used within the county for areas of natural history interest and these are summarised briefly in this report.

There are three kinds of statutory sites. The two highest categories are National Nature Reserve (NNR) and Site of Special Scientific Interest (SSSI); the third is the Local Nature Reserve. The two non-statutory site designations are County Wildlife Sites and Regionally Important Geological and Geomorphological Sites.

During 1993 our NNRs increased in number from two to three. The existing NNRs of Barton Hills and Knocking Hoe are both areas of unimproved chalk grassland. The new NNR is part of Kings Wood, Heath and Reach. Kings Wood is part of the largest area of ancient semi-natural woodland within the county and is already an SSSI. The NNR boundary is very complex however due to the unusual history of the wood. In the 1960s the wood was divided into small blocks and sold off separately. Although this perhaps saved the wood from clear felling and coniferisation it means that co-ordinated management of the woodland is very difficult. In recent years Bedfordshire County Council (BCC) and Bedfordshire and Cambridgeshire Wildlife Trust (BCWT) have bought up blocks as opportunities present themselves. As "Approved Bodies" with English Nature, only the areas owned by BCC and BCWT are part of the NNR. A plan of renewing the coppice cycle and ride improvement has now been produced.

The SSSIs in the county were summarised in the Journal in 1989, and in subsequent site reports, and the total now stands at 39; no new SSSIs were designated in 1993.

Local Nature Reserve is the name given to sites owned or controlled by local authorities and with a management plan agreed with English Nature. In Bedfordshire there are seven such sites including Bromham Lake, Fenlake Meadows in Bedford, Coopers Hill, Galley and Warden Hills, Totternhoe Knolls, Maulden Church Meadow and Kings Wood at Houghton Conquest.

Of the non-statutory sites, County Wildlife Site (CWS) is the name given to about 350 areas of semi-natural habitat. (These sites were initially called Prime Sites of Nature Conservation Interest or PSNCI). The selection was largely based on the Phase I survey of the county which was carried out by the Wildlife Trust with the support of English Nature and the County Council. County Wildlife Sites are notified to the local authorities for use in all aspects of planning so that full account can be taken of conservation in determining the outcome of planning proposals that may affect these sites.

Geological sites are now being looked at by a newly formed RIGS group. RIGS stands for Regionally Important Geological and Geomorphological Sites and over the next few years we shall see a small number of sites being designated for not only their scientific interest but also their educational potential for the earth sciences.

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I would like to thank everyone who have given me information about sites during the course of the year.

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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.

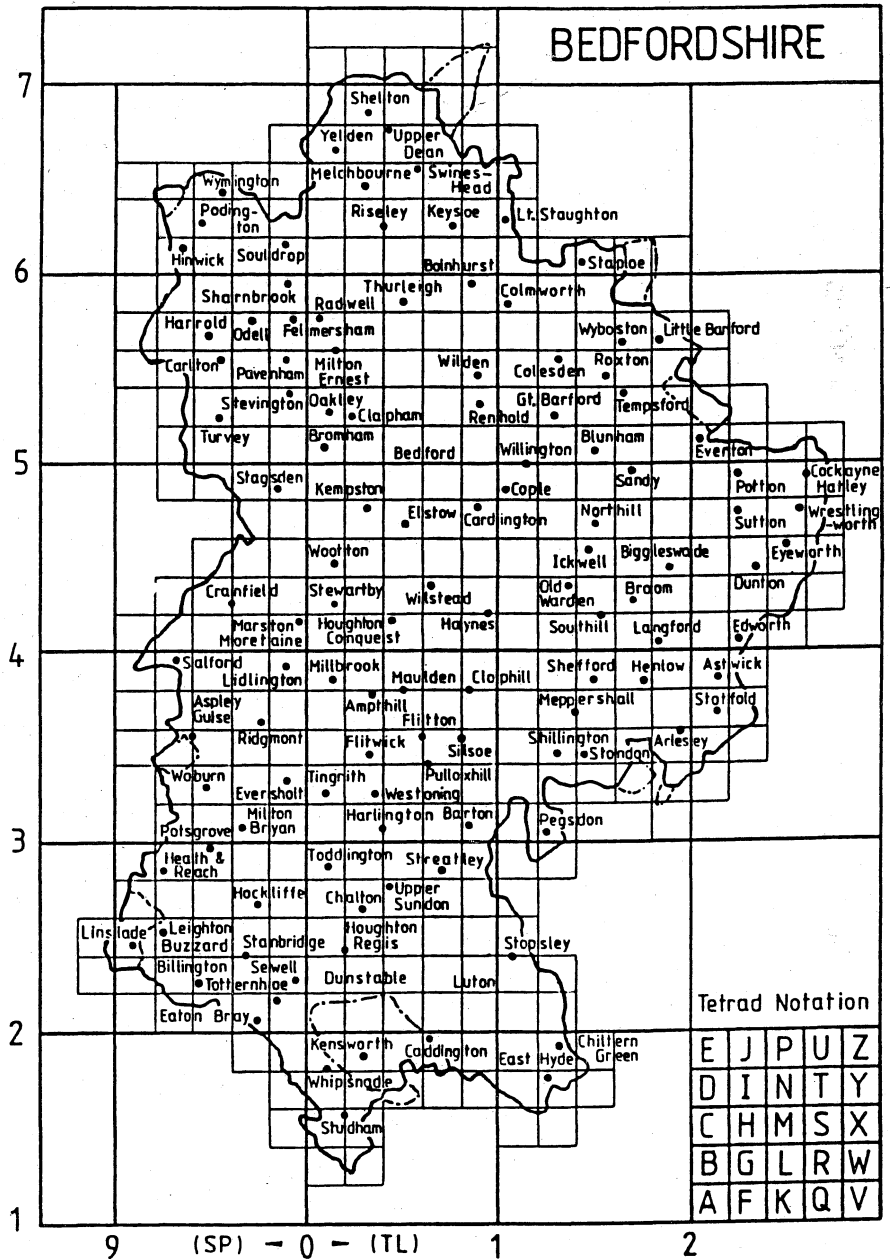
THE SOCIETY

The Bedfordshire Natural History Society was formed in 1946 when a group of local naturalists joined together with the aim of giving the recording of natural history within the county borders a focal point. The Society now has over 20 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 include the *Bedfordshire Bird Atlas*, mapping the distribution of breeding birds within the county, 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 BNHS is often sought when planned work may be detrimental to the local environment and its members regularly contribute to nationally organised surveys. Membership is open to all, whether resident in the county 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



Tetrad map of Bedfordshire showing the main towns and villages