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for the year 1989

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BEDFORDSHIRE

BEDFORDSHIRE NATURAL HISTORY SOCIETY 1990

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Dr D. Allen

Mr C. Baker
Mr S. Cham
Ms J. Childs
Mr D. Green

Dr P. Hyman
Mr A. Martin
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Honorary Editor (*Muntjac*):

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Programme: Mr J. Adams, Mr C. Baker, Mr D. Green, Mr D. Rands, Mrs M. Sheridan.

Trustees (appointed under Rule 13): Mr M. Chandler, Mr D. Green, Mrs B. Rands.

THE BEDFORDSHIRE NATURALIST

No. 44 (for 1989)

Edited by C.R. Boon

CONTENTS

Officers of the Society cover ii

Report of the Council 2

Proceedings 3

Report of the Treasurer 4

Statement of Accounts 5

Sites of Special Scientific Interest in Bedfordshire — R. Brind 7

Meteorology — Report of the Recorder 11

Geology and Palaeontology — Report of the Recorder 12

Notidanodon lanceolatus Woodward, A Lower Cretaceous comb-toothed shark from Shenley Hill,
Leighton Buzzard — P.J. Smart 15

Daubenton's Bat at Stockgrove Country Park roost — J. Childs and A. Aldous 19

Mammals — Report of the Recorder 21

Reptiles and Amphibians — Report of Recorder 26

Birds — Report of the Recorder 27

Birds New to Bedfordshire (1989)

 Black Kite — R.A. Nye 49

 Ring-billed Gull — T. Robson and P. Oldfield 50

Ring-necked Duck in Bedfordshire — M.J. Palmer 51

Bedfordshire Breeding Bird Atlas 1988-1992. Progress report 1989 — R.A. Dazley 52

Bird Ringing Report 1989 — Report of the Coordinator 53

Dragonflies — Report of the Recorder 55

Bugs — Report of the Recorder 59

Butterflies — Report of the Recorder 59

Micro-moths — Report of the Recorder 61

Macro-moths — Report of the Recorder 62

Beetles — Report of the Recorders 65

Bedfordshire mosses not recorded in recent times — A.R. Outen 71

Flowering Plants, Ferns and Fern Allies — Report of the Recorder 75

Mosses and Liverworts — Report of the Recorder 77

Lichens — Report of the Recorder 77

The Fungus Foray, 1989 — A.R. Outen 78

Sites — Report of the Recorder 80

Recorders cover iii

The Society cover iii

Tetrad Map of Bedfordshire cover iv

Front cover: *Daubenton's Bat* — Joan Childs

The Society would like to thank Bedfordshire County Council for a grant towards the publication of this Journal.

REPORT OF THE COUNCIL

The Council is able to report a varied and successful year of activities for 1989. During the year, 17 indoor meetings were held (in the winter months), 26 field meetings took place together with two weekend meetings (to the Solway Firth in February and to Teesdale in June), the annual all-night meeting in Maulden Wood and the one day course at Shuttleworth. A number of indoor meetings, following the policy adopted last year, featured speakers of national repute, including Chris Mead (from the BTO) on bird migration, Dr Ernest Neal on Badgers, David Cotteridge on the birds of Nepal and Peter Robinson on his work as Senior Investigations Officer in the RSPB Species Protection Department. Many excellent talks were also given by members of the Society.

At its first meeting, following the AGM, Council decided to dispense with the previous Membership Committee, and to establish a new Development Committee. The principal functions of the new committee are:

1. To consider the development of the Newsletter to provide a better service to members.
2. To consider ideas for additional services to members.
3. To consider the needs of members in order to determine future activities.
4. To review publicity and the promotion of the Society externally.
5. To consider publicity and promotion of Society publications.

The committee met a total of six times, approximately monthly, and Council has expressed considerable satisfaction with its progress to date. It is therefore regrettable to report that the total membership for the year has dropped slightly below that of 1988. However, with the planning and experience gained in 1989 it is hoped that better publicity for the Society will result in more members in 1990.

Following the approval and publication of Council's policy with regard to publications, it is pleasing to report that work on the *Butterflies of Bedfordshire* is now well advanced, and that the Scientific Committee has established a working party to oversee publication.

In June, it was with shock and sadness that Council learned of the sudden death of its Honorary Treasurer, Dick Johnson, who had served in this capacity since 1988. John Burchmore agreed to be co-opted to Council as Acting Treasurer for the remainder of the year. In August Barry Stephenson notified Council that after 15 years service as Membership Secretary he would not be standing for re-election at the next AGM, because of other commitments. In December, Brenda Chandler notified Council that she would be unable to continue as Newsletter Editor after completing the issue for March 1990. Brenda performed nobly for the Society in this capacity, having taken over the job 'temporarily' and at short notice, following the sudden death of the former editor Roy Wagstaff in mid-1986. The position of Newsletter Editor will be taken over by Carol Aldridge. To complete the changes, the Society's Chairman since 1985, Derek Rands, decided not to stand for re-election, after five years unstinting service to the Society. To all these people, who have made notable contributions to the Society, Council would like to express its thanks. Council would also like to thank the many other members of the Society who in many ways help to make the Society the success that it is.

On the 8th August 1989 Dr John Dony celebrated his 90th birthday. The Society commemorated the occasion with a presentation on behalf of all the members of the Society, with best wishes for many more to come.

At the end of 1989 the total membership of the Society stood at 419 compared with 427 at the end of 1988.

MIKE WILLIAMS Hon. Secretary

	1986	1987	1988	1989
Ordinary Members	375	378	362	356
Associate Members	62	55	43	42
Student Members	14	15	7	6
Corporate Members	7	9	9	9
Life Members	5	4	4	4
Honorary Life Members	2	2	2	2
	465	463	427	419

Table: Membership of the Society over the last four years

PROCEEDINGS

Indoor Meetings

- 596th Ordinary Meeting** 5th January, Bedford. "Natural history recording in Bedfordshire" by Mr D. Rands. Chair: Dr D. Allen.
- 597th Ordinary Meeting** 10th January, Dunstable. "The birds and other aspects of Sri Lanka" by Mr D. Kramer. Chair: Mr W. Drayton.
- 598th Ordinary Meeting** 18th January, Ampthill. Twitchers' evening. Chair: Mr P. Trodd.
- 599th Ordinary Meeting** 25th January, Leagrave. "The ecology of woodpeckers" by Mr K. Smith. Chair: Mr P. Trodd.
- 600th Ordinary Meeting** 1st February, Bedford. "Wildlife conservation on Bedfordshire farms" by Mr J. Howe, Countryside Adviser, Bedfordshire County Council. Chair: Miss A. Day.
- 601st Ordinary Meeting** 8th February, Ampthill. Members' evening. with short talks — "Bats in Beds" by Ms J. Childs, "Interesting woodlice in Beds" by Mr D. Guntrip, and "Bumblebees in Beds" by Mr J. Knowles. Chair: Mr D. Rands.
- 602nd Ordinary Meeting** 14th February, Dunstable. "Bird migration" by Mr C. Mead. Chair: Dr B. Nau.
- 603rd Ordinary Meeting** 22nd February, Leagrave. "The natural history of an Orkney island" by Mr S. Cham. Chair: Mr M. Sheridan
- 604th Ordinary Meeting** 2nd March, Bedford. "Research in Amboro National Park in Bolivia" by Mr M. Powell. Chair: Mr R. Fail
- 605th Ordinary Meeting** 14th March, Dunstable. "Parasites, saprophytes and carnivores" by Mr A. Outen. Chair: Mr V. Arnold.
- Annual General Meeting** 23rd March, Flitwick.
- 606th Ordinary Meeting** 5th October, Bedford. "Badger society" by Dr E. Neal. Chair: Mr D. Anderson
- 607th Ordinary Meeting** 17th October, Dunstable. "Best of the west" by Mr P. Symonds. Chair: Mr V. Arnold.
- 608th Ordinary Meeting** 1st November, Bedford. "A bit about bats — pips and pops" by Ms J. Childs. Chair: Mr J. Adams.
- 609th Ordinary Meeting** 8th November, Leagrave. "Birds of the Sacred Mountain" by Mr D. Cottridge. Chair: Mr B. Nightingale.
- 610th Ordinary Meeting** 21st November, Dunstable. "Current affairs in Beds" organised by Miss R. Brind.
- 611th Ordinary Meeting** 30th November, Flitwick. Members' evening. Chair: Mr W. Drayton.
- 612th Ordinary Meeting** 7th December, Bedford. "A better world for birds" by Mr P. Robinson, Head of RSPB Species Protection Department. Chair: Mrs B. Chandler.
- 613th Ordinary Meeting** 13th December, Luton Museum. Chairman's evening — "Small mammal recording in Bedfordshire" by Mr D. Rands. Introduced by Dr P. Hyman.

Field Meetings

- Solway Firth**, 10-12th February. A bird watching weekend. Leader: Mr D. Green.
- Woburn Park** 26th February. A winter walk. Leader: Mr J.P Knowles.
- Blows Downs** 23rd April. To watch spring migrants. Leader: Mr P. Trodd
- Framsdan, Suffolk** 29th April. To visit the Fritillary meadow at Boundary Farm. Leader: Mr D. Rands.
- Barton Hills** 30th April. 6th annual Pasqueflower count. Leader: Mr D. Rands.
- Maulden Wood** 7th May. The dawn chorus. Leader: Mr P. Trodd
- Maulden Wood** 14th May. To plot the distribution of Wood Ant nests. Leader: Mr C. Taylor. Forestry Commission Forester.
- Chicksands Wood** 18th May. General natural history. Leaders: Mr J. Adams and Mr D. Parsons.
- Grand Union Canal, Old Linslade** 24th May. General natural history. Leader: Mr and Mrs M. Sheridan.

- Flitwick Moor** 6th June. A detailed look at the mosses and liverworts. Leader: Mr A. Outen.
- Breckland, Norfolk** 11th June. Car trip to see mammals and bird specialities. Leader: Mr D. Anderson
- Upper Teesdale, North Yorkshire/Durham** 16th-18th June. Weekend trip. Leader: Mr V. Arnold.
- Maulden Wood** 24th — 25th June. Annual all-night meeting and barbecue. Organiser: Mrs B. Chandler.
- Shire Oak, Heath and Reach** 29th June. General natural history of acid heath/woodland. Leader: Dr B. Nau.
- Sundon Country Park** 2nd July. Identification of chalk flora. Leader: Mr C. Boon.
- New Forest, Hampshire** 7th - 9th July. General natural history. Leader: Mr S. Cham
- Wavendon Heath, nr Woburn** 14th July. Moth trapping on the Greensand. Leader: Mr V. Arnold.
- Greensand Ridge Walk, Ampthill - Northill** 16th July. Leader: Mr J. Knowles.
- Felmersham** 19th July. Bat watching along the River Great Ouse. Leader: Ms J. Childs.
- Mowsbury Park, Bedford** 13th August. Natural history of a suburban oasis. Leader: Ms J. Childs.
- Priory Park, Bedford** 27th August. Pond dipping. Leader: Mrs H. Muir-Howie.
- Maulden Wood** 10th September. Small mammal trapping. Leader: Mr D. Rands.
- Kew Gardens, Richmond** 16th August. Leader: Dr A. Rundle.
- Priory Park, Bedford** 17th September. Autumn migrants. Leader: Mr D. Kramer.
- Reculver, nr Herne Bay, Kent** 23rd September. Autumn passage migrants. Leaders: Mr M. Williams and Mr D. Green.
- Shuttleworth Agricultural College** 1st October. One day course on a variety of natural history subjects. By kind permission of the Principal. Organiser: Mrs B. Rands.
- Marston Thrift** 15th October. Annual fungus foray. Joint meeting with the Mycological Society. Leader: Mr A. Outen.
- Woburn Park** 5th November. Autumn walk. Leader: Mr J. Knowles.
- Stewartby Lake Country Park** 10th December. A winter walk around the lake. Leader: Dr D. Allen.

REPORT OF THE TREASURER

The Current Account at year end showed a deficit of £423. However, the Journals for 1987 and 1988 were paid for during 1989 and if we look at the two years of 1988 and 1989 together we show an average surplus of £760. Net subscriptions for 1989 of £2,412 was £33 less than the previous year. A grant of £320 was received from Bedfordshire County Council. Local Government Bonds continue to mature but due to current high rates of interest the Society's assets continue to grow and now stand at £28,189.

J.D. BURCHMORE
Acting Hon. Treasurer

INCOME AND EXPENDITURE ACCOUNT FOR YEAR ENDED 31st DECEMBER 1989

INCOME - Current Account

1988		1989	
£		£	
2419	Subscriptions	2801	(1)
25	Sales	9	
39	Surplus on meetings	345	
316	Sundries and donations	3155	
<u>2799</u>		<u>3155</u>	
EXPENDITURE - Current Account			
ADMINISTRATION			
5	Postage	—	
24	Sundries	49	
75	Insurance	50	
8	Officers' expenses	—	
10	Auditors' honorarium	20	
122		119	
MEETINGS			
157	Hire of halls etc.	197	
62	Lectures and films	34	
201	Programmes	234	
420		465	
SCIENTIFIC			
25	Journal	2678	(2)
37	Recorders' expenses	8	
11	Sundries	17	
73		2703	
PUBLICITY/DEVELOPMENT			
182	Newsletter	208	
24	Sundries	48	
206		256	
DEPRECIATION			
35	of equipment	35	
35		35	
1943	Excess of income over expenditure	(423)	
<u>2799</u>		<u>3155</u>	
PUBLICATIONS ACCOUNT			
245	Brought forward	499	
314	Income	232	
60	Expenditure	653	(3)
499		78	

DEPOSIT ACCOUNTS — Interest

247	Bank (H.I.C.A.)	443	
532	Town and Country Building Society	1220	
222	East Staffs. D.C. Bonds	212	
33	Leicester City Bonds	—	
239	Worthing Corp. Bonds	241	
159	Edinburgh City Bonds	80	
411	City of Nottingham Bonds	387	
162	Income Tax Rebate	362	
<u>2005</u>		<u>2945</u>	

BALANCE SHEET AS AT 31st DECEMBER 1989

FIXED ASSETS		COST	DEPRECIATION		
			Total	per Year	
10	Books and Journals		30	5	5
4	Screen	20	18	2	2
25	Malaise and mammal traps	50	30	5	20
26	Duplicator and stand	30	7	3	23
331	Display boards	371	60	20	311
<u>396</u>					<u>361</u>
CURRENT ASSETS					
1962	Bank Current Account				852
4284	Bank High Interest Account (at 9% variable)				2655
—	Cash in Hand				—
5981	Town and Country Building Society (14% variable)				15384
3000	City of Nottingham Bonds (to 30.6.90 at 8.4%)				3000
3000	City of Nottingham Bonds (to 30.6.91 at 8.77%)				3000
2500	East Staffs. D.C. Bonds (to 10.9.89 at 12.0%)				—
3000	Worthing B.C. Bonds (to 28.11.91 at 10.75%)				3000
2000	Edinburgh City Bonds (to 31.3.89 at 10.75%)				—
25727					27891
CURRENT LIABILITIES					
35	Creditors (uncleared cheques)				63
<u>26088</u>					<u>28189</u>

J.D. BURCHMORE
Acting Honorary Treasurer

M. and D. READING
Honorary Auditors

Notes:

- (1) Includes 1990 subscriptions paid in advance of £389
- (2) Includes both 1987 and 1988 Journal
- (3) Includes both 1987 and 1988 Bird Report



Baker's Wood. This site on the Greensand is part of the King's and Baker's Wood SSSI

(Photo: Mary Sheridan)



Houghton Regis Marl Lakes. An important recently designated SSSI, noted particularly for the Odonata species present

(Photo: Mary Sheridan)

SITES OF SPECIAL SCIENTIFIC INTEREST IN BEDFORDSHIRE by Rosemary Brind

It is now 30 years since the last report in this Journal on Sites of Special Scientific Interest (SSSIs) in the county (Dony 1960). In recent years, following the passing of the Wildlife and Countryside Act 1981 there has been a major review and revision of SSSIs according to new criteria adopted by the Nature Conservancy Council.

The following are the SSSIs notified under Section 28 of the Wildlife and Countryside Act 1981 as at December 1989. The date the site was first notified is shown in brackets. Many of the sites are private and ownership of some may be complex. An indication of the present degree of access is given, but this may be subject to change and should be confirmed before any visits. There are brief details on the reasons for notification, together with some indication of management problems. This list is followed by the sites that have been denotified since 1951, with a summary of the reasons for their loss.

- Barton Hills** (1951) TL090298; area 47.5 ha ACCESS — Public footpath
A varied site retaining an extensive cover of unimproved chalk grassland, an ancient beechwood, spring and chalk stream, secondary woodland and scrub. The SSSI boundary has been changed to exclude areas of arable land. The site is also a National Nature Reserve.
- Biddenham Pit** (1988) TL023504; area 0.4 ha ACCESS — Private
This old gravel pit provides important exposures in terrace gravels in the valley of Great Ouse. The deposits have yielded interglacial mollusca and mammalian remains as well as implements providing evidence for the presence of early Palaeolithic man.
- Blow's Downs** (1988) TL033214; area 33.1 ha ACCESS — Public footpath
The grassland communities on the escarpment of the Lower Chalk include both unimproved calcareous grassland and more neutral types where the chalk is overlain with clay. They support a rich invertebrate fauna. The site is grazed by cattle.
- Cooper's Hill** (1951) TL028376; area 20.9 ha ACCESS — Public footpath
The best remaining example in Bedfordshire of the once more extensive heathland of the Lower Greensand. The heath has suffered from encroachment of gorse, broom and birch, but recent management intends to arrest this natural succession. There is also path erosion due to a high level of public use. Part of the site is a Local Nature Reserve.
- Deacon Hill** (1951) TL123294; area 37.6 ha ACCESS — Public footpath
A remnant of chalk downland with characteristic species rich, calcareous grassland flora. Part of the site is grazed.
- Double Arches Pit** (1986) SP936292; area 1.7 ha ACCESS — Private
This sand quarry shows the junction beds of the Lower Greensand and Gault Clay, but the key exposure is highly weathered.
- Dropshort Marsh** (1985) TL005277; area 2.4 ha ACCESS — Restricted
A series of springs rise at the junction of the porous glacial gravels with the impervious Oxford Clay giving rise to a mosaic of marsh and neutral grassland. Beds and Hunts Wildlife Trust (BHWI) Reserve — Access by permit.
- Dunstable and Whipsnade Downs** (1987) TL005205; SP998187; area 52.6 ha ACCESS — Public footpath
The west facing escarpment on the Middle Chalk supports a characteristic chalk downland flora. The site is partly grazed and remaining areas are due to be grazed from the autumn of 1989.
- Fancott Woods and Meadows** (1985) TL026276; area 12.9 ha ACCESS — Private
Unimproved neutral grassland partly surrounded by semi-natural woodland.
- Felmersham Gravel Pits** (1969) SP991584; area 21.6 ha ACCESS — Restricted/Public footpath
A series of flooded pits with tall fen communities, neutral grassland, scrub and woodland. Particularly rich in Odonata. BHWI Reserve — Access by permit.

Address: 46 Mallard Hill, Bedford MK41 7QS

- Flitwick Moor** (1951) TL045350; area 50 ha ACCESS — Restricted/Public footpath
The largest remaining valley mire in Bedfordshire with rich flora and invertebrate fauna. Maintaining a suitable water-level to retain the species interest is one problem affecting the Moor. Part of the site is a BHWT Reserve — Access by permit.
- Galley and Warden Hills** (1951) TL092265; area 47.6 ha ACCESS — Public footpath
Unimproved neutral and calcareous grassland. Part has been fenced and sheep will be introduced during 1989.
- Hanger Wood** (1988) SP995494; area 23.8 ha ACCESS — Private
Ash-maple woodland with a flora characteristic of the poorly drained soils of the boulder clay.
- Houghton Regis Marl Lakes** (1988) TL008235; area 25.6 ha ACCESS — Private
These marl lakes are an example of the rarest form of standing water in Britain and are particularly important for Odonata and ornithology.
- Kensworth Chalk Pit** (1986) TL015197; area 123.4 ha ACCESS — Private
The best Chalk Rock exposure in central England with an important diverse fossil fauna.
- King's and Baker's Wood and Heaths** (1953) SP925295; area 212.8 ha
ACCESS — Complex ownership: Private/Public footpath/BHWT Permit
The largest area of woodland in the county, with remnants of lowland heath and acidic grassland. Part of the site is a BHWT Reserve — Access by permit.
- King's Wood and Glebe Meadows** (1984) TL045403; area 40.5 ha ACCESS — Public footpath
Ash-maple woodland and unimproved neutral grassland. Local Nature Reserve.
- Knocking Hoe** (1985) TL13; area 7.7 ha ACCESS — Private
Unimproved chalk downland with characteristically rich flora. The site is also a National Nature Reserve.
- Marston Thrift** (1961) SP973417; area 32.3 ha ACCESS — Public footpath
Ash-maple woodland. Part of the wood was replanted with conifers in the 1950s and only the southern and eastern sections are within the SSSI boundary.
- Maulden Church Meadow** (1987) TL059382; area 4.2 ha ACCESS — Public footpath
Unimproved neutral grassland with field ponds. Local Nature Reserve.
- Maulden Heath** (1986) TL070386; TL068384; area 7.6 ha ACCESS — Public footpath
One of the few remaining examples of lowland acidic grassland in the county.
- Maulden Wood and Pennyfather's Hills** (1970) TL070390; area 150.3 ha
ACCESS — Public footpath
A large area of mixed deciduous and coniferous woodland with a rich invertebrate fauna.
- Nine Acres Pit** (1986) SP938277; area 20.8 ha ACCESS — Private
Important exposures of the Lower Cretaceous, particularly for the junction beds of the Lower Greensand and Gault Clay.
- Odell Great Wood** (1980) SP958590; area 85.1 ha ACCESS — Public footpath
Ash-maple woodland with a rich ground flora.
- Potton Wood** (1970) TL252502; area 87.4 ha ACCESS — Public footpath
Ash-maple woodland. Part of the woodland ride system has recently been damaged by rotivation.
- Pulloxhill Marsh** (1985) TL056335; area 5.5 ha ACCESS — Private
Springs rising at junction of glacial gravel and impervious Gault Clay give rise to a base rich marsh.
- Sandy Meadows** (1970) TL194475; area 8.9 ha ACCESS — Private/Public footpath
Two meadows, partly managed by grazing are examples of a once more extensive habitat of marshy grassland and tall fen communities.
- Sandy Warren** (1970) TL198476; area 17.0 ha ACCESS — RSPB permit
Lowland heath, birch woodland and acid grassland. Royal Society for the Protection of Birds (RSPB) Reserve, BHWT Nature Reserve.
- Smithcombe, Sharpshoe and Sundon Hills** TL063298; area 84.3 ha
ACCESS — Private/Public footpath
A stretch of unimproved chalk grassland and beech woodland extending for over 2km along

the north facing escarpment of the Lower Chalk. The most easterly section beside the A6 was recently protected from being lost in the creation of the Barton bypass.

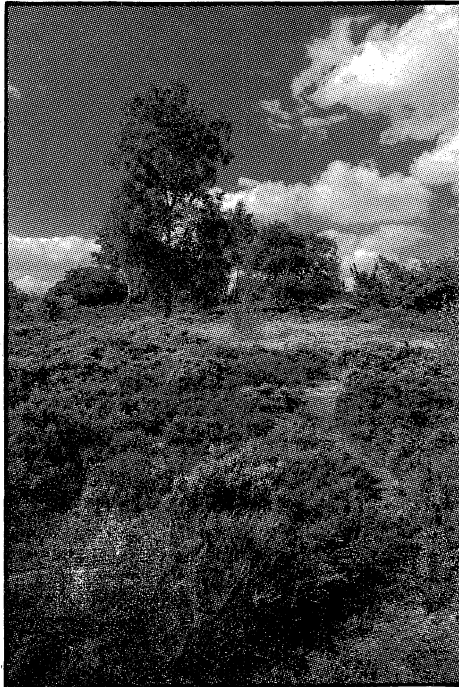
Southill Lake and Woods TL141428; area 25.4 ha ACCESS — Private
Wet valley alderwood at the junction of the Lower Greensand and Gault Clay. The lake is important ornithologically.

Stevington Marsh (1951) SP986551; area 7.1 ha ACCESS — Public footpath
One of the few remaining areas where marshes and adjacent meadow associated with the Jurassic Limestone still bear a rich flora. The site has recently been damaged by land drainage.

Sundon Chalk Quarry (1989) TL042275; area 25.8 ha ACCESS — Private
The disused chalk quarry has developed a rich variety of habitats including fen, lakes, chalk grassland and scrub. Particularly important for invertebrates.

Swineshead Wood (1970) TL061668; area 22.1 ha ACCESS — Private
Ash-maple woodland with species characteristic of an ancient woodland site.

Tebworth Marsh (1984) SP982290; area 5.5 ha ACCESS — Private
One of the largest surviving base-rich marshes in the county arising where glacial gravels overlie Gault Clay.



*Cooper's Hill. This SSSI near Ampthill is the best remaining example of heathland in the county
(Photo: Mary Sheridan)*

- Tilwick Meadow** (1988) TL073567; area 2.6 ha ACCESS — Public footpath
Unimproved neutral grassland with a rich flora, developed on chalky boulder clay and Oxford Clay.
- Totternhoe Knolls** (1951) SP979220; area 13.8 ha ACCESS — Public footpath
This rich chalk downland site is also the site of a Norman motte and bailey earthworks — a Scheduled Ancient Monument. Local Nature Reserve.
- Wavendon Heath Ponds** (1954) SP931338; area 4.9 ha ACCESS — Public footpath
A series of three artificial ponds fed by a wet flush supporting an area of acid mire, now a rare habitat in the county. There are also areas of acid grassland and birch woodland.
- Yeldon Meadows** (1988) TL010674; area 2.8 ha ACCESS — Private
Species-rich unimproved neutral grassland.

DENOTIFICATIONS

1951 — 1970 Dony's report (1960) detailed twenty-four sites that had been designated as SSSIs in the 1951 Schedule and noted that eight had already suffered in the first ten years. Five sites were denotified in the preparation of the 1970 Schedule:
Eaton Socon Water Meadows (TL1860), Great Hayes Wood (SP9661), Meppershall Hoo Pit (TL1537), Oldhill Wood, originally notified with Dedmansey Wood (TL0316) and Westoning Moor (TL0232).

1970 — 1989 A further six sites from the 1951 Schedule were denotified, together with nine sites that had been newly notified in the 1970 Schedule.

Those dating from the 1951 Schedule include:
Arlesey Brick Pit (TL1835), Dedmansey, Byslip and Fareless Woods (TL0316), Kempston Hardwick Pit (TL0344), Keysoe Park Wood (TL0562), Mundays Hill Pit (SP9428) and Rowney Warren (TL1240).

Those dating from the 1970 Schedule include:
Legrave Common (TL0624), Mossbury Manor Pond (TL1754), Oakley Railway Junction Pit (TL0252), Pinnacle Phosphate Nodule Bed (TL1749), Sewell Marsh (SP9823), Spanoak Wood (TL0667), Tingley Field Plantation (TL1330), Totternhoe Meadow (SP9821) and White Wood (TL2152).

This is a high rate of loss and the main causes are summarised below. They highlight the fact that even though SSSI status acknowledges that the sites are of the highest scientific interest in the county, they are still not given sufficient statutory protection.

The main causes of loss of SSSIs (1951 — 1989) can be summarised as:

Agricultural activities	6 sites
Forestry activities	5 sites
Activities given planning permission	2 sites
Miscellaneous	7 sites

REFERENCES

DONY, J.G. (1960) Nature Conservation in Bedfordshire. *Bedf. Nat.* **14** 19-24
 NATURE CONSERVANCY COUNCIL (1989) Report. Sites of Special Scientific Interest — Bedfordshire. December 1989

ACKNOWLEDGEMENTS

I would like to thank Mrs J. Plumridge, Assistant Regional Officer (Bedfordshire), Nature Conservancy Council, for providing information on the SSSIs.

METEOROLOGY

Report of the Recorder

The weather in 1989 will be remembered for the second successive very mild winter period, and for a long dry and warm summer to rival the best summers of this century. The year as a whole was notable for the amount of sunshine recorded, resulting in the sunniest year at Silsoe since records began in 1951. Indeed for much of Britain 1989 was outstandingly sunny, and London for example had exceeded the previous all time high by the end of October. The dryness of 1989 also resulted in water restrictions in many places in the south of England, though Bedfordshire, which is predominantly within the area of Anglian Water, largely escaped. It is also worth noting that all Bank Holiday weekends enjoyed good weather, including Easter which was nearly as early as it could be.

The first two 'winter' months of the year were predominantly mild, and no snow or sleet was recorded in January, but fell on three days near the end of February giving short-lived snow cover on the morning of the 27th. January was both dryer and sunnier than normal, while February was one of the wetter months in 1989 though still with sunshine above average. The winter period from December 1988 through to February 1989 was probably the mildest for 250 years.

Spring arrived very early with above average temperatures throughout most of March, and plant growth was well advanced. Frosts were also few in number, and both rainfall and sunshine were close to normal. April in contrast opened most unseasonably with heavy and widespread snowfall on the morning of the 5th (a so-called 'Blackthorn' winter), with frost on as many as 15 nights. April was noticeably wet with more than twice the normal rainfall and less sunshine than usual. It was thus untypical of the year as a whole. The start of May saw a distinct change to much warmer and sunnier weather with temperatures exceeding 80°F (26.7°C) on the 23rd and 24th. It was both the warmest and driest May since 1970.

June continued with many warm, dry and sunny days, and again 80°F (26.7°C) was reached or exceeded on 7 days, and yet more of the same was heralded by July, undoubtedly the best of the summer months in 1989. A temperature of 80°F (26.7°C) was reached or exceeded on 11 days, with the hottest day on the 22nd reaching 91°F (32.7°C). As often happens, the rainfall for the month was not far short of the norm, but well over half of this occurred on the night of 6th/7th accompanied by thunder and lightning. Indeed, rain fell on only some 5 or 6 days in the month, thus preserving an image of a dry summer. August continued the fine weather of the previous months, though less pronounced, and it rained on no more than 6 days. Both July and August were the sunniest months on record at Silsoe.

September continued the sequence of generally warm and pleasant days. Temperatures continued above average throughout October where unusually no airfrost was recorded at all. Rainfall was near normal falling mostly in the last two weeks. As in 1988, November proved to be one of the frostiest months of the year, particularly towards the end when temperatures of -5°C (23°F) occurred which were not to be reached again till April 1990. November 1989 was also the sunniest on record with just under half the usual rainfall. Late November was also foggy, and this weather persisted through the first week of December producing one of the foggiest spells for 30 years. December also broke the run of predominantly dry months, being the wettest month of the year and the wettest on record (281mm at Silsoe). Daytime temperatures were near normal but nights were unusually mild and relatively few frosts and no snow were recorded. Thus ended what must be one of the more unusual years of this century as far as weather is concerned. Although not the warmest summer on record (it did not beat 1976 for example), it was the sunniest with May, July, August and November all being the sunniest respectively on record, and with January, February and June well above average.

Records referred to above relate to the site at Silsoe and I am greatly indebted to Alan Hunter at AFRC Engineering, Wrest Park, Silsoe for providing detailed records and comments on the weather recorded at that site. It is thus sad to report that the weather recording instruments at this location are due to be replaced by automatic instrumentation for 1990, and the loss of personal observation will be a great loss. I have also used my own records for Barton in compiling this report.

	Mean Max °C	Mean Min °C	Highest Temp. °C	Lowest Temp. °C	Rainfall mm	Sunshine hours	Air Frost days	Ground Frost days	Snow Falling days	Snow Lying days
January	8.8	2.7	12.5	-3.6	27.9	69.6	8	17	0	0
February	9.3	1.8	13.7	-4.3	50.6	95.6	6	20	2	2
March	11.8	3.2	17.2	-2.7	39.9	102.4	3	11	3	0
April	10.1	2.9	14.1	-2.1	82.4	123.5	5	12	4	0
May	19.1	6.6	27.7	0.6	13.0	278.0	0	6	0	0
June	20.2	8.4	27.4	0.6	32.6	243.8	0	5	0	0
July	24.1	12.4	32.6	6.6	46.2	275.6	0	0	0	0
August	23.3	11.4	28.7	6.4	19.9	260.0	0	0	0	0
September	19.9	8.3	19.6	2.1	48.3	131.8	0	3	0	0
October	16.0	8.3	19.6	2.1	48.3	99.0	0	3	0	0
November	9.5	2.0	15.2	-5.5	23.0	104.0	9	17	0	0
December	7.8	3.0	13.9	-5.5	144.0	27.5	4	17	0	0
Year	15.0	6.2	32.6	-5.5	538.8	1810.4	35	105	9	2

Table 1. Summary of the weather for 1989 for IER, Silsoe

MIKE WILLIAMS

GEOLOGY AND PALAEOLOGY

Report of the Recorder

1989 proved to be an interesting year despite the initial disappointment at the failure to locate the phosphatic nodule bed in the old "coprolite" quarry north of Potton Station. Details of this were reported in last year's Report (Smart 1989), but excavations carried out by the Conservation Volunteers did not penetrate backfilled material and to proceed further would have been a major operation beyond the resources of the group. However, the quarry appears to be reasonably safe as a small nature reserve and will hopefully be listed as such under proposed guidelines being worked out by the N.C.C. I must thank Mark Powell and his fellow volunteers for their efforts at Potton during the year.

Mr Powell also drew the Recorder's attention early in the year to an outcrop of limestone near Riseley. Fossils collected by him indicated Cornbrash, and Miss Brind and myself paid a visit to the site, a ditch section, from where the specimens originated. The section, a newly cleared ditch alongside the Riseley — Swineshead road (TL 050640), was of considerable interest. The beds exposed, although limited in extent, yielded a number of well preserved fossils both from in-situ rock and from excavated material on the surface of the adjoining verge. The extreme hardness of the matrix, a buff coloured limestone, made the extraction of specimens very difficult but our combined efforts resulted in an interesting assemblage which included the lamellibranchs *Lopha marshi* (J. Sowerby), *Modiolus bipartitus* (J. Sowerby), *Pholadomya deltoidea* (J. Sowerby) and *Plagiostoma subcardiiforme* (Greppin). The brachiopods *Microthyridina lagenalis* (Schlotheim) and *Digonella siddingtonensis* (Davidson), characteristic of the Upper Cornbrash, and *Cererithyris intermedia* (J. Sowerby), *Obovothyris magnobovata* S.S. Buckman and *Kallirhynchia yaxleyensis* (Davidson), characteristic of the Lower Cornbrash, were obtained. Of particular importance was the discovery of a single ammonite, confirmed by Dr Owen of the British Museum (Natural History) as *Macrocephalites macrocephalus* (Schlotheim). This ammonite is a Zone fossil of the Upper Cornbrash and prompted the Recorder to make several return visits in the hope of obtaining a specimen of *Clydoniceras discus*, the Zone ammonite of the Lower Cornbrash, unfortunately without success.

The Kellways Beds overlying the Cornbrash consisted of light and dark coloured clays, sandy in parts, with many shell fragments, the lamellibranch *Deltoideum delta* (W. Smith) being particularly common in the clays. Many of the larger fragments and unbroken specimens of this species were also encrusted with tubes of the annelid *Genicularia vertebralis* (J. de C. Sowerby).

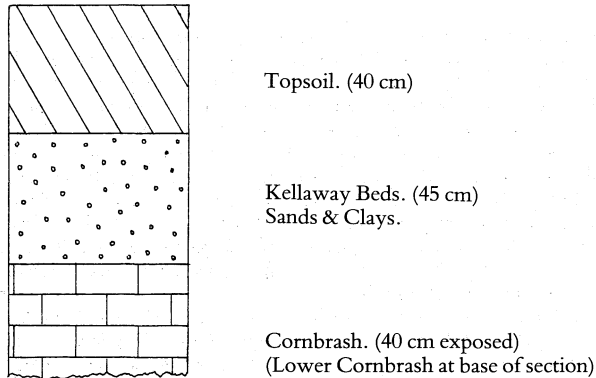


Figure. Ditch section in Jurassic strata (TL 050640) Riseley, February 1989

Two other Jurassic sections were visited by Miss Brind and myself during the year. Firstly, sand clearance in the Lower Greensand quarry at Cox Hill, Sandy (TL 178496) exposed a mass of dark blue clay. This was investigated and a number of fossils were obtained including *Gryphaea dilatata* J. Sowerby and the small belemnite *Hibolites* sp. cf. *hastatus*. Similar fauna were obtained from the abandoned Sandy brickworks approximately half a mile to the north of Cox Hill in 1957 (Smart 1959) which exposed the Corallian Beds (Amphill Clay) in an overgrown section. Secondly, excavated Jurassic clays and limestones were studied at the extension to Amphill Sewage Works (TL 037365). A number of ammonites were among the specimens collected, but the material searched consisted of both the underlying "solid" beds (Oxford Clay) and the overlying Boulder Clay mixed together on the spoil heaps. At the time of our visit it was not possible to approach the in-situ strata visible in the excavation due to engineering work but both these exposures, among other Jurassic sections in the county, later became included in an eight month study by Dr Kevin Page, attached to Bedford Museum to explore the geological potential and the fossil content of Bedfordshire and Bedford Museum. His results will, where appropriate, be incorporated into future Annual Reports.

With regard to the Cretaceous, two events are notable. One of these, the construction of the Barton by-pass, will have been observed by many members driving along the A6 trunk road. Details of the route were very kindly given to me by Mr M.C. Gwilliam and Miss Alison Day, of Bedfordshire County Council. Of particular interest was the proposal to re-open the abandoned Barton Lime Works quarry for construction material, as in the late 1950s large, well preserved ammonites of the genus *Parapuzosia* (*Austinceras*) occurred in the Totternhoe Stone exposed at the base of the southern face of the pit. Following correspondence and discussions with the contractors, consent was granted for frequent visits in order to watch for these ammonites, should they be encountered.

Unfortunately, plans to open up the old quarry had to be changed due to, among other problems, the presence of methane — the quarry having been used for some years as a rubbish tip. A "borrow pit" was therefore commenced at the south-east end of Barton Cutting (TL 076288) and weekly inspections made as the excavation proceeded northwards. However, as this work remains in progress with strata being available for study well into 1990, a single report on the section will be prepared for next year's journal. It can be recorded, however, that one large specimen of *Parapuzosia* (*Austinceras*) *austeni* (Sharpe) was obtained in September from the Totternhoe Stone.

The other noteworthy occurrence was the discovery by the Recorder of an isolated lower jaw tooth of the Lower Cretaceous Hexanchid shark *Notidanodon lanceolatus* Woodward from the Lower Gault of Leighton Buzzard. A description of this has been published separately.

In addition to the foregoing, regular visits were made to the Leighton Buzzard quarries for the purpose of studying the Shenley Limestone. Very little is at present exposed in the well documented areas but I am very pleased to report that consent was granted for a supervised visit to Bucklands quarry, on the western side of Shenley Hill. Previous requests had coincided with overburden

removal which, combined with poor conditions, had forced postponement several times. In November, however, an exposure of limestone could be seen from the road skirting the quarry and a request to visit was very kindly granted. Examination of the bed proved to be most interesting. Large lenticles of Shenley Limestone cropped out in the junction bed between the sands and overlying Gault, extending due east for nearly fifty metres. Many of the lenticles were relatively unfossiliferous but some contained fossils and, after an hour or so of work, a selection of the most promising blocks was made and removed for subsequent investigation under less dangerous conditions. The in-situ rock, balanced on a narrow ledge with a vertical drop of fifteen metres immediately below, could not be worked on with safety other than by levering the smaller pieces over the edge. A return visit has been provisionally agreed for early 1990, so it is to be hoped that a comprehensive assemblage of Shenley Limestone fossils can be obtained from a hitherto unrecorded area of the "Mundays Hill Knoll".

Although extraction work on the lenticles is still in progress, brachiopods recorded to date from Bucklands Quarry include *Burrirhynchia leightonensis* (Walker), *Cyclothyris antidichotoma* (Buvignier), *Cyclothyris levis* sp. nov., *Rectithyris shenleyensis* (Walker), *Boubeithyris boubei* (d'Archiac) and *Platythyris capillata* (d'Archiac).

During the course of the year occasional visits were made to other exposures of Cretaceous strata. The Cambridge Greensand at Arlesey yielded an isolated tooth of the shark *Cretolamna appendiculata* (Agassiz). It is many years since this quarry was visited, as London Brick refused consent in the early 1960s. Prior to this, when LBC did agree, several studies were made of the exposed beds — Gault, Cambridge Greensand and Lower Chalk (Chalk Marl) — and this sequence is still visible today, although much overgrown, in an unworked part of the old quarry. I am most grateful to Mr Norton, Manager of the Butterley Brick Company at Arlesey, for consent to re-visit after a lapse of nearly thirty years.

The Lower Chalk at Totternhoe was also investigated with a view to confirming that the Totternhoe Stone is still visible and to thoroughly search the quarry for evidence of the large *Parapuzosia* ammonites recorded at Barton. One fragmentary, crushed specimen was observed and the weathered surface of the chalk revealed several poorly preserved lamellibranchs including *Pycnodonte vesicularis* (Lamarck) and *Inoceramus crippi* Mantell. A return visit was also made to the large Steeley quarry at Woburn Sands, first visited in 1988, in order to obtain various clay samples from beds in the Lower Greensand above the Fuller's Earth horizon for microscopic examination.

ACKNOWLEDGEMENTS

I should like to thank Dr H.G. Owen, F.G.S., Dr C.H.C. Brunton, Dr P. Forey and Miss Alison Longbottom of the Dept. of Palaeontology, British Museum (Natural History) for identifying various specimens and for helpful comments. Mr M.C. Gwilliam and Miss Alison Day, Bedfordshire County Council Planning Dept., for information relating to Barton by-pass, and to the following for allowing me access to the various exposures:- Messrs Joseph Arnold and Sons Ltd., Billington Road, Leighton Buzzard; Mr R. A. Bates and Mr B. Rogers, Totternhoe Lime and Stone Co. Ltd., Totternhoe; Mr R. T. Chappell, ARC Buckland Industrial Minerals, Heath and Reach, Leighton Buzzard; ECC Quarries Ltd., (George Garside), 39 Hockliffe Street, Leighton Buzzard; Mr H.W. Felce, Riseley Lodge Farm, Riseley; Mr A. Hawkins, Resident Engineer, Amphill Sewage Works Site, Amphill; Mr J. Hill, Steeley Minerals Ltd., Woburn Sands; Mr J. McLuckie and Mr A. Price, Shanks and McEwan Ltd., Barton-le-Clay; Mr P. Norton, Butterley Brick Co., Arlesey; Mr F.R. Walpole and Mr R.J. Saunders, L.B. Silica Sand Ltd. Grovebury Road, Leighton Buzzard, and their staff who are always most helpful.

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P.J. SMART

**NOTIDANODON LANCEOLATUS Woodward, A LOWER
CRETACEOUS COMB-TOOTHED SHARK
FROM SHENLEY HILL, LEIGHTON BUZZARD**

by P.J. Smart

Vertebrate remains are relatively uncommon in the Lower, Middle and Upper Albian strata of Shenley Hill, the fossils that do occasionally occur in the Lower Greensand and Gault being predominantly teeth of fishes. Detached vertebrae are sometimes found in the nodule beds, often embedded in small phosphatic nodules. Teeth, however, are generally distributed throughout the clays and, of these, by far the greater proportion are teeth of Chondrichthyes (Cartilaginous fish) which includes, in the sub-class Selachii, the sharks, dogfish, skates and rays.

The relatively greater numbers of Selachii teeth compared with other remains, the latter in any case being mainly isolated vertebrae of genera belonging to the Osteichthyes (Bony fish), is due to the continual shedding of teeth during life — old teeth being constantly replaced. A single shark can, therefore, discard several hundreds of teeth during its lifetime, this being the explanation as to why the great majority of such teeth are discovered as isolated fossils. All teeth found by the Author have been such isolated specimens, and include teeth of the sharks *Cretolamna appendiculata* (Agassiz), *Scapanorhynchus* sp. and *Isurus* sp.

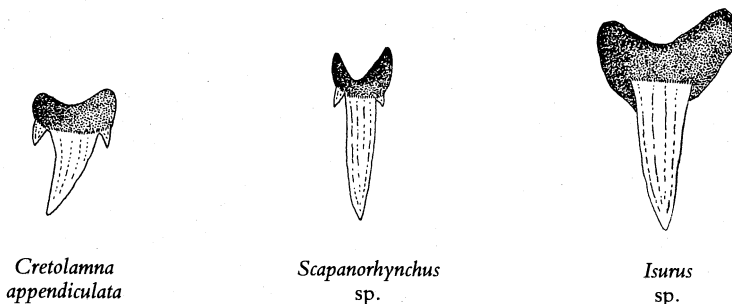


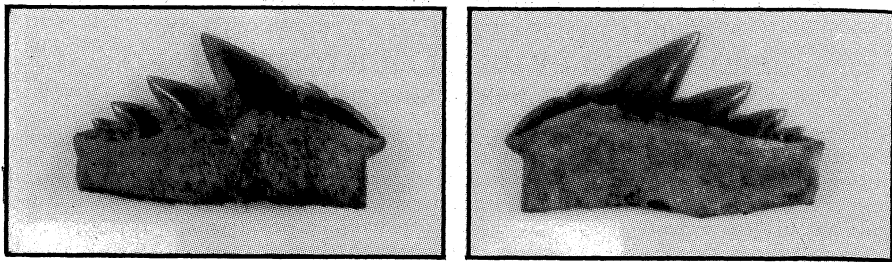
Figure 1. Sharks' teeth

Lamna, *Scapanorhynchus* and *Isurus* teeth are generally characterised by a prominent V-shaped root and a single stout, triangular and very sharp cusp. These cusps are more or less curved, depending on the position in the jaw, and in the former two genera are flanked by one or two small accessory cusps at the base. Teeth of *Isurus* sp. normally lack these accessory cones, the triangular structure being considerably larger and stouter. Typical teeth of these three genera, drawn from specimens in the Author's collection, are illustrated in Figure 1.

Teeth and bones being of such general rarity, it was with considerable excitement that, in September 1989, an isolated tooth of the Lower Cretaceous Comb-toothed (Hexanchid) Shark *Notidanodon lanceolatus* Woodward was discovered by the Author approximately 2.5 metres above the base of the Lower Gault in Mundays Hill quarry (SP 936279). Only on one previous occasion had a Hexanchid shark tooth been found by the Author in Cretaceous strata, and this was discovered in the Cambridge Greensand bed at Arlesey Brick Works in 1954. That specimen, incomplete and rather badly worn, was determined as the Upper Cretaceous (Lower Chalk) species *Hexanchus* (*Notidanus*) *microdon* (Agassiz) after extensive comparisons with Type specimens (C.J. Stubblefield F.R.S. 1954 — personal communication) and was subsequently donated to the Geological Museum in South Kensington.

Comb-toothed sharks first appeared during the Jurassic period, from which there are fairly numerous records (Beaumont 1960), and are now represented by three present day genera (four

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Notidanodon lanceolatus Woodward. Lower jaw tooth of a Lower Cretaceous (Lower Gault) Hexanchid shark (x 3.75). P.J. Smart coll. 14922 M

species). They are rather primitive sharks of which relatively little is known regarding their life history. They inhabit deep water but one species, *Hexanchus griseus*, ventures inshore more than any other deep-sea shark and is recorded as reaching 4.9 metres in length (Wheeler 1985).

Despite the relatively numerous records from the Jurassic the succeeding Cretaceous is remarkable for their extreme rarity, particularly in Lower Cretaceous deposits, and all records have been of isolated teeth. Two Lower Cretaceous species have been described — *Notorhynchus aptiensis* Pictet from the Aptian of France and *Notidanodon lanceolatus* Woodward from the Middle Albian Gault Clay, while the Upper Cretaceous species are *Hexanchus gracilis* (Davis) from the Lebanon and *Hexanchus (Notidanus) microdon* (Agassiz) from the Chalk and Cambridge Greensand (Woodward 1911). Two other species from the Upper Cretaceous are discussed by Ward and Thies (1987) — *Notidanodon pectinatus* (Agassiz) from the Upper Chalk of Sussex, and *Notidanodon dentatus* Woodward from the Upper Cretaceous of North America, New Zealand and Europe.

Investigations following the discovery of the tooth confirmed the suspected true importance of the Leighton Buzzard specimen. It is, in fact, only the second tooth of *Notidanodon lanceolatus* to be recorded from the Gault Clay of England — the first specimen, the Holotype, being described by Woodward under the synonym *Notidanus lanceolatus* in 1886. This original published description was based on a single isolated tooth from the Gault Clay, locality details not recorded but possibly Folkestone, the "Type locality" for many 19th Century Gault Clay collections. One other English tooth of this species is known to exist, this being discovered in the Speeton Clay Formation (Upper Hauterivian) of Speeton, Yorkshire, a much earlier horizon than the Middle Albian.

Ward and Thies (1987) describe several isolated teeth of *Notidanodon lanceolatus*, all but the two mentioned above being from the Lower Cretaceous of Germany. The two English specimens described are BM(NH) P 57835 from the Upper Hauterivian Speeton Clay formation and BM(NH) P 1227 — the Holotype — from the Middle Albian Gault Clay. The species is restricted to the Lower Cretaceous of England and Germany, the oldest record being from the Lower Hauterivian of Northern Germany and the youngest, the Holotype, from the Albian Gault Clay of England.

DESCRIPTIONS OF THE ENGLISH GAULT SPECIMENS

1. BM(NH) P 1227 (The Holotype)

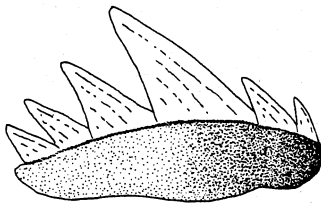
Originally described as *Notidanus lanceolatus*. Woodward, in his description, does not apply the dental formula as developed much later and used by Applegate (1965), Compagno (1970), Ward (1979) and Ward and Thies (1987). His description is basically a comparison with *Notidanus microdon*. He describes it as being much larger than the corresponding tooth of *N. microdon*, the most conspicuous feature being the comparatively long and narrow form of the cones (cusps). The principal cone (cusp) is relatively prominent, and is preceded by two very long denticles (mesial cusplets). There are three secondary cones (distal cusplets) and the crown terminates in a minute denticulation, (Figure 2a).

At some time during the 103 years since first described the two "very long denticles" of Woodward (the two mesial cusplets) have been broken off and lost, although their positions are still discernable (Figure 2b). However, Woodward's original woodcut illustration of the Holotype shows the complete specimen as an upper jaw tooth, a position questioned later on the evidence of a mesial depression and wedge shape of the root suggesting a correct placing in the lower jaw (Ward and Thies 1987).

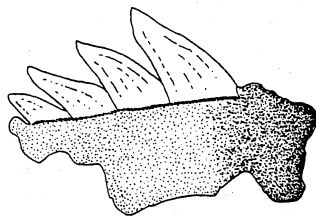
2. P.J. Smart Coll. 14922M

An isolated tooth from the Middle Albian Gault Clay (Lower Gault), Munday's Hill quarry, Shenley Hill, Leighton Buzzard (SP936279), *Hoplites dentatus* Zone, approximately 2.5 metres above the base of the Lower Gault. The tooth is complete. It bears a distally directed principal cusp, two mesial cusplets (one being rudimentary) and three distal cusplets (Figure 2c). The principal cusp and the three distal cusplets decrease evenly in size in a distal direction. The mesial cutting edge of the principal cusp is without serrations, the apical portion being very slightly concave, the distal edge slightly convex. The root is rectangular, deep mesially with mesial depression. I would place the tooth in the lower jaw on the evidence of the depth of the root — greater than the height of the cusps both mesially and distally and more perfectly rectangular than the Holotype.

- (a) BM(NH) P.1227.
Profile of Holotype (from woodcut illustration, Woodward 1886)



- (b) BM(NH) P.1227.
Profile of Holotype (from photograph illustration, Ward and Thies 1987)



- (c) PJS coll. 14922 M.
Profile of Leighton Buzzard specimen (Lower Gault, Munday's Hill quarry) 1989

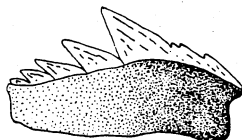


Figure 2. *Notidanodon lanceolatus* Woodward. The English specimens. (All figures 3x natural size).

Specimen	BM(NH) P.1227 The Holotype	P.J. Smart Coll. 14922 M
Length (mm)	13.6	10.1
Height (mm)	10.2	8.6
Mesial cusps (No.)	2 (now missing)	2 (one rudimentary)
Distal cusps (No.)	3	3

Table. Dimensions of Notidanodon lanceolatus tooth specimens

The extreme rarity of Hexanchid sharks during the Lower Cretaceous is difficult to explain, particularly when one considers the relatively large numbers of isolated teeth belonging to other genera, and this rarity raises some interesting questions. A partial answer could be based on the prey of *Notidanodon lanceolatus* and it has been established that *Notidanodon* teeth have been found in association with plesiosaur bones. In fact, of the few teeth known, most were discovered under these conditions (D.J. Ward., 1989 — personal communication). Plesiosaurs were exceedingly common during the Jurassic period, many deposits, for example the Lias, yielding bones in prodigious numbers. These reptiles were subsequently less common during the Cretaceous but, nevertheless, were represented by various genera until the end of the Mesozoic.

Despite this, however, no plesiosaur bones have been recorded by the Author from the Leighton Buzzard Gault Clay and Lower Greensand, the reptilia being represented, very rarely, by disarticulated vertebrae of ichthyosaurs. In this respect, such a rarity of plesiosaurs could contribute to the extreme rarity of *Notidanodon lanceolatus* in Lower Cretaceous seas if, as indicated by the association of teeth and bones, *Notidanodon* preyed on plesiosaurs either as a hunter or a scavenger.

ACKNOWLEDGEMENTS

I would like to thank Dr David Ward for confirming the specimen as *Notidanodon lanceolatus* and for much valuable information relating to the Neoselachii; Dr. Peter Forey and Miss Alison Longbottom of the Dept. of Palaeontology, British Museum (Natural History), and Dr. Marcia Edwards, Assistant Director of Science, Zoological Society of London, for information on the various genera; Miss Rosemary Brind of Bedford Museum, for undertaking the photography and ECC Quarries Ltd., (George Garside), 39 Hockliffe Street, Leighton Buzzard, for allowing me access to Munday's Hill Quarry.

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DAUBENTON'S BAT AT STOCKGROVE COUNTRY PARK ROOST by Joan Childs and Tony Aldhous

On 21 June 1988, a bat roost was located in an oak tree in Stockgrove Country Park, TL916289. The bats were initially found by chatter coming from a hole in the tree during the day. The access hole of the roost was approximately 10cm in diameter, 4 metres from the ground and faced north. A tar-like stain issued from the hole to the base of the tree.

At dusk on the same day, two bats were caught (under licence from the NCC) using a static hand net as they emerged from the roost. The bats were identified as Daubenton's Bats *Myotis daubentoni* making the site the only confirmed roost of this species in Bedfordshire. Both of the bats caught were lactating females, indicating that it was a nursery colony.

Counts were made weekly during the summer months of 1988 and 1989. The data recorded are shown in the Table.

Year	Date	First emergence (GMT)	Total number of bats	Weather
1988	27 June	c20:40	45	overcast, rain
	4 July	20:50	41	overcast, rain
	11 July	20:37	45	clear, dry, warm
	18 July	c20:15	52	clear, dry, warm
	25 July	20:29	27	overcast, cool, windy
	29 July	—	0	overcast, dry
	1 August	—	0	overcast, mild
1989	8 April	—	0	clear, mild
	19 April	—	0	overcast
	1 May	—	0	clear, mild
	15 May	21.18	11	clear, warm
	29 May	—	0	clear, mild
	5 June	—	0	rain
	12 June	—	0	dry, bright, warm
	19 June	—	0	hot, dry
	26 June	—	0	overcast, dry, warm
	3 July	—	0	clear, warm
	10 July	—	0	clear, warm
	17 July	—	0	clear, warm

Table. Emergence data of Daubenton's Bat from roost

DISCUSSION — 1988

The first bats seen at the roost site at dusk often came to the roost, not from it, indicating that there was at least one other roost site being used in the area. On some occasions the visiting bat entered the roost, showing that there was transfer between the roosts. After the initial emergence, bats could be seen returning to and entering the tree hole. Whether these bats were from another roost or going back to feed their babies was not clear. Grey, juvenile bats could often be seen just inside the entrance hole. Sometimes bats could be seen flying repeatedly up to the hole before encouraging out a second bat, presumably their young.

On 18 July Alan Woodgate, the warden of the park, gave us a dead bat found below the roost. This was identified as a juvenile Daubenton's Bat. On 22 July two more dead juveniles were found, one at the base of the tree and one stuck in the entrance hole. Whether the deaths were caused by the poor

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Daubenton's Bat Myotis daubentonii

(Joan Childs)

weather and therefore reduced feeding opportunities or whether this was a natural 'weeding out' of the weak bats is uncertain.

After this date the number of resident bats declined. By 29 July no further bats were seen in the roost and the stain on the outside of the tree began to dry up. It may have been time for the bats to move on or the deaths may have been indicative of a problem in the roost. The fact that there was a stain on the outside of the tree may suggest that rain could have been seeping into the roost and washing out the droppings.

DISCUSSION — 1989

Between 8 April and 17 July bats were recorded in residence on only one occasion, 15 May, when 11 bats were counted emerging. Whether bats failed to use the tree as a maternity roost during this year because of the deaths in 1988 or for some other reason is unclear. The bats obviously have a number of alternative roost sites from which to choose.

DAUBENTON'S BATS IN THE PARK

Daubenton's bats, identified from their characteristic low flight over water and rapid echolocation pulses on the bat detector, were seen throughout the summers of 1988 and 1989 feeding over the lake in the park. This indicates that the bats were probably roosting nearby even when the oak tree was not occupied, particularly as the bats were frequently seen early in the evening.

OTHER BAT SPECIES

Pipistrelle bats (identified by flight pattern and sound on the bat detector) were frequently seen and heard around the lake and in the car park. One or two Noctules were sometimes heard and seen over the lake (identified by large size, high flight path and loud 'chip shop' calls on the bat detector). On 17 July 1989 a Brown Long-eared Bat colony was found in a hole in another oak tree near the lake. Identification of this species was confirmed since they could be seen clearly peeping out of the hole.

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MAMMALS

Report of the Recorder

1989 was a year of good weather, with mild winters and a hot and dry summer. These conditions may not have been as good for mammals as would be expected. The tree seed crop was good, which is important for many small mammals as well as several larger ones. For the year, 32 mammal species were reported, an improvement of three on the previous year. With confirmed records for Otter, this species has been returned to the county list for the first time since 1972 which is very good news indeed. It is to be hoped the records can be repeated in the future years. A loss from the species list was again the Fat Dormouse, now without records for two years. The mild winters and good seed crop will help this species, so it is to be hoped its population will increase. Of the 32 species recorded, 17 species were up from 1988 and 14 species down, with only one species being the same. A noticeable increase in records was obtained for the Muntjac giving it a very good year, perhaps benefiting from the mild winters not only by adults but also young which can be born at any time throughout the year. The most noticeable decrease in records was for the Brown Rat, down from 18 tetrad sites last year to only 8 in 1989.

New 10km square records which are passed onto the National Mapping Scheme only numbered seven, but it shows that new information is still coming to light even if at a very much reduced rate these days.

Hedgehogs were seen about and active in January and February but then not seen again until April when several different sites had active animals. At the end of the year records tailed off from October but three different sites recorded Hedgehogs about on the 10th and 14th of December. Bats were seen flying from the 1st January only to the 11th November.

Small mammal trapping was reported from 311 trap nights, a higher than usual number. However, catch results were very low which seemed to be similar for all species. Trap sessions in three gardens produced catches of Wood Mouse, Bank Vole, Common Shrew and Harvest Mouse while trapping at a much larger Nature Reserve site only produced records for Wood Mouse, Bank Vole and Common Shrew. This shows that size is not that important for small mammals, but good cover and a range of habitat types is important — and how much there is in our gardens if we look for it.

The mammal species recorded in Bedfordshire, as well as some not recorded in the county, are listed below. The three numbers after each species name are the number of tetrads in which that species was recorded in 1970 — 1985, the year 1988 and the year 1989. Where information has been supplied that is not for confirmed records this is not included in the tetrad count and only reported under each species section as a 'non-confirmed' comment.

Wallaby *Macropus rufogriseus* 1-0-0. No records obtained.

Hedgehog *Erinaceus europaeus* 239-25-27. The animal reported in Luton (TL02R) up to 30th December 1988 continued to be seen and to take food until 20th January 1989. It then hibernated until 6th April (BC). Another animal was seen awake at Whipsnade Zoo (TL01D) on the 7th February (CT). Early spring dates for active Hedgehogs were 2nd April, 19th April and 25th April. There were several reports of summer mating and young animals about. Last sightings were from two different sites in Luton (TL02R & TL02X), both on the 14th December.

Mole *Talpa europaea* 299-25-56. Good numbers of fresh molehills reported but also a high number of dead animals found. This latter may be the result of the hot, dry summer making food hard to catch. A blank spot on the Mole distribution map, coinciding with the Marston Vale brick pit area, was thoroughly checked by P. Madgett. He found Moles in every previously blank tetrad, but did report them as at very low numbers due, he thinks, to the poor soil quality. B. Clutton reported the loss of previously active Mole sites at Flitwick (TL03H), Luton (TL02L & TL02M) and Barton (TL03V) due to house and road building.

- Common Shrew** *Sorex araneus* 167-8-12. Site records, often from dead animals, were up on the previous year but trapping results were down at a quarter of the 1988 result. At Priory Park, Bedford (TL04U) one albino was seen, while another normal coloured animal was seen eating spilt fishing maggots (GD).
- Pygmy Shrew** *Sorex minutus* 68-2-1. Only one animal seen all year from a trapping programme at Toddington (TL02E) but it was a new site for the species (AG).
- Water Shrew** *Neomys fodiens* 31-2-1. Again only one record for the year, unfortunately from a 'mouse trap' set in an outside shed of a house at Old Warden (TL14H).
- Barbastelle Bat** *Barbastella barbastella* 1-0-0. Another year with no records for this species.
- Daubenton's Bat** *Myotis daubentoni* 6-1-2. Confirmed record of 11 leaving a tree roost in May at Stockgrove Park (SP92E) but site not used again during summer (JC). Sight records at 12 other locations but a count of 70 along the river at Tempsford (TL15S) in August is the largest number seen (JC AA). At Priory Park, Bedford (TL04U) one seen on 1st January but no other sightings until 13th May for this species. The highest number recorded was five on 25th September but two were seen on 11th November, the latest date for the year (GD).
- Common Long-eared Bat** *Plecotus auritus* 18-12-9. Confirmed records from four roost sites and unconfirmed records from 11 other sites.
- Natterer's Bat** *Myotis nattereri* 4-1-4. On 18th February hibernating bats of this species found at two sites with air temperatures of +5°C. No other bat species present, nor any bats at three other sites. Generally warm winter allows hibernation in 'cold' sites such as tree holes. Records in May from two church porch locations at Westoning (TL03G) and Pertenhall (TL06X). Also seen at other church and river sites.
- Noctule Bat** *Nyctalus noctula* 4-0-3. A Noctule Bat with a damaged wing was found at Luton Airport in September (TL12A). The first Noctule Bat seen at Priory Park, Bedford (TL04U) was on 26th March, with frequent sighting during the summer, but never more than three in any evening. However nine were seen at Longholme Lake, Bedford (TL04U) in June (GD). Other sight observations were for small numbers at any one location.
- Pipistrelle Bat** *Pipistrellus pipistrellus* 41-18-24. A large number of confirmed records but most from injured, single animals rather than active roosts. This is not the usual position and suggests problems with both youngsters and adults. The two roosts checked only produced counts of 11 bats at Haynes (TL04V) and 35 at Salford (SP93J), again very low numbers compared to previous years. However, Priory Park had its first Pipistrelle on 26th March, or rather six of them, and then varying evening counts of from 1 to 250 through to 11th November. Most evening counts were for small numbers of under five bats, this being exceeded only on 11 occasions. Pipistrelle use of the bat boxes at Priory Park increased with six boxes used during the summer period. One box held five bats when checked in August. There was a distinct preference for some boxes, these being used far more frequently than others (GD). A very large number of flight and other unconfirmed records, but apart from two roost sites, always in very low numbers. The roosts produced counts of 150+ at Bedford (TL04U) and 131+ at Woburn Sands (SP93H). The general lack of bat numbers during a hot summer that would seem to be the preferred conditions for bats was commented on by several members. Overall it would seem to have been a poor summer for bats.
- Whiskered Bat** *Myotis mystacinus* 0-0-0. Bats of this species or Brandt's Bats were found roosting at Old Warden tunnel (TL14C) on two dates in April. Described as 'many' flying in tunnel and out of end (JC,AA).
- Rabbit** *Oryctolagus cuniculus* 342-49-53. Plenty of records from all parts of the county. 20 together in a field adjoining woodland at Woburn (SP93V) were the most seen at one time (DA). Myxomatosis still reported as present. A site in the centre of Bedford (TL04P) had Rabbits on it in June but was then cleared for engineering work with the consequent loss of Rabbit use (SA).
- Brown Hare** *Lepus capensis* 243-35-27. Considerably lower number of records than in 1988, although some observers reported good numbers from a few sites. Groups of 8, 10 and 19 Hares together were seen in March, October and April respectively. All other records were for small groups of ones and twos.



Bank Vole Clethrionomys glareolus. School Plantation, Maulden Wood

(Photo: Derek Rands)

- Dormouse** *Muscardinus avellanarius* 3-0-0. No records obtained for the year. A batch of 70 Dormouse boxes have been purchased which will be set out in known Dormouse woods in the south of the county. Phil Richardson, the Northants Mammal Recorder, reports that Dormice have been rediscovered recently in woods in the north of that county, so there seems no reason why they should not also be present in the north of Bedfordshire.
- Fat Dormouse** *Glis glis* 4-0-0. For the second year running there was no record from Whipsnade, although Cliff Tack reports he thinks it is still present. The species is present in good numbers not far away in Bucks.
- Bank Vole** *Clethrionomys glareolus* 109-5-12. Caught in small mammal trapping sessions at Bromham (TL05F) and Sharpenhoe (TL03Q) but only five animals from 311 trap nights to give very low catch rate results. A nest with young found at Whipsnade Zoo (TL01D) in July (CT).
- Short-tailed Vole** *Microtus agrestis* 158-7-5. Fewer records than for previous species. Only one animal caught from all the trapping sessions: that was at Toddington (TL02E) so again the catch result was very low. A nest with young was found at Priory Park, Bedford (TL04U) in July (GD).
- Water Vole** *Arvicola terrestris* 85-6-3. Only seven sightings from three sites for this species for the whole year. Of those all but one was for the R. Lea at Luton (TL02S & TL02W), with the other site being a single animal at Flitwick Moor (TL03M) in March (MW). Overall a poor year again.
- Harvest Mouse** *Micromys minutus* 280-2-4. Two caught in trapping session at Flitwick (TL03M) and three at Toddington (TL02E). A most interesting record was for a live animal disturbed in ivy in a garden in Blunham (TL15K). There had been no sign of this species being present in the garden before the sighting (JS).
- House Mouse** *Mus musculus* 79-1-5. An unusually large number of records but all from sites other than houses. In Luton (TL02U) from an office block, in Biggleswade (TL14X & TL24C)

- from a garden shed and farm building, and in Whipsnade Zoo (TL01D & SP91Y) animal enclosures. The latter site included a report of the species being very common (CT).
- Yellow-necked Mouse** *Apodemus flavicollis* 3-2-1. The only record was for a dead animal found at the Priory Park, Bedford (TL04U) site that was first recorded last year.
- Wood Mouse** *Apodemus sylvaticus* 172-13-10. A total of 19 caught in 311 trap nights from sessions at Bromham (TL05F) and Sharpenhoe (TL03Q) to give an above average catch result. A nest with young found at Priory Park, Bedford (TL04U) in October. Wood Mice caught at Priory Park ranged in weight from 13 to 20 gm and in both cases they were males. Females ranged from 13.5 to 17 gm (GD).
- Brown Rat** *Rattus norvegicus* 208-18-8. All records were for live animals which, together with lack of comments about large numbers, would suggest the population was smaller than usual.
- Grey Squirrel** *Sciurus carolinensis* 198-33-24. Almost all records were for single animals. Report for Chicksands Wood (TL14A) by D. Parsons stated only a few seen all year, which together suggests a lower than average population. One black colour phase animal seen at Milton Bryan (SP93Q) but this was the only example reported for the year. One Squirrel was seen in a wheatfield at Hockliffe (SP92T) with the question of whether it was eating grain (BC).
- Fox** *Vulpes vulpes* 197-35-36. Numbers at high level reported from all parts of county. Three cubs seen with single adult at Colmworth (TL15E) in June (JC AA) and four cubs seen playing in Chicksands Wood (TL03Z) in April (DP JA). Foxes seen twice by people Badger watching in April when Foxes often take over use of setts. A Fox was seen near the centre of Bedford (TL04P) in August, reported as carrying a kebab. Outside Luton at Bramingham Wood (TL02S) a Fox was seen in December for the first record from this site for the year.
- Badger** *Meles meles* 99-39-36. Results from checking setts and from evening watches show a reduction in Badger numbers to the lowest levels for four years. The number of active setts is up on previous years but the average number of Badgers living in each sett is down. However, the number of cubs in each active sett is the same as the number of adults, which is a higher proportion than usual, suggesting that it was a good breeding year. The hot, dry summer would not be good for Badger feeding as the main food item is the earthworm and they live deeper in the soil in times of dry conditions. Badgers killed on the roads were known to be 22, which is the highest number for the last four years. These road deaths were in the January—May period and September. At Badger watches the most seen on any one evening was four animals at Houghton Conquest (TL04K). Other watches only produced sightings of ones and twos. Hertfordshire had sightings of cubs very early in the year, probably from late breeding in 1988, but this was not reported for Bedfordshire.
- Ferret** *Mustela furo* 13-0-0. No sightings of this feral species since 1987.
- Mink** *Mustela vison* 20-4-5. All records from north of county along the River Ouse. In Bedford (TL04P) two reports of a single Mink at County Hall swimming in the river and on the land investigating young Swans (BS SA). At Priory Park, Bedford (TL04U) a total of 11 Mink were seen during the year, of which four were trapped (GD).
- Otter** *Lutra lutra* 1-0-2. A spectacular year and it is to be hoped a turning point for this species. Two site records of spraints, but no sightings, were confirmed by the RSNC Otter Project Officer. Spraints were found over a three month period. These records could well be from only a single animal and probably not resident in the area but visiting or passing through. However, it is a very encouraging change in Otter status. Previous records for this species are limited to only one sighting in 1971 and one in 1972 with nothing at all since that time except the unconfirmed sightings noted in last year's report (*Bedf. Nat.* 43 25-30).
- Stoat** *Mustela erminea* 149-17-14. Reports of animals with what was thought to be Short-tailed Vole prey (BC), stalking Rabbits (PT) and entering the Prairie Marmots burrows in Whipsnade Zoo (CT). Also seen playing with a pigeon's wing for five minutes (DP) and generally playing for 10 minutes (GH MH).
- Weasel** *Mustela nivalis* 145-17-10. Although numbers for both Stoat and Weasel are down on 1987 and 1988 the relationship between the two species stayed the same, with more records for the Stoat. On two occasions two Weasels were seen fighting together (GD) whereas all the Stoat records were for single animals. A single Weasel was seen in a built up area of Dunstable (TL02G) running along the grass verge; a most unusual location.

- Chinese Water Deer** *Hydropotes inermis* 24-5-5. The same number of records as for the previous year which was in turn a record high, so 1989 was another good year for this species. All records for single animals in the usual area of the county, although two sites were new locations which were adjacent to previous ones.
- Fallow Deer** *Dama dama* 16-1-5. An increase in geographic distribution to both the north at Woburn (SP93K) and to the south (TL11J). At this latter location at East Hyde six deer were seen, confirming for the first time their presence after many years of tracks and reports. The deer almost certainly come from St Paul's Walden area in Hertfordshire and are visiting rather than resident. The deer seen at Woburn were for three together and also close by, at SP93W, for a female and fawn (JA).
- Muntjac Deer** *Muntiacus reevesi* 136-23-38. Records from all over the county in high numbers. With 38 tetrad records it is the third highest reported species, outnumbered only by Mole and Rabbit. In the 1970-85 list Muntjac ranked 14, suggesting it has moved up the order even in the four years since that time. Records of many animals seen in the same site vary up to 15 at Chicksands Wood (TL03Z) in March. Young animals seen at Ickwell (TL14N) in June (GD), Chicksands Wood (TL03Z) in July (DP) and Sandy (TL14Z) in November (JC) all for single youngsters. A record of an animal on an island at Felmersham Nature Reserve (SP95Z) suggests they will cross water when necessary.
- Red Deer** *Cervus elaphus* 6-2-1. Only one record for the Woburn area group this year, but for six animals (SP93X). The deer were only seen in late January and again in early February (JA). Where are they for the rest of the year? Northamptonshire report they get a few Red Deer in the north of their county on a regular basis but they are too far away to expect to see them visit into Bedfordshire.
- Roe Deer** *Capreolus capreolus* 0-0-0. No records or possible sightings of this species. The BHWT report that a Roe Deer was seen near Ramsey in Huntingdon during the summer of 1989, this being their first report since 1987. From Hertfordshire comes a report that they have Red, Fallow, Muntjac and Chinese Water Deer but no Roe Deer, which contradicts the information supplied last year. Whatever the state of Roe Deer in Hertfordshire, they cannot be more than very scarce. However, Northampton report they have a steady breeding population of the species in the SW corner of the county near Daventry that is known to have been there at least since 1981. A look at a map indicates these deer are a long way from any Bedfordshire border.
- Sika Deer** *Cervus nippon* 3-0-2. A small group of one male and two females seen at Milton Bryan (SP93V) in June (DA) and larger groups of 12-15 females and young seen at Steppingley (SP93X) from September to December (BN PS). Northamptonshire report they have small populations of this deer, seen only in the north of the county.

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The records this year have been contributed by 60 people, which is a higher number than for last year. Of these people, 41 were members of the Society. My thanks go to all these contributors for their time and effort. They are:—

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DAVID ANDERSON

REPTILES AND AMPHIBIANS

Report of the Recorder

Amphibians

The mild winter of 1988-1989, which turned to spring without an obvious change in the weather, seemed to confuse the amphibians. The Common Toad migration, which usually occurs over a period of three to four nights, was much more spread out and less obvious. It occurred during March and spawn was first seen at Cople Pits NR on 25th March. The Common Frogs spawned at this site from 20th March.

The weather stayed mild to the end of the year leading to reports of amphibian activity beyond the time they usually hibernate. Reports included a Great Crested Newt in a garden pond in Luton (TL02R).

Reptiles

The hot summer did lead to some reptile sightings as had been hoped for. Grass Snake records came from Everton Hill, Woodbury Estate/White Wood, a ditch near Tempsford and at Abbey Corrugated Ltd at Blunham where an Adder was also found. The Adder was inside a roll of paper and could have been transported to the site with the paper which had been imported from Germany.

Occasional Common Lizards were seen, namely at Barton Hills, Sandy Lodge and Cople.

ACKNOWLEDGEMENTS

My sincere thanks to everyone who submitted records for the year.

HELEN M. MUIR-HOWIE



Grass Snake Natrix natrix

(Photo: Derek Rands)

BIRDS

Report of the Recorder

REVIEW OF 1989

The year began with much activity in and around the Bedford Clay Pits, as observers gathered at the now massive gull roost at Brogborough Lake. A total of 11 species of gull were eventually recorded including Glaucous and Iceland Gulls from the Arctic, Mediterranean Gull from the south and a bird new to Bedfordshire from the Americas, a long-expected Ring-billed Gull. One of the small islands at Brogborough Lake attracted a record roost of 69 Cormorants, and amongst the massed ranks of Coot and diving ducks, Common Scoter and Red-crested Pochard were both recorded. Only the county's fourth record of Ring-necked Duck in the Ouse Valley at Harrold CP could deflect observers away from the Marston Vale. Two Bean Geese were also briefly observed at nearby Radwell in February, being only the second occurrence this century. Smew and Red-breasted Mergansers were at Priory CP and Great Grey Shrikes were reported at Millbrook, Kempston, Amptill and Bolnhurst. A small flock of Crossbills at Whipsnade Zoo gave good value to a steady trickle of paying customers but less obliging were Merlins at South Mills NR, Houghton Regis ChP and Brogborough No2 CIP.

Blows Downs once again enjoyed a fruitful spring passage with the concentration of migration watchers matched only by the large numbers of Wheatears that moved through from early March to late May. In late April passage peaked when over 40 individuals were counted, scattered across the paddocks and up the open Blows slope, many being of the large and brightly coloured Greenland race. Ring Ouzels occurred from 20 March on a staggering 31 bird days until mid-May, along with seemingly even more observers than before. Also on Blows Downs was a good sprinkling of Redstart, Whinchat, Black Redstart, Pied Flycatcher, Firecrest and without doubt the star prize of the spring period, a most splendid Waxwing on 15 April. Yet again this chalk downland migration watchpoint compared well with some of the coastal bird observatories for numbers of Wheatear and Ring Ouzel.



Celebrating the Leach's Petrel sighting, Brogborough 29 October 1989, Back row: Barry Nightingale, Ian Dawson, Dave Ball, Martin Palmer, Pete Smith, Tim Robson. Front row: Paul Trodd, Paul Oldfield, Dave Odell

(Photo: Dave Odell)

Elsewhere in the county Garganeys were recorded at several sites, four Velvet Scoters briefly rested at Radwell GP and Ospreys moved through South Mills NR, Rookery CIP and Wilden. In May a migrant Stone Curlew paused for a day at Barton Hill Farm and a Golden Oriole was noted at Millbrook. In June a Black Kite at Little Staughton was new to Bedfordshire and in July a Montague's Harrier over South Mills NR was the first since 1975.

The breeding season appeared to be a good one with ideal weather conditions ensuring a good fledgling success rate for many of our familiar species. Continuing fieldwork for the *Breeding Bird Atlas* mapped some of the county's scarcer species such as Tree Sparrow, Willow Tit and Grey Partridge. Sparrowhawks seemed to be everywhere and could be termed almost common in many districts. Our mineral excavation sites attracted at least four pairs of Shelduck to breed as well as Ruddy Duck, Gadwall and Shoveler. Kingfishers were particularly numerous following yet another mild winter and Grey Wagtails bred at five localities. On the Lower Greensand Ridge at least one pair of Nightjar was successful in raising young and in the same area small numbers of Redstart nested. However on the debit side that supreme songster the Nightingale was at a low ebb and the Lady Amherst's Pheasant continues to be difficult to find. For most Atlas fieldworkers the sight of a Hobby winging its way across an apparently boring farmland tetrad was rich reward and eventually at least 10 pairs were recorded. Quails too were in good supply out in the cereal prairies with records coming from 13 localities.

The autumn wader passage always promises much but often fails due to lack of suitable habitat. Not so at Rookery CIP in 1989 when a total of 23 species was recorded, where at times it resembled an east coast reserve with such delicacies as Little Stint, Curlew Sandpiper and Sanderling amongst the more numerous shanks, sandpipers, plovers and the ever present Dunlin. Probably the most spectacular bird at Rookery CIP was not a wader but a raptor, as for a week in August a Peregrine put on a splendid show, much to the delight of the county's twitchers.

The rarities continued elsewhere with a Pectoral Sandpiper in the Ivel Valley, a Hoopoe at Houghton Regis ChP and 34 Sandwich Terns preceding a thunderstorm over Priory CP in September. Seabirds set the pulse racing with Fulmars at Priory CP and Brogborough Lake, and a much harassed Leach's Petrel at the latter locality for a day in October. The year came to a close much as it had started with the clay pits in the Marston Vale receiving much attention from the birdwatcher and with a 'wreck' of Shags scattered across the county.

When 1989 finally drew to a close, a total of 191 species of birds, many of them rare, had been recorded in Bedfordshire, equalling 1988's record breaking year. With the increase in observer coverage continuing apace it cannot now be long before the 200 mark is reached during the 1990's.

With the inclusion of Ring-billed Gull and Black Kite the total county bird list now stands at 269 at the end of 1989.

As always I would like to thank the Rarities Committee of A.J. Livett, B. Nightingale, Dr J.T.R. Sharrock, D.S. Woodhead and, in particular, M.J. Palmer for their advice and comments on rare birds. I would also like to thank Andy Chick for supplying the line drawings, which greatly enhance this year's report, and to Sue Johnson for painstakingly typing my, at times, "illegible" script. Last but not least my appreciation goes to the following contributors:

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SYSTEMATIC LIST FOR 1989

Nomenclature follows 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, ChP — Chalk Pit, CIP — Clay Pit, CP — Country Park, GP — Gravel Pit, SP — Sand Pit, SW — Sewage Works. Place names for mineral excavations follow those by Nightingale (*Bedf. Nat.* 39 73-74) except for Barkers Lane (TL 076493) which is now generally known as Priory CP.

Non-passerines

Great Northern Diver *Gavia immer* A first winter bird at Priory CP on 16 December (DK) moved to the clay pits where it was seen at Stewartby Lake and Rookery CIP on 17th (MJP RAN) and Millbrook CIP on 18th (PT). This was only the fourth county record since 1946 and it was relocated in early 1990 back at Rookery CIP.

Little Grebe *Tachybaptus ruficollis* Reported in the breeding season from only five localities with a high of three pairs at Houghton Regis ChP. Underrecorded as a breeding species. Highest post-breeding flock was 11 at Rookery CIP and Priory CP on 4 September and 30 November respectively.

Great Crested Grebe *Podiceps cristatus* Breeding season records came from 13 localities involving 20 pairs, mainly at the clay pits and mineral lakes in the Ouse, Ivel and Ouzel river valleys. Post breeding flocks of note were up to 40 at Stewartby Lake from September-December and 28 at Brogborough Lake on 21 September. The following monthly maxima were recorded at Priory CP (GD).

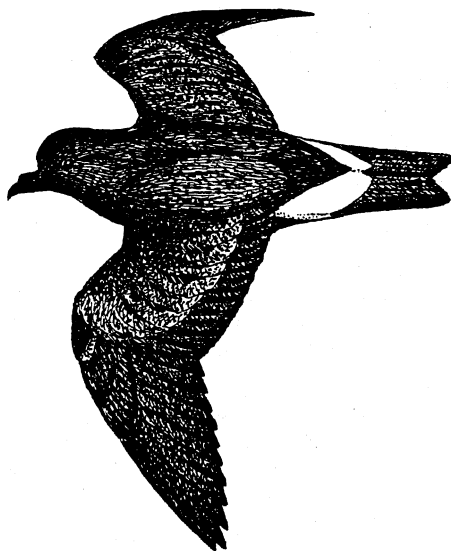
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
25	32	28	9	15	6	6	4	9	5	19	12



Fulmar at Brogborough on 9 September 1989

(Photo: Dave Kramer)

- Slavonian Grebe** *P. auritus* One at Brogborough No2 CIP 15-28 February (DT *et al.*) followed by singles at Brogborough Lake and Radwell GP on 24 November and 16 December respectively (MJP).
- Fulmar** *Fulmarus glacialis* An exhausted bird on a field near Brogborough Lake on 9 September (DJO *et al.*) was released at Hunstanton, Norfolk the following day (DK). An adult at Priory CP on 12 September (DK). There have been only two previous records this century, in 1988 and 1981.
- Leach's Petrel** *Oceanodroma leucorhoa* Following 36 hours of strong gale force south westerlies one was found at Brogborough Lake at dawn on 29 October (PT TR PO) and seen by many observers until dusk. The 11th county record this century.
- Cormorant** *Phalacrocorax carbo* There was hardly a still water in the county that did not record this species. The majority of records were from January-April and September-December although small numbers were noted through the summer in the clay pits. Main population at Stewartby/Brogborough Lakes with the central roost on an island at the latter site where the top first winter period count was 57 on 4 March, followed by a maximum of 69 on 26 November, a new county record. Double figure counts outside the Marston Vale as follows: 33 at Priory CP on 21 December; 12 at Grovebury Farm SP on 5 March; 19 over Kempston on 2 October; and 13 over Blows Downs on 31 March. A bird of the continental race *P. c. sinensis* was seen flying over Priory CP on 26 February and was probably the same one at Stewartby Lake later that day until 11 March.
- Shag** *P. aristotelis* A December influx following strong westerlies as follows: a first-winter on Luton Telephone Exchange roof on 22nd was captured and released at Luton Hoo where it remained until the end of the year (RD BRS); two immatures at Stewartby Lake on 22nd (DJO); two at Southill Lake on 23rd (RAH); six at Priory CP on 24th reducing to three on 31st (DJO DK); five at Brogborough Lake on 24th-31st (RAN); three at Houghton Regis ChP from 27th into 1990 (NRF PT).
- Grey Heron** *Ardea cinerea* Breeding was recorded at Luton Hoo where three-four nests were occupied, and at Southill Lake where there were five nests. At the well studied Bromham heronry a total of 16 young were noted from six nests with all but one fledging (PA). A post-breeding group of 12 was of note of Grovebury Farm SP on 25 June, and elsewhere in the county widely reported singly or in small groups.
- Mute Swan** *Cygnus olor* Breeding pairs were successful at Priory CP, Goldington Power Station, Chimney Corner CIP, Langford Lakes, Brogborough Lake, Rookery CIP, Stewartby Lake, Woburn Park and Luton Hoo. At County Hall a pair had their first clutch vandalised, but reared young at another site nearby where one of the surviving cygnets had to be taken into care, suffering from lead poisoning (SA). At Dunstable SW an horrific attack by vandals occurred on the resident pair, resulting in the death of the cob and the destruction of the nest. Maximum winter counts as follows: Bedford Town Centre 56, Radwell GP 81, Harrold CP 73, Stewartby Lake 33 and Brogborough Lake 29.
- Bewick's Swan** *C. columbianus* A single at Radwell flood meadows from 1988 remained until at least 12 February with 11 on 19 March. Three passed NNE over Tempsford on 17 January. In the second winter period two at Harrold CP on 29 November with six briefly at Brogborough Lake the same day. On the flood meadows at Radwell up to six present from 3-31 December.
- Whooper Swan** *C. cygnus* Three over Radwell GP on 11 March was the only record (DSW).
- Bean Goose** *Anser fabalis* Two adults at Radwell GP on 4 February (DSW DHB) was only the second occurrence this century.
- Pink-footed Goose** *A. brachyrhynchus* One over Blunham Lake on 30 March (RB).
- White-fronted Goose** *A. albifrons* One adult and two first winters at Roxton GP on 7-8 March with one remaining in the general area until 2 May when also reported at South Mills NR (DHB IKD). A single at Priory CP on 24 April related to the same bird.
- Greylag Goose** *A. anser* Breeding recorded at Radwell GP, Chimney Corner CIP and Roxton GP. Maximum winter counts at Radwell were 256 in January, 315 in February, c400 in October

*Leach's Petrel*

(Andy Chick)

and 474 in November. The usual scattering of records was received from other parts of the Ouse and Ivel river valleys and at the Bedford Clay Pits.

Canada Goose *Branta canadensis* Breeding recorded at Priory CP (1 pr), Luton Hoo (7 pr), Stewartby and Brogborough Lakes (1 pr), Chimney Corner CIP (2 pr), Rookery CIP (2 pr), Tingrith (3 pr), Harlington (1 pr), Wrest Park (3 pr), Battlesden Lake (1 pr), Ledburn Road SP (1 pr), Radwell GP (10 pr) and at Harrold CP where 96 goslings were reared. Outside the breeding season large numbers reported along the Ouse Valley and around the Marston Vale. Top counts as follows: 675 at Radwell GP in November; 280 at Grovebury Farm SP on 3 December; 176 at Brogborough Lake on 24 September; c170 at Chimney Corner CIP on 24 October and 135 at Woburn Lakes on 21 January. Monthly maxima at Luton Hoo (BRS):

Jan	Feb	Mar	Sept	Oct	Nov	Dec
120	90	52	105	135	140	85

Barnacle Goose *B. leucopsis* It now seems sensible to include this species on the full county list, as a small, but increasing, feral population has now become established in Bedfordshire.

Undoubtedly the majority, if not all, of these geese have originated from captive stock, but attention should be paid to double figure flocks appearing at either end of the winter periods as that is when displaced migrants could occur, particularly from the wintering population in the Low Countries. Although rumoured to have bred at Rookery CIP in 1989 detailed proof is required before it can be accepted onto the Breeding Bird List. The most likely locality is at one of the quieter clay pits in the Marston Vale such as Rookery or Chimney Corner CIP. This species has often been seen displaying to the closely related Canada Goose making the possibility of hybridisation likely.

A group of up to seven were present in the clay pits throughout the year plus a separate flock of 11-12 from 4-21 September at Rookery CIP and three at Brogborough Lake on 26 March. At Radwell GP a maximum of six from 1 January-26 February followed by ones and

twos until May and a separate group of five on 25 February. In the autumn seven from 12 November onwards. At Priory CP seven overhead on 1 April with two on 6 May, and two over Kempston on 7th. A single at Great Barford GP on 29 March followed by two over South Mills NR on 7 May. Four at Woburn Lake on 21 January could have been part of the Stewartby flock, but a single at Luton Hoo on 7 February was considered to be a recent escapee.

Brent Goose *B. bernicla* Two at Begwary Brook near Wyboston on 11 March (JEC ACA) and one at Luton on 9 March (TW).

Shelduck *Tadorna tadorna* Breeding pairs present in the clay pits at Brogborough No2 CIP, Rookery CIP and at Chimney Corner CIP where two pairs were noted and juveniles recorded. Also noted in the breeding season at Grovebury Farm SP, Willington GP and Harrold CP. From January-April ones or twos noted at most of the clay pits, especially during March/April, and also at Priory CP, Woburn Lake, Harrold CP and Grovebury Farm SP with a high of six on 9 April. Post-breeding records came from Dunstable SW/Houghton Regis ChP with three on 28-30 July followed by a single at the latter site from 2-3 September; nine at Priory CP on 1 August; a single at Stewartby Lake on 4 September and singles at Grovebury Farm SP on 3 and 10 December.

Mandarin *Aix galericulata* Breeding confirmed at Woburn Lake, Eversholt Lake and Luton Hoo where seven young noted. Also noted in the breeding season at Flitwick Moor, Swiss Gardens, Harrold CP and Blunham where a pair were noted in a tree near an owl box. The top count outside the breeding season at Woburn Lakes was c55 on 17 December and a single was present at Priory CP during January and February and on 19 December. At Stockgrove CP up to five were noted from 23 October into 1990.

Wigeon *Anas penelope* The main wintering flock at Radwell GP and the nearby meadows where during the first winter period a maximum of 338 was present on 14 January with the final two on 1 April. Elsewhere during this period noted in small numbers at Dunstable SW, Rookery CIP, Harrold CP, Stewartby Lake, Blunham Lake, Priory CP and Grovebury Farm SP. Autumn records noted from 9 September at Priory CP followed by small numbers at the aforementioned sites plus Chimney Corner CIP, Southill Lake, Luton Hoo, East Hyde, Brogborough Lake and a maximum of 555 at Radwell on 24 December.

Gadwall *A. strepera* Confirmed breeding at Luton Hoo and Rookery CIP where a pair each reared six young. Breeding was suspected at Houghton Regis ChP. Outside the breeding season a scattering of records from most of the county's lakes and pits with maximum of 12 at Radwell and 16 at Priory CP in December; 57 at Harrold CP in January; up to 10 at Blunham Lakes throughout and 13 at South Mills NR in January. Monthly maxima from the two main sites as follows (BRS PT):

Luton Hoo

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
85	82	56	17	4	25	6	32	n/c	110	31	55

Dunstable SW

Jan	Feb	Mar		Oct	Nov	Dec
12	23	35		43	72	61

Teal *A. crecca* Recorded throughout the year at South Mills NR where two pairs bred, maximum autumn counts 52 and 60 on 12 and 22 October respectively. Regularly noted during the winter months (maxima in parenthesis) at Radwell GP (160), Priory (60), Luton Hoo (53), Battlesden Lake (45), Chimney Corner (85), Rookery CIP (c20) and Dunstable SW (19). Elsewhere lesser numbers recorded intermittently at all the main wetland localities. Monthly maxima at Priory CP as follows (GD):

Jan	Feb	Mar	Apr		Oct	Nov	Dec
60	49	10	4		6	27	59

- Mallard** *A. platyrhynchos* Widely recorded throughout the breeding season with a good brood survival rate reported from Priory CP. Maximum counts as follows: Harrold CP 401 on 14 January; 220 Chimney Corner CIP on 10 September; 280 Priory CP on 7 September; 270 Southill Lake and 114 at Woburn Lake on 22 October; 189 Luton Hoo on 24 December and 180 at Grovebury Farm SP on 20 August.
- Pintail** *A. acuta* A poor year for this species with a pair at Brogborough Lake on 26 February, two over Harrold CP on 17 September, an eclipse male at Rookery CIP on 24 September and a female at Dunstable SW on 11 November.
- Garganey** *A. querquedula* A pair at South Mills NR on 27 March (PO), a male at Dunstable SW on 6-7 June (DT RD *et al.*) followed by an eclipse male on 6-7 August (PT); a female at Millbrook CIP on 5 July (PA) and a eclipse male at Blunham Lake on 19 July (TR).
- Shoveler** *A. clypeata* Confirmed breeding at Dunstable SW where a female seen with nine ducklings on 6 August; also at Luton Hoo where a pair raised two young. Other breeding season records came from Houghton Regis ChP, South Mills NR and Rookery CIP. Groups of less than 20 reported outside the breeding season from South Mills NR, Luton Hoo, Stewartby Lake, Priory CP, Woburn Lake, Southill Lake, Battlesden Lake and Grovebury Farm SP. At the county's main site, Dunstable SW, numbers peaked at 49 on 23 September.
- Red-crested Pochard.** *Netta rufina* A male at Houghton Regis ChP on 12 May (PT); an immature male in the Ivel Valley from 10 September-18 November was seen mainly at South Mills NR (PO *et al.*); an immature male at Brogborough Lake from 1-14 October (DJO MJP) followed by a pair on 16-18 December (RAN BIS).
- Pochard** *Aythya ferina* Widely recorded during both winter periods particularly in the Marston Vale where up to 200 present at Brogborough Lake. Maximum counts elsewhere as follows: Chimney Corner CIP 78 on 12 February; 100 at Harrold CP in January; 65 at Radwell in February; 31 at Luton Hoo on 24 December; 57 Dunstable SW on 22 January; 13 at Grovebury Farm SP on 8 January and 43 at Stewartby Lake on 9 December. Regular counts from Priory CP produced the following maxima (GD):

Jan	Feb	Mar	Aug	Sept	Oct	Nov	Dec
60	47	46	7	1	8	44	33

- Ring-necked Duck** *A. collaris* A female at Harrold CP on 1-2 January (MJP DJO *et al.*) was only the fourth county record and has been accepted by BBRC. It was relocated at Radwell GP on 12 February where it remained until at least 25 March (DSW *et al.*).
- Tufted Duck** *A. fuligula* Reported during the breeding season from 10 localities. Top wintering site was Brogborough Lake with 380 on 7 January followed by c200 at Radwell GP on 19 February and 168 at Chimney Corner CIP on 11 November. Lesser numbers widely reported from the clay and gravel pits.
- Scaup** *A. marila* A female at Priory CP on 1 January was seen intermittently until 4 February (GD MJP *et al.*) and was probably the same bird seen at Chimney Corner CIP on 2 January until at least 11 March (PT IKD *et al.*). A different female at Brogborough Lake on 21 January (MJP). In the autumn an eclipse male at Chimney Corner from 29 October-18 November (PO TR).
- Common Scoter** *Melanitta nigra* A group of five females and two males at Stewartby Lake on 12 July was an exceptional date (KS). A single male at Brogborough Lake on 16 December remained until 24th (RAN).
- Velvet Scoter** *M. fusca* A group consisting of three females and a male at Radwell GP on 23 April (DSW *et al.*).
- Goldeneye** *Bucephala clangula* At the main site, Brogborough Lake, numbers peaked at 36 in mid-February with the last bird on 4 April. In the autumn a gradual build-up noted from 15 October with up to 20 by the year's end. Elsewhere in the clay pits a scattering of records involving mainly singles from Stewartby Lake and Chimney Corner CIP. Elsewhere in the county noted at: South Mills NR from 1-21 January; Harrold CP, up to 10 in January-February; Radwell GP, Priory CP, a late bird on 22 April; Blunham Lake, six on 12 March;

River Ivel, one near Girtford Bridge on 29 January; Woburn Lake on 11 November and at Dunstable SW on 4 November.

Smew *Mergus albellus* A 'redhead' at Priory CP on 6 March was the only record (GD).

Red-breasted Merganser *M. serrator* A single male at Priory CP on 28 December (GD).

Goosander *M. merganser* At Woburn Lake and nearby Eversholt Lake noted in both winter periods until 12 March and from 11 November with a maximum of 13 on 24 February. At Harrold CP and Radwell GP a similar population in both winter periods with a top count of 10 at the latter site on 11 January and eight at Harrold on 29 November. Elsewhere singles at Brogborough Lake on 26 November and 17 December; Blunham Lake on 9 April and at Priory CP, two on 1 January, three on 15th and one on 26 November.

Ruddy Duck *Oxyura jamaicensis* At Rookery CIP and the south corner of Stewartby Lake up to four ducks and a drake present all year. A pair eventually bred in Rookery CIP and six ducklings were noted in early August. At Luton Hoo breeding was also confirmed when a duck was noted with four young on 7 August, up to six adult were present from 16 April until late August. Elsewhere a female in the Harrold CP/Radwell GP area from 1 January-8 April; a female at Woburn Lake on 9 April; a male at Battlesden Lake on 22 April; a female at Priory CP on 26 September and one at Brogborough Lake on 26 November.

Black Kite *Milvus migrans* An adult male at The Wickey Farm, Little Staughton on 7 June was a first for Bedfordshire (RAN). This record coincides with a number of other sightings in southern England during the early summer period, when it, or another was noted at nearby Little Paxton, Cambridgeshire.

Harrier sp. *Circus* sp. 'Ringtails' of indeterminate species were noted at Linslade on 2 July (PMad) and Everton on 30 September (AC).

Hen Harrier *C. cyaneus* A 'ringtail' seen from the Potton-Sandy road on 12 November (R&BM).

Montagu's Harrier *C. pygargus* A 'ringtail' at South Mills NR on 17 July was the first county record since 1975 (PO).

Sparrowhawk *Accipiter nisus* Recorded across the county throughout the year with many observers noting it regularly at their local 'patches'. It could be termed common along the Lower Greensand Ridge woodlands and the chalk downlands. A pair in TL12 had full grown young in the nest by late April, which was exceptionally early, and in TL02 two/three young were shot dead in the nest by vandals. An incredible sight confronted one observer at Radwell in January when a bird was seen attacking a Green Woodpecker on the ground. It eventually managed to escape, following a tussle in a bramble patch, minus a few feathers and calling loudly!

Buzzard *Buteo buteo* In March one at Warden Little Wood followed by one over The Lodge, Sandy on 20 April. A single at Toddington on 5 May could possibly have been seen on 6th at South Mills NR. In the Whipnade, Kensworth, Dunstable Downs area single sightings on 19 June, 22 July, 1 and 5 August and 24 September. In the Haynes/Chicksands Wood area one regularly seen from 19 June-12 September. One at Southill Park on 21 October. At Everton one on 10 September, followed by another on 3 and 8 October and 22 and 31 December. A single near Potton on 17 September could have related to the Everton sightings. Finally at Luton Hoo one present from September with a second bird in November. Another good year for this splendid raptor and surely only a matter of time before it is discovered breeding.

Osprey *Pandion haliaetus* In the spring a male over South Mills NR on 18 April followed by another 28th (PO); a well observed bird at Wilden on 6-7 May (IN *et al.*) and one at Rookery CIP on 13 May (RAN). There was one autumn record at Blunham on 11 August (PO).

Kestrel *Falco tinnunculus* Breeding records from three tetrads in TL02, two sites near Haynes, Bromham Park, Cardington, Priory CP and at Eaton Bray where a pair raised five young from a nest box site. Undoubtedly underrecorded as a breeding species. Commonly noted throughout the county.

Merlin *F. columbarius* All records relate to brown immature/female types. One at South Mills on 3 February (PO) and again on 18 March (TR); one at Brogborough No.2 CLP on 4 February (RAN) and a single at Houghton Regis ChP on 5 February (NRF).

Hobby *F. subbuteo* Breeding recorded from at least 10 sites as follows:

- Site 1 A pair raised 3 juveniles from nest situated in a farmland Beech tree.
- Site 2 Two juveniles fledged from a pine tree nest site.
- Site 3 Two young reared from a pine tree nest site along the Lower Greensand Ridge.
- Site 4 Another brood of two/three young raised from an oak tree nest site on the Greensand.
- Site 5 Three juveniles fledged from a pair nesting in parkland.
- Site 6 Regular July and August sightings of adults carrying food (House Martins) towards probable nest site in farmland location.

Sites 7-10 Adults noted throughout the breeding season in suitable breeding habitat.

Elsewhere there were many sightings of migrants across the county, mainly from wetland localities. However the first and last dates were recorded at Luton with two over Wardown Park on 29 April and a single over the Luton and Dunstable Hospital on 14 October. This species was recorded hunting dragonflies at Sundon Quarry, hirundines at Rookery CIP, House Martins at Stanford and Dunstable, cock-chafers at Everton and Dunstable, Sand Martin in the Ouzel Valley, flying ants at Bromham and House Sparrows at several farmland localities.

Peregrine *F. peregrinus* An immature male at Rookery CIP on 20 August remained until at least 27th (PT RAN *et al.*). It was seen killing Feral Rock Doves and Starlings during its stay and was also noted stooping at a Kestrel. Possibly the same bird recorded at Kempston Hardwick on 11 October (PA).

Red-legged Partridge *Alectoris rufa* Commonly distributed across the county's farmland and also noted in woodland. One in a suburban garden at Barton was of note.

Grey Partridge *Perdix perdix* Breeding records from Upper Caldecote, Stewartby, Cardington, Dunstable SW, where a pair reared eight young, and Houghton Regis ChP, where a female was seen with 12 young. Underrecorded as a breeding species? Other records from Haynes, Bedford SW, Chimney Corner, Pegsdon Hills, Millbrook and at Stopsley Common where a covey of 18 was noted on 16 October.

Quail *Coturnix coturnix* A 'Quail year' as follows: Stopsley Common, two or three on 29 May; Warden/Galley Hill, up to three calling from 4 June-24 July from a field of Sanfoin and an abandoned cereal field; Houghton Regis ChP, one heard on 24 June with two on 27th and one on 28th; Sewell, one on 30 June; Totternhoe, one calling on 28 May-27 June; Haynes, one on 11 June; Marston Thrift, one on 1 July; Knotting Green, one calling from May-1 August in 'set-aside' field; Chalgrave Manor, one or two calling intermittently from 4 July-1 August; Blows Downs, one calling on 2 August from barley field; Whipsnade Downs, one singing from cereal field being harvested. A good year with good numbers recorded elsewhere across England.

Pheasant *Phasianus colchicus* Widespread distribution, particularly numerous around the country estates. Partial albino noted at Clophill on 9 April and an all white bird at Brogborough on 19 November.

Lady Amherst's Pheasant *Chrysolophus amherstiae* The main site at Maulden Wood recorded up to 10 males calling in April/May. Elsewhere at least two pairs bred at Charle Wood; up to three heard at Chicksands Wood during May; and singles calling at Kingshoe Wood and Briar Stocking in April and May. At Luton Hoo a maximum of 15 males and seven or eight females noted on the entire estate. There were few reports from the Millbrook complex this year and with low numbers generally reported elsewhere this species continues to give cause for concern.

Water Rail *Rallus aquaticus* At Flitwick Moor a small resident population present with several young noted in early summer. At least five pairs were reported throughout the year at Harrold CP where breeding was confirmed by the presence of young. A presumed migrant was recorded singing at Houghton Regis ChP from 24 March to 27th when it was briefly joined by a second bird. Winter records noted at Leagrave Marsh, where one showed well from 1 January-3 March; South Mills NR, one on 28 January; Tempsford, one on 8 January; Priory CP, at least

one until 12 March and two from 30 October onwards, with six on 9 December; Brogborough Lake, one on 14 January, 10 September and at least two from 18 November when seen feeding on a swan carcass on 9 December; Battlesden Lake one on 17 September; Stewartby Lake, singles on 26 February, 23 March and 9 December and Dunstable SW one on 1 January.

Moorhen *Gallinula chloropus* The only large count received was 24 at Dunstable SW on 11 December. As a breeding species widespread.

Coot *Fulica atra* Large winter concentrations were present at: Brogborough Lake, up to 200 in both winter periods; Harrold CP, 330 in January, 247 in September and 406 in November; Chimney Corner CIP, 185 in January, 148 in September, 139 in October, 215 in November and 238 in December. Elsewhere 98 at Stewartby Lake on 14 January and 105 at Dunstable SW on 12 February both of note. Breeding was widespread throughout the county's wetlands.

Oystercatcher *Haematopus ostralegus* All single records: Radwell GP 1 January - 28 February; Grovebury Farm SP and Rookery CIP on 27 March; Cuckoo Bridge GP on 18 April; Rookery CIP on 15 July and Priory CP on 11 September.

Stone Curlew *Burhinus oedincnemus* A single in a pea field near Barton Hill Farm on 3 May (LB PT).

Little Ringed Plover *Charadrius dubius* The first returning migrant was at Priory CP on 18 March followed by small numbers throughout the spring period. Passage also noted at New Road SP, Sandy; South Mills NR, seven on 15 April; Willington GP; Cuckoo Bridge GP; Stewartby Lake; Rookery CIP and Houghton Regis ChP. Breeding confirmed at the following: Chimney Corner CIP, a pair with three juveniles; Radwell GP, one pair raised one young; Rookery CIP, juvenile noted in July; Kensworth Quarry, a pair with two juveniles; Grovebury Farm SP, a pair fledged at least one juvenile and at a new locality in mid-county a pair fledged two young. Elsewhere attempted breeding was noted at South Mills NR; a pair was present in suitable breeding habitat all summer at Barton Mill and adults were noted at Goldington Power Station and Willington GP all summer. Return passage noted at Chalton SW on 23 June; Houghton Regis ChP, four on 15 July; Tiddenfoot CP, three on 9 August, and at Priory CP/Goldington Power Station with five on 8 July and the final two migrants on 17 September.

Ringed Plover *C. hiaticula* The first of the year was at Radwell GP on 29 January followed by three at Harrold CP on 19 February with a top count of five on 25th, birds present throughout the summer but did not breed. In the clay pits small parties occurred from 12 February mainly at Chimney Corner CIP where two pairs bred, and Rookery CIP where three nests were located. Also noted at Stewartby Lake during the spring and at South Mills NR from 16 February, with at least one pair breeding; Houghton Regis ChP; New Road SP, Sandy; and Priory CP. In the autumn noted at Rookery CIP until 21 August with the final sighting at Houghton Regis ChP on 25 September.

Golden Plover *Pluvialis apricaria* In the Ivel Valley between Henlow and Tempsford large numbers present in both winter periods involving up to 1500 birds seen mainly at Henlow Camp, the A1 at Biggleswade and also South Mills NR. In the Ouse Valley at Radwell 1300 present in the first winter period, with 2600 in November, moved around the valley and could often be seen at RAE Thurleigh. A flock of c500 over Priory CP on 22 January was of note with groups of less than 1000 near Bedford SW until 11 March. Other large flocks were 500 at Kempston Hardwick on 13 January; c100 over Kempston on 25 December; 380 at Wyboston on 22 January; c350 at Pegsdon Hills on 28 February; 212 at Kempston on 29 January; c250 at Chimney Corner CIP in February and early March; with small numbers noted at Telegraph Hill, Grovebury Farm SP, Whipsnade Zoo, Barton, Totternhoe and Eaton Bray, Barton Hills, Willington, Cuckoo Bridge GP and Hockliffe. First and last dates related to summer plumage birds with four at Barton Hill Farm on 4 May and a single at Rookery CIP on 13 August.

Grey Plover *P. squatarola* An adult at Rookery CIP on 5-6 May (DT MJP) followed by an immature on 27-28th (DT) and a first summer on 3 June (PT). A party of 13 at Houghton Regis ChP on 26 September was the largest group ever seen in the county (DT).

- Lapwing** *Vanellus vanellus* Widespread as a breeding species in farmland districts. Up to 2000 at Radwell in the first winter period; 1200 at Grovebury Farm SP in February; 1200 over Priory CP on 1 and 8 January; c2000 at Rookery CIP in January. Flocks of up to 500 noted on the move in January-February at South Mills NR, Tilsworth, Stopsley Common and Galley Hill, Stewartby and Dunstable SW. Post-breeding movements noted over Priory CP between 10 June-23 July and 17-27 September involving parties of up to 320 at a time.
- Sanderling** *Calidris alba* One at Rookery CIP on 27 May and one at Stewartby Lake on 6 June (DT).
- Little Stint** *C. minuta* Juveniles recorded at Rookery CIP as follows: one at 26 August, two on 27th-28th, three on 31st, one on 3 September and two on 17th (RAN DJO DT SW *et al.*).
- Pectoral Sandpiper** *C. melanotos* A juvenile at South Mills NR on 22-23 October (PO) was the sixth county record.
- Curlew Sandpiper** *C. ferruginea* An adult at Rookery CIP on 3 June (MJP TR).
- Dunlin** *C. alpina* At Rookery CIP the first two on 26 February were followed by near continuous presence until 1 October. A peak was noted in mid-May with 32 on 13th and throughout August with 9 on 4th. An individual of the race *C. a. arctica* was identified on 4 March. At South Mills NR small numbers present from 5 March-17 September with a high of six on 24-25 April. Elsewhere noted on passage at Harrold CP, Radwell GP, Chimney Corner CIP, Stewartby Lake, Priory CP, Grovebury Farm SP, Dunstable SW and Goldington Power Station. Two winter records came from Harrold CP on 1 January and Radwell GP on 30 December.
- Ruff** *Philomachus pugnax* The first were two at South Mills NR on 10-18 March and 17-18 May followed by one at Chimney Corner CIP on 28 March/6 April, 7 May and two on 20th. At Rookery CIP present from 4-21 May with a maximum of eight on 9th and four from 27 August-10 September. Elsewhere singles on 4 June at Vicarage Farm CIP and 26-27 August at Bedford SW. Winter records from Priory CP on 2 December and three on Radwell GP on 25th.
- Jack Snipe** *Lymnocyrtes minimus* At Houghton Regis ChP up to four in the first winter period until 25 April and then one from 8 October onwards (NRF). At South Mills NR one or two until 1 April, with one trapped on 5 March, and present again from 18 November onwards with another bird trapped on 1 December (PO). Elsewhere singles noted at Grovebury Farm SP on 8 January, Stewartby Lake on 20 February, Harrold CP on 12 March and at Chimney Corner CIP on 9 and 24 October.
- Snipe** *Gallinago gallinago* Breeding season records of 'drumming' birds at Houghton Regis ChP (1 pr), South Mills NR (3 prs) and Rookery CIP (c5 prs) with birds throughout the year at all three sites. Houghton Regis ChP peaked at nine in the first winter period and 11 in the second with respective counts at South Mills NR of c60 and c40 (NRF PO). At least 50 were present at Rookery CIP in January-February, Radwell GP had c70 in both winter periods and c20 were on Totternhoe Meads in the first winter period. Elsewhere wintering birds noted at Brogborough Lake, Ledburn Road SP, Harrold CP, Stewartby Lake, Henlow, Blunham, Cardington, Chimney Corner CIP, Grovebury Farm SP, Priory CP and Battlesden Lake.
- Woodcock** *Scolopax rusticola* 'Roding' noted along the Lower Greensand Ridge at Haynes, Moneypot Hill, Old Warden, Southill Park (10 pairs bred), The Lodge, Sandy, Flitwick Moor, Ampthill Park, Wavendon Heath, Maulden Wood (one found on nest), Chicksands Wood, King's Wood and Charle Wood, and on the chalkdowns at Pegsdon. Winter records from Kidney Wood, Whipsnade Zoo, Clophill and on the Southill Estate where 13 were flushed on a pheasant drive in January at Keepers Warren.
- Black-tailed Godwit** *Limosa limosa* An adult at Chimney Corner CIP on 20-21 May (DT MJP). Singles at Chimney Corner CIP and Rookery CIP on 28 August probably related to the same bird (TR RAN).
- Bar-tailed Godwit** *L. lapponica* Singles at Willington GP on 29 April, Priory CP on 2 May and Rookery CIP on 28 September (DHB DK DT).
- Whimbrel** *Numenius phaeopus* In the spring two at Houghton Regis ChP on 16 April followed by two near Stewartby Lake and South Mills NR on 19th and one at Brogborough Lake on 23rd. In May one at Cuckoo Bridge GP on 2nd with one over Blunham on 3rd and an incredible 44

north east over Priory CP on 6th. Returning migrants noted at Pegsdon Hills on 27 July, two at Rookery CIP on 16 August and one on 25th; one over Bedford also on 25th; one at Cardington on 27th and finally a single at Rookery CIP on 8 September.

Curlew *N. arquata* At Priory CP singles on 1 and 2 February and 23 April, with singles also on 23rd at Chimney Corner CIP. Willington GP and Blows Downs. At Rookery CIP six on 7 August, three on 20th and one on 28th, followed by two at Grovebury Farm SP on 16 September and finally one at Radwell GP on 28 October.

Spotted Redshank *Tringa erythropus* One at Tiddenfoot CP on 9 August followed by one at Chalton SW on 14th-20th.

Redshank *T. totanus* At South Mills NR present from 20 January in small numbers until mid-March when a maximum of 28 recorded on 20th and 14 April. At least seven pairs bred raising several broods with fully fledged juveniles noted on 16 June (PO). At Houghton Regis ChP present from 22 February with eventually two pairs displaying there and at Dunstable SW. Breeding was suspected with the final sighting on 10 June (NRF). Rookery CIP attracted at least four pairs to breed with nests and young confirming breeding (RAN). At Bedford SW a pair raised two young and a pair were seen with a single chick at Fenlake Meadows on 30 June. Elsewhere in the breeding season recorded at Radwell GP, Harrold CP, Willington GP, Chimney Corner CIP, Grovebury Farm SP and Cuckoo Bridge GP. Spring passage also noted at New Road SP, Sandy, Blunham Lake, Goldington Power Station, and Stewartby Lake. In the autumn the final records were at Stewartby Lake on 17 September and Clophill on 12 November.

Greenshank *T. nebularia* In the spring singles at Chimney Corner CIP on 23-24 April; South Mills NR 24 April; Radwell GP 6, 7 and 14 May; Houghton Regis ChP 27 May; Willington GP on 7 May and two at Rookery CIP from 28-30 May. In the autumn at the latter site a single on 15 August followed by up to six until 28th with a flock of 17 or 22 on 22nd. Singles noted throughout September at Rookery CIP and Stewartby Lake until 1 October followed by four on 28th at Rookery CIP and a single at South Mills NR on 18 November.

Green Sandpiper *T. ochropus* Up to three recorded all year at South Mills NR but regularly in July and August. Small numbers also present mainly from January-April and July-October at Dunstable SW, Houghton Regis ChP, Rookery CIP, Chalton SW, Chimney Corner CIP, Stewartby Lake, Priory CP, Bedford SW, New Road SP, Battlesden Lake, Clophill, Tiddenfoot SP, Ledburn Rd SP, The Lodge, Everton, Willington GP, Goldington Power Station and Brogborough Lake.

Wood Sandpiper *T. glareola* One at South Mills NR on 17-21 July and one at Rookery CIP on 31 August.

Common Sandpiper *Actitis hypoleucos* The first to arrive was at Goldington Power Station on 20 April followed by a widespread passage across the county's wetland until late May. Return passage from early July to September with late birds at Grovebury Farm SP on 14 October and Stewartby Lake on 30th.

Turnstone *Arenaria interpres* There was only one record at Rookery CIP on 30 July (RAN).

Mediterranean Gull *Larus melanocephalus* A first winter at Chimney Corner CIP on 23 April (MJP) was noted at Rookery CIP in the evening (TR PO) followed by a winter plumage adult at the latter site on 20 September (RAN). At Brogborough Lake two first winters in the roost on 30 September (DJO) with another on 29 October (MJP *et al.*) and 31 December (RAN) with a second winter bird on 15th (RAN). Another good year. From the first county record in 1982 the tally now stands at around 14 individuals.

Little Gull *L. minutus* Singles at Priory CP, Brogborough Lake and Radwell GP on 23 April; Stewartby Lake on 25 April and 8 June; Brogborough Lake on 28 April and Chimney Corner CIP on 14 May. At Priory CP singles present on 3-12, and 17 May and 9 June with two on 13-14 May and 12 on 9th. Rookery CIP had the first returning migrants on 7 July followed by singles at Stewartby Lake on 26 August, 10 September and 18-26 November. Priory CP had one on 8-10 September and 4 October and a single was at Brogborough Lake on 19 November.

- Black-headed Gull** *L. ridibundus* Breeding records at Millbrook CIP (10 pairs), Chimney Corner CIP (c40 pairs) and Coronation CIP (3 pairs). Many thousands at the clay pits during both winter periods. At Stewartby Lake a melanistic bird on 16 December and a partial albino at Brogborough Lake on 25 March.
- Ring-billed Gull** *L. delawarensis* An individual in second year plumage at Brogborough Lake on 25 February (PO TR) has been accepted by BBRC. This is the first county record of what is now a regularly occurring gull along the western seaboard of Britain, from the Nearctic.
- Common Gull** *L. canus* Common throughout the clay pits during the winter months. A light spring passage noted along Blows Downs during April.
- Lesser Black-backed Gull** *L. fuscus* No counts received but numerous at the clay pit tips and lakes during the winter.
- Herring Gull** *L. argentatus* Status as previous species. Individual of the Yellow-legged race *L. a. michahellis* noted at Rookery CIP on 22 August and at Brogborough Lake on 31 December (MJP *et al.*). These are the third and fourth records of a potentially separate species of gull; the first being in 1987 and the second (previously omitted in error) at Brogborough Tip on 2 January 1988 (DJO).
- Iceland Gull** *L. glaucoides* An adult at Brogborough Lake and adjacent fields and refuse tip from 4-11 March (RAH MJP *et al.*) followed by a first winter bird at Stewartby/Rookery CIP on 19 March (MG) and a second winter bird from 19-28 March and 21 April (DJO TR PA *et al.*). In the second winter period a second winter bird at Brogborough Lake on 15 December (RB). The tally now stands at eight.
- Glaucous Gull** *L. hyperboreus* Another remarkable year as follows: first winter period — Brogborough Lake/Tip, an adult seen from 2 January intermittently until 5 February and 19 March (PT PM *et al.*), a second winter on 2 January also seen intermittently until 4 March (MJP RAN *et al.*), and two different first winters from 8 January-4 March (MJP RAN *et al.*) with one seen at Rookery CIP on 27 March. In the autumn a third winter bird at Brogborough on 29 October and 20-25 November followed by a first winter from 27 December (TR MJP *et al.*). 1989 produced approximately six individuals, equalling 1987's tally.
- Great Black-backed Gull** *L. marinus* Large numbers present in the Marston Vale during the winter months.
- Kittiwake** *Rissa tridactyla* An adult at Brogborough Lake on 24-25 March (MJP) followed by one at Chimney Corner CIP on 27 April (DHB).
- Sandwich Tern** *Sterna sandvicensis* Two followed by three at Chimney Corner CIP on 23 April (MJP PO TR). Seven at Radwell GP on 20 August (DSW) with two over Wilden on 25th (IN). At Priory CP a single on 8 September followed an unprecedented 34 on 13th preceding a thunderstorm with three remaining until dusk (DK MJP).
- Common Tern** *S. hirundo* Priory CP had the first record on 9 April, followed by the main arrival in early May across the county's wetlands, and a top count of 23 on 22 May. Breeding recorded at Rookery CIP (3 prs), Harrold CP (1 pr reared one young), Radwell GP (8 prs), Chimney Corner CIP (6 prs) and Grovebury Farm SP (1 pr reared one juvenile). Widespread autumn passage with a peak of 25 at Priory CP on 12 August and 28 at Stewartby Lake on 30 July with a late straggler there on 7 October.
- Arctic Tern** *S. paradisaea* At Priory CP three on 20 April followed by one on 21st, two on 24th, four on 25th, c20 on 27th and one on 7 May. At Stewartby Lake eight on 20 April, two on 21st, one on 23rd, two on 24th, c12 on 25th, and one on 28th-30th. The only autumn record was at Stewartby Lake on 8 October.
- Black Tern** *Chlidonias niger*. First records were five at Stewartby Lake on 3 May followed by seven on 5th, three on 7th, 5 on 9th and singles on 20th and 23rd. Priory CP attracted four on 6 May, singles on 8th, 10th, 11th and 27th, six on 9th, five on 20th and two on 22nd-24th. Elsewhere two at Harrold CP on 4 May, five at Brogborough on 5th, two at Chimney Corner CIP on 7th and 21st, nine at Rookery CIP on 8th and 11th and four over Houghton Regis ChP on 4 June. There was only one autumn record, at Stewartby Lake on 9 September involving five immatures.

- Feral Rock Dove** *Columba livia* The only large counts reported were in Luton with 110 on 3 March and 100 on 11th.
- Stock Dove** *C. oenas* A count of 60 at Bidwell Hill in December was unusual. Otherwise a common and widespread breeding bird.
- Woodpigeon** *C. palumbus* Large influx in October–December across the county's farmland with over 900 over Priory CP on 1 November. A leucistic bird shot at Haynes is now at Bedford Museum (per RB).
- Collared Dove** *Streptopelia decaocto* A count of 50 at Streatley on 10 December was of note and 120 at Bedford SW on 18 October.
- Turtle Dove** *S. turtur* An exceptionally early migrant stayed at Whipsnade Zoo from 12 March until late month. The next record was at Stewartby Lake on 25 April followed by the main arrival in May. Breeding numbers continued to be low at the Old Warden CBC plot with just three pairs breeding in 200 acres. The final migrants were two at Whipsnade Zoo on 16 September.
- Ring-necked Parakeet** *Psittacula krameri* One from 1988 was still present at Southill Park until 9 February and again from November onwards. Also one at Clophill on 14 and 18 July and Sandy on 20 October.
- Cuckoo** *Cuculus canorus* The first at Stewartby on 9 April was early followed by the main arrival on 21st at many localities. The breeding population at Old Warden CBC plot remained stable with the final migrant at Everton on 2 September.
- Barn Owl** *Tyto alba* Confirmed breeding records came from the traditional Willington Dovecote site, Southill Park, Shuttleworth and at a farmland locality in TL 04. Elsewhere reported in the breeding season from a further five areas and at Brogborough in January.
- Little Owl** *Athene noctua* Widely reported throughout the county with confirmed breeding at Houghton Regis ChP, Battlesden, Wardown Hills, Ampthill Park, Upper Caldecote, Tempsford, Cardington and Clophill. Five birds were seen in the Stagsden area in February and regular sightings were reported at Kempston during the breeding season. A comical sight was two perched at opposite ends of a rugby crossbar at Ampthill Park in July.
- Tawny Owl** *Strix aluco* Widespread presence across the county. One–three roosting birds were noted at Bramingham Wood in December.
- Long-eared Owl** *Asio otus* Confirmed breeding at two localities: in woodland on the Lower Greensand Ridge where at least two young were raised and in scrub on the chalk downlands where two juveniles were also noted. At a roost in the south of the county up to 10 birds were present during the first winter period followed by three–four from November onwards. A single noted at Northfield Farm near Chicksands Wood on 18 March.
- Short-eared Owl** *A. flammeus* At a traditional site in the south of the county 'several' were at roost in the first winter period with seven or eight reported in December. In the Rookery/Millbrook CIP area a single from 5 January–25 March and one at Willington on 17 November. On 25 September one was killed by traffic at Wood End near Kimbolton.
- Nightjar** *Caprimulgus europaeus* A pair at Wavendon Heath from 3 June with two fledglings noted on 22 July. Possible one or two other 'churring' males also in the area during the summer. At The Lodge, Sandy a 'churring' bird from 1–14 July with a single sighting at Moneypot Hill on 28 June.
- Swift** *Apus apus* The first was at Priory CP on 24 April and at Whipsnade Zoo and Houghton Regis ChP on 25 April followed by records from several localities until 29th with the main passage in mid-May. A good breeding season due to the dry summer and by the second week of August most birds had departed. September records came from Priory CP on 3rd–5th, Whipsnade Zoo on 7th and finally over Leighton Buzzard on 13th.
- Kingfisher** *Alcedo atthis* Another good year for this superb species with the combination of several mild winters making for a high juvenile success rate. It was recorded throughout the county's wetlands and river systems including some of the smaller brooks and drains and even at Legrave Marsh and Wardown Park in the centre of Luton. Although evidence of breeding came from only 10 localities the breeding population is considered to be far higher. Sites where birds were recorded in every month were Stewartby Lake (DJO) Priory CP (DK) Girtford GP (PO) Dunstable SW (PT) and Woburn Lake (BN).



Hoopoe at Houghton Regis ChP on 24 September 1989

(Photo: Dave Thomas)

Hoopoe *Upupa epops* One at Clapham on 1 May (PA) and a well watched bird at Houghton Regis ChP from 24-27 September (AG DT *et al.*).

Green Woodpecker *Picus viridis* Widely reported from along the Lower Greensand Ridge woodlands and also around the clay pits during the winter periods.

Great Spotted Woodpecker *Dendrocopus major* The most numerous woodpecker species. Birds in atypical habitat on 5 November suggested an autumn movement.

Lesser Spotted Woodpecker *D. minor* Regularly recorded at Priory CP, where a pair bred; Flitwick Moor, a pair reared two young; and at Ickwell. Also noted in the breeding season at Haynes, Woburn Park, Girtford, Rushmere/Stockgrove CP, Warren Wood, Old Warden, Woburn, Whipsnade and Bramingham Wood. Winter records from Clophill and Linslade.

Passerines

Skylark *Alauda arvensis* At the Old Warden CBC plot numbers were down to seven singing males which, apart from 1982, was the lowest ever recorded. A change in farming practices could be the cause, e.g. more oil seed rape being grown. Elsewhere widespread as a breeding species with the following flocks of note: c200 Dunstable SW in January, c200 at Great Barford on 12 March and c300 near Rookery CIP in November. Passage flocks of 20-30 noted during September/October at Dunstable SW and Priory CP.

Sand Martin *Riparia riparia* The first were at Priory CP on 12 March and at several sites from 14th with a top count of c100 at Harrold CP on 29th. Breeding census carried out in the west of the county (PS) as follows:

Leighton Buzzard Golf Course	25 pairs
Ledburn Road SP	40 pairs
Grovebury Farm SP	65 pairs (2 colonies)
Arnold SP	15 pairs
Bennies SP A5	40 pairs
Fullers Earth Quarry, Aspley Heath	15 pairs.

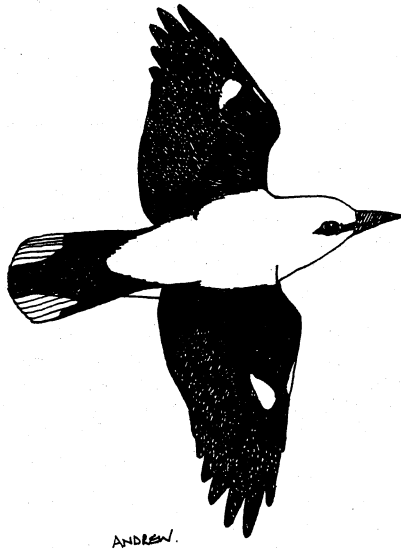
- At Grovebury Farm SP over 120 adults and juveniles present in mid-August with the final sighting on 1 October. The last county record was a group of 16 flying over Houghton Regis ChP on 7 October.
- Swallow** *Hirundo rustica* The first to arrive was very early on 7 March at Priory CP followed by the next sighting at South Mills NR and Harrold CP on 29th. Main arrival in late April across the county. Breeding numbers appeared normal. On return passage up to 250 at Priory in early September with the final migrant at Sandy on 15 October.
- House Martin** *Delichon urbica* Although one at Haynes on 27 March was early, in general this species was very late with the main arrival from the second half of May into June. Breeding colonies of note were 43 nests at Everton (slightly up on last year) (AC) and 20 at Eversholt (KRW). On return passage c400 at Radwell GP on 17 September was of note with the final migrant at Priory CP on 1 November.
- Tree Pipit** *Anthus trivialis* An early migrant was at Houghton Regis ChP on 5 April followed by the next at Blows Downs on 14th with a steady passage into May. Although widespread along the Lower Greensand Ridge during the breeding season numbers at the Aspley Heath complex were low. Breeding also recorded on the chalk downs and Fancott. A light autumn passage noted at Whipnade Zoo in August and over the Ouse Valley gravel pits with the final sighting on 3 September at Radwell.
- Meadow Pipit** *A. pratensis* A wintering flock of c150 at Dunstable SW/Bidwell from January-March was of note. Spring passage at Blows Downs in March/April and Priory CP with a September movement at the latter site peaking on 23rd with 52 birds. At Blows Downs c20 pairs bred and breeding was also recorded at Sharpenhoe Clappers, Deacon Hill, Houghton Regis ChP, Wardown Hills, Chimney Corner ClP and Rookery ClP.
- Water Pipit** *A. spinoletta* One, or probably two, at Cuckoo Bridge GP on 18 April (DHB).
- Rock Pipit** *A. petrosus* One at South Mills NR on 15 January (PO).
- Yellow Wagtail** *Motacilla flava* The first migrant was at Priory CP on 28 March followed by a sustained April passage with a peak of 40 on 26th. At Stewartby Lake noted from 2 April with 48 on 19th. Spring passage also noted at Harrold CP and Dunstable SW with peaks of 20 and 30 on 19th and 24th respectively, and on Blows Downs from 10th where there were 14 on 30th. Individuals of the Blue-headed race *M.f. flavissima* were at Dunstable SW on 17 and 24 April. Breeding was widespread across farmland and wetland with a light autumn passage at many sites before the final two migrants at Grovebury Farm SP on 1 October.
- Grey Wagtail** *M. cinerea* During the winter periods reported from over 30 localities across the county with a noticeable passage at several sites in March and September. Breeding was confirmed at Chalton SW, Heath and Reach, Bromham Mill, Blunham and Clophill.
- Pied Wagtail** *M. alba*. Up to 100 wintered at Dunstable SW with 50 at Biggleswade in January and 61 going to roost over Priory CP on 29th. Spring passage noted at Priory CP, Harrold CP, Stewartby Lake and Blows Downs. White Wagtails *M.a. alba* noted at Radwell GP on 25 March, Stewartby Lake on 20 April and Priory CP on 27th. An October passage of up to 100 noted at South Mills NR.
- Waxwing** *Bombicilla garrulus* Two at Marston Moretaine on 9 January (PA) and a well watched bird on Blows Downs on 15 April (PE KWL *et al.*).
- Wren** *Troglodytes troglodytes* A very good breeding season at Priory CP where 118 territories were located (GD) and at Old Warden CBC plot with 56 singing males the highest since 1978 when 62 were recorded (BN). A succession of mild winters has benefited this species greatly.
- Duncock** *Prunella modularis* Population stable with 35 singing males at the Old Warden CBC plot (BN) and 40 occupied territories at Priory CP (GD).
- Robin** *Erithacus rubecula* At Priory CP 35 occupied territories (GD).
- Nightingale** *Luscinia megarhynchos* At least four singing males were heard during the breeding season at both Potton Wood and Waterloo Thorns, Everton. Elsewhere three were recorded at Old Warden on 29 April, one at Brogborough Lake on 30th and two-three during May at Home Wood. No reports from Maulden Wood or Marston Thrift, in what was a lean year for this declining migrant.

- Black Redstart** *Phoenicurus erythronotus* On Blows Downs noted on only three dates, 27 and 29 March and 9 April. Elsewhere one at Tempsford on 27 March; a male at Winsdon Hill, Luton on 4 April; and a single at Sundon Park, Luton on 17 October.
- Redstart** *P. phoenicurus* At Blows Downs a male on 31 March was followed by singles on 9, 22-24, 27 and 29 April, with two on 26th and 28th, seven on 30th and three on 11 May. Elsewhere singles at Barton Hills on 10 April, Stewartby Lake on 28th, Maulden Wood on 30th, Swiss Gardens on 1 May and Priory CP on 30th. In the breeding season at least six pairs were present in the Charle Wood/Aspley Heath complex where confirmed breeding was reported at three sites and at Millbrook a juvenile was seen on 9 June. In the autumn a passage bird at Houghton Regis ChP on 24-25 September.
- Whinchat** *Saxicola rubetra* At Blows Downs spring passage from 26 April-15 May on nine days with a maximum of three on 9 May. Singles also noted during this period at Priory CP, Wardown Hills and Goldington Power Station. Return passage was noted from 16 July at Wardown Hills with peaks of eight at Dunstable SW in August, four at Stewartby Lake on 16 September and 12 on Blows Downs on 24th. Elsewhere singles or small parties reported from a further seven localities with the latest at Wigmore Park, Luton 17 October.
- Stonechat** *S. torquata* A single at Pegsdon Hills on 20 January followed by one at Priory CP on 30 April. In the autumn two at Stewartby Lake on 15-19 September with a single on 9 December, one at Blows Downs on 24 September, one at Chimney Corner CIP on 9 October and one-two intermittently at Dunstable SW/Houghton Regis ChP from 4 November-29 December.
- Wheatear** *Oenanthe oenanthe* A strong passage recorded on Blows Downs from 11 March until mid-May with a peak of 28 on 22 March and 40+ on 29 April, the latter movement included many Greenland birds. Elsewhere a widespread passage noted at many localities with the earliest at Priory CP on 8 March. In the autumn recorded from only five localities with the last bird at Rookery CIP on 1 October.
- Ring Ouzel** *Turdus torquatus* Another good spring passage on Blows Downs with the first bird on 20 March followed by further records on 31 days until 19 May with mid- and late April peaks of six birds each on 11th and 25th. Elsewhere in April as follows: Bison Hill, one on 3rd; Arlesey, one on 8th; Barton Hills, two on 11th and four on 19th; Wrest Park, one on 19th; Houghton Regis ChP, three on 11th followed by two on 14th, 16th, 18th and 22nd and one at Leighton Middle School on 24th. There was only one autumn record at Blows Downs on 24 September.
- Blackbird** *T. merula* At Priory CP 63 occupied territories were recorded (GD). Partial albinos were reported from Haynes and Bedford.
- Fieldfare** *T. pilaris* In the first winter period widespread but generally in small numbers. Groups of 100-200 noted as follows: Eversholt on 12 March; Linslade on 23 April; Carlton on 7 March; Barton Hill Farm on 9 January; Wyboston on 11 March; Winfield and Barton in January. The final spring sighting was at Blows Downs on 30 April. In the autumn noted from 4 October at Priory CP and widespread in December with flocks of 100 plus reported from Leighton Buzzard and Wooton.
- Song Thrush** *T. philomelos* At Priory CP 32 occupied territories were located (GD) and at the Old Warden CBC plot a dramatic increase in numbers from seven pairs last year to 17 in 1989, the highest since 1979 when 28 pairs bred.
- Redwing** *T. iliacus* Small numbers reported during the first winter period with only one large flock of 113 birds recorded at Stockwood Park, Luton on 5 January. A light passage recorded on Blows Downs with the final sighting on 29 April. The first autumn migrants were at Priory CP on 5 October followed by further sightings over the next few days from Dunstable. Whipsnade, Everton and Clophill.
- Mistle Thrush** *T. viscivorus* Flocks of note included 35 at Luton Hoo in January, 16 near Potton in August and 24 at Tempsford in July.
- Grasshopper Warbler** *Locustella naevia* Migration noted from 14 April at South Mills NR, Blows Downs on 16th, Kempston on 19th and Old Warden on 22nd. 'Reeling' males noted during the breeding season at Warden Little Wood, Warden Great Wood (3), Home Wood (2),

Maulden Wood (4), Old Warden CBC (3), Lowes Wood, Moneypot Hill, Wilstead Wood, Girtford, Everton (2) Tempsford, Brogborough, Sundon Park, Pegsdon Hills, Blows Downs, Dunstable Downs golf course and Priory CP (2).

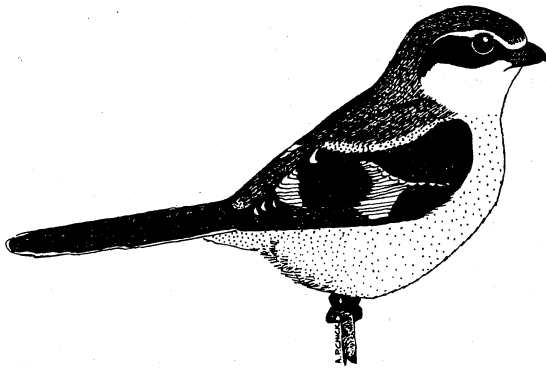
- Sedge Warbler** *Acrocephalus schoenobaenus* An early migrant was at Girtford GP on 29 March followed by the main arrival across the county from mid-April. At Priory CP 47 singing males were noted on 29 April with eventually 107 occupied territories being recorded (DK GD). At Harrold CP 15 males were present in late April. Passage was noted in the autumn at Clipstone Brook, Leighton Buzzard on 1 August and at Priory CP where the last bird was reported on 24 September.
- Reed Warbler** *A. scirpaceus* The first migrant was at Battlesden Lake on 29 April followed by a gradual arrival elsewhere until the beginning of June. Breeding records from Priory CP, where there has been an increase in numbers to 66 pairs, (GD DK); Stewartby Lake (5); Battlesden Lake (6-7); Brogborough Lake; Houghton Regis ChP (12); Bromham (2); Queens Park, Bedford (4); Harrold CP (c20) and East Hyde. A late migrant was at Harrold CP on 1 October followed by several at Priory CP until 4th and a final bird in sub-song on 13th.
- Lesser Whitethroat** *Sylvia curruca* An early migrant was at Barton Hills NR on 14 April with a strong passage recorded at Blows Downs from 20th. Breeding was widespread across the county and the last autumn migrant was at Priory CP on 2 October.
- Whitethroat** *S. communis* Two in a Luton back garden on 28 March were very early with the main passage from late April to early May noted on Blows Downs. Good breeding numbers were reported from Atlas fieldworkers and at Old Warden CBC plot the population remained about average with nine pairs. The final migrant was at Marston Thrift on 18 September.
- Garden Warbler** *S. borin* An early migrant on Blows Downs on 16 April was followed by the main passage county wide from early to mid-May. At Priory CP 18 pairs held territory (GD) and at Old Warden CBC plot a slight decrease was noted to five pairs (BN). Final migrants were at Whipsnade Zoo on 12 September and Priory CP on 14th.
- Blackcap** *S. atricapilla* First winter period records from Barton and Luton with passage birds on Blows Downs from 22 March. An increase in breeding numbers was recorded at Old Warden CBC plot to 11 males (BN) and at Priory CP 27 occupied territories were noted (GD). A late passage bird was at Linslade on 21 October and birds were noted in November-December at Harrold CP, The Lodge, Sandy and at Luton.
- Wood Warbler** *Phylloscopus nitidus* On spring passage three were at Legrave Marsh on 25 April. At Aspley Heath a male held territory from 21-30 May but eventually left the area (PS) and at Houghton Regis ChP a migrant was recorded on 12 August (MP).
- Chiffchaff** *P. collybita* One-two wintering birds in January-February noted at Priory CP and Harrold CP, followed by a noticeable arrival of spring migrants at Priory CP and Blows Downs on 11 March and several other localities on 12th. At Old Warden CBC plot 13 males were recorded in the breeding season, the highest since recording began in 1973. A protracted and widespread autumn passage was recorded well into October at many localities, particularly Harrold CP where the last migrant was on 25 November. November-December records came from Priory CP, The Lodge, Sandy and Stewartby Lake.
- Willow Warbler** *P. trochilus* The first migrant was noted at Blows Downs on 24 March followed by reports from several localities on 28th-30th with the main passage from mid-April. At Priory CP a breeding census recorded 49 occupied territories (GD) but at Old Warden a decrease was noted to 20 singing males, the lowest since 1979 (BN). By mid-September most migrants had departed with the final sighting at Linslade on 8 October.
- Goldcrest** *Regulus regulus* A widespread breeder, particularly along the Lower Greensand Ridge. A light spring passage noted on Blows Downs with larger numbers countywide during October-November. At Bromham one was seen feeding Blue Tit style on a nut feeder.
- Firecrest** *R. ignicapillus* Wintering birds noted at Everton on 1 January (RM), The Lodge, Sandy on 6 January (RB) and Brogborough Lake on 19-26 November (JBT *et al.*). A good series of records from Blows Downs with two males from 21-23 March (LC *et al.*) and a singing male on 4 May (PT). Lastly one at Harlington on 5 May (BN).

- Spotted Flycatcher** *Muscicapa striata* The first to arrive was at Aspley Heath on 29 April followed by the main arrival from mid-May. Breeding numbers appeared to be good and at Priory CP 11 occupied territories were located. A September passage was noted at several localities with the final migrants at The Lodge, Sandy on 25th.
- Pied Flycatcher** *Ficedula hypoleuca* One at Priory CP on 23 April was first followed by singles on Blows Downs on 26th, 28th and 29th, and at The Lodge, Sandy on 28th. On 5 May another was at Priory CP with one at Northill on 6th.
- Long-tailed Tit** *Aegithalos caudatus* At Old Warden CBC plot 10 singing males were recorded, the highest since recording began in 1973 (BN), and at Priory CP eight territories were occupied (GD). The largest flock reported was 30 at Flitwick Moor in January.
- Marsh Tit** *Parus palustris* Widespread during the breeding season. At Old Warden CBC plot eight singing males was the highest since recording began (BN). At Kidney Wood, Luton up to 20 were noted on 27 March.
- Willow Tit** *P. montanus* Reported from 13 localities, mainly along the chalk downlands and Lower Greensand Ridge woodlands.
- Coal Tit** *P. ater* Locally abundant in parkland and the Lower Greensand Ridge conifer woods.
- Blue Tit** *P. caeruleus* A high of 44 males at Old Warden during the breeding season (BN), and 47 at Priory CP where 18 pairs bred in nest boxes (GD).
- Great Tit** *P. major* Numbers were down to 18 males, compared with 26 in 1988 at the Old Warden CBC plot (BN), and at Priory CP 23 occupied territories were identified (GD).
- Nuthatch** *Sitta europaea* The population at Old Warden CBC plot slumped to just two pairs, the lowest since 1976. Elsewhere recorded commonly in parkland.
- Treecreeper** *Certhia familiaris* A widespread breeding population. Good numbers noted at Flitwick Moor throughout the year.
- Golden Oriole** *Oriolus oriolus* A single male near Millbrook Station on 21 May was the first since 1985 (DT).



Golden Oriole

(Andy Chick)



Great Grey Shrike

(Andy Chick)

- Great Grey Shrike** *Lanius excubitor* One at Kempston on 26 January (DJO) was presumably the same bird relocated in the Stewartby Lake/Millbrook CIP area on 29th and recorded intermittently until 4 February (DJO MJP *et al.*). This could also have been the same individual that was seen periodically at nearby Ampthill Park from 29-31 March (DT *et al.*). One at Bolnhurst from at least 4-22 April (MJP BIS).
- Jay** *Garrulus glandarius* A widespread breeder particularly along the Lower Greensand Ridge.
- Magpie** *Pica pica* Up to 100 at the Dunstable Downs roost during both winter periods.
- Jackdaw** *Corvus monedula* Many hundreds at the clay pit refuse tips during the winter months and several hundred over Bromham roost in January and February. A widespread breeding species.
- Rook** *C. frugilegus* Large numbers at the county's refuse tips during the winter. This species continues to establish rookeries around the clay pit windbreaks at Stewartby.
- Carrion Crow** *Corvus corone corone* As with the previous species commonly recorded in large numbers at Brogborough and Elstow refuse tips.
- Starling** *Sturnus vulgaris* There were no reports of large winter flocks. Several thousand noted going to roost at Millbrook in August. Passage was noted in October-November. As a breeding species still widespread and common.
- House Sparrow** *Passer domesticus* A partial albino at Dunstable in February was of note.
- Tree Sparrow** *P. montanus* In the breeding season noted at Ampthill, Tempsford, Maulden, Milton Bryan, Upper Caldecote, Barton Mill, Brogborough, Pulloxhill, Silsoe, Potsgrove, Little Staughton and at four localities in TL02. A flock of up to 60 occurred near Houghton Regis ChP during January-February with up to 100 at Milton Bryan in January. Smaller numbers outside the breeding season were reported from Brogborough, Willington, Grovebury Farm SP and Dunstable SW.
- Chaffinch** *Fringilla coelebs* At Priory CP 56 occupied territories were located (GD). The only large flock was at Dunstable SW during January.
- Brambling** *F. montifringilla* Winter records from Charle Wood, Rowney Warren, Millbrook, Willington, Luton, Broom, Carlton and Dunstable SW. An increase in records from March-April presumably relates to passage birds. At Ampthill Park up to 40 were noted until 19 April; Warren Wood, maximum of six between 29 March-12 April; Bramingham Wood, six on 27 March; Bedford SW, two on 8 March; and singles at Goldington Power Station,

Milton Bryan and Woburn in late March. Autumn records from 16 October with four over Priory CP and one on 12 November, and at The Lodge, Sandy and Blunham also in November.

Greenfinch *Carduelis chloris* Winter flock of 150 at Potton Wood on 9 January was of note. At Priory CP 30 singing males recorded in breeding season (GD).

Goldfinch *C. carduelis* Post-breeding flocks of note included 60 at Stewartby Lake on 3 September and 49 at Priory CP on 8 October.

Siskin *C. spinus* Noted at many localities during the first part of the year with an increase in records during late March/early April, particularly at garden bird feeders, as migrants moved through. Large flocks of note were at Flitwick Moor and Eversholt Lake, up to 50; Clophill c25 in January; Warren Wood, c40 on 26 March; Tempsford, 25 on 8 January; Heath and Reach, 25-30 from 19-22 April; Southill Lake, c30 in February; Brogborough Lake, 18 on 23 April. The final migrant was at Clophill on 13 May and the first to return was at Whipsnade Zoo on 29 September. Notable flocks of 30 at Woburn on 16 October and 20 at Stockgrove Park on 2 December.

Linnet *C. cannabina* The largest recorded flock was at Priory CP in September with 150 followed by groups of up to 100 at Marston Mortaine in January and Grovebury Farm SP in October.

Redpoll *C. flammea* The only double figure flocks reported were 50 at The Lodge, Sandy in January; 25 at Radwell on 28 February; 30 at Woburn on 1 April; 50 at Warren Wood on 9 April and up to 60 at Heath and Reach between 3-19 April. At Priory CP at least four pairs bred.

Crossbill *Loxia curvirosta* At Whipsnade Zoo 10 from 25 January-5 February followed by five on 18 February and 2 March and two on 7 March (CT). Elsewhere five at The Lodge, Sandy on 21 June with 16 on 19 July and two at Maulden Wood on 8 January with a single on 10 December.

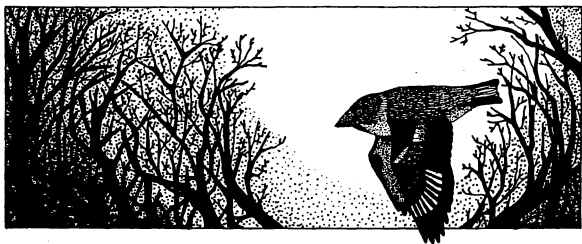
Bullfinch *Pyrrhula pyrrhula* At Priory CP 15 occupied territories were located (GD) during the breeding season.

Hawfinch *Coccothraustes coccothraustes* At Warren Wood small numbers noted during the breeding season and also at Kidney Wood, Badgerdell Wood and Winsdon Hill. Elsewhere single occurrences at Dunstable Golf Club on 7 April, Stockwood Park on 4 July and Southill Park on 12 November.

Yellowhammer *Emberiza citrinella* A decline was recorded at The Old Warden CBC plot to 12 pairs, from 19 pairs in 1980. A flock of up to 300 was in the Dunstable SW/Houghton Regis ChP area in January and 84 were noted at Priory CP on 7 November.

Reed Bunting *E. schoeniclus* At Houghton Regis ChP an estimated 750 birds roosted in the first winter period followed by only 200 later on in the year. The highest number of adults ringed compared to immatures suggested a poor breeding season (NRF).

Corn Bunting *Miliaria calandra* Up to 150 birds roosted at Houghton Regis ChP in both winter periods with c50 at Pegsdon Hills in January-February. Other smaller winter groups noted at Stewartby Lake, Priory CP, Bromham, Blunham and Kempston. Breeding records received from farmland localities across the county and the river valleys.



Hawfinch

(Andy Chick)

MISCELLANEOUS RECORDS

- Whooper Swan** *Cygnus cygnus* One in the Blunham/Girtford area all year. Cleo?
Bar-headed Goose *Anser indicus* One in the clay pits all year and one at Luton Hoo on 17 April.
Snow Goose *A. caerulescens* A blue phase morph in the Harrold/Radwell area all winter with two at Radwell GP on 14 May.
Canada x Greylag *Branta x Anser* Hybrids at Sandy GP on 5 January and Radwell on 4 February.
Ruddy Shelduck *Tadorna ferruginea* One at Woburn Lake on 18 June.
Cape Shelduck *T. cana* One at Woburn Lake on 9 April and at Luton Hoo on 2 October.
Wood Duck *Aix sponsa* Noted at Priory CP with a single in January, April and September.
Hooded Merganser *Mergus cucullatus* One at Twin Bridges GP on 1 January (GDD).
Chukar *Alectoris chukar* Reported from Cotton End, Cardington, Moggerhanger and Biggleswade.
Scarlet Macaw *Ara macao* One at Bedford on 9 December.

ADDITIONS TO 1988 BIRD REPORT

- White-fronted Goose** *Anser albifrons* Three at Radwell Gp on 13 February followed by six on 21st (MJP).
Spotted Redshank *Tringa erythropus* A single at Chimney Corner CIP on 17 September.
Ruff *Philomachus pugnax* One at Stewartby Lake on 16 September.
Oystercatcher *Haematopus ostralegus* Singles at Stewartby Lake on 29 March and 1 April.
Great Grey Shrike *Lanius excubitor* One at Galley Hill, Luton on 6 November (MM).

SELECTED FIRST AND LAST DATES

Summer Migrants

Species	Arrival	Departures
Garganey	South Mills NR 27 March	Dunstable SW 7 August
Hobby	Luton 29 April	Luton 14 October
Little Ringed Plover	Priory CP 18 March	Priory CP 17 September
Greenshank	Chimney Corner CIP 23 April	South Mills NR 18 November
Common Sandpiper	Goldington PS 20 April	Stewartby Lake 30 October
Little Gull	Priory CP, Brogborough Lake Radwell GP 23 April	Brogborough Lake 19 November
Common Tern	Priory CP 9 April	Stewartby Lake 7 October
Arctic Tern	Priory CP 20 April	Stewartby Lake 8 October
Black Tern	Stewartby Lake 3 May	Stewartby Lake 9 September
Turtle Dove	Whipsnade Zoo 12 March	Whipsnade Zoo 16 September
Cuckoo	Stewartby Lake 9 April	Everton 2 September
Swift	Priory CP 24 April	Leighton Buzzard 13 September
Sand Martin	Priory CP 12 March	Houghton Regis ChP 7 October
Swallow	Priory CP 7 March	Sandy 15 October
House Martin	Haynes 27 March	Priory CP 1 November
Tree Pipit	Houghton Regis ChP 5 April	Radwell 3 September
Yellow Wagtail	Priory CP 28 March	Grovebury Farm SP 1 October
Nightingale	Old Warden 29 April	—
Black Redstart	Blows Downs 27 March	Sundon Park 17 October
Redstart	Blows Downs 31 March	Houghton Regis ChP 25 September
Whinchat	Blows Downs 26 April	Luton 17 October
Wheatear	Priory CP 8 March	Rookery CIP 1 October
Ring Ouzel	Blows Downs 20 March	Blows Downs 24 September
Grasshopper Warbler	South Mills NR 14 April	—
Sedge Warbler	Girtford GP 29 March	Priory CP 24 September
Reed Warbler	Battlesden Lake 29 April	Priory CP 13 October
Lesser Whitethroat	Barton Hills 14 April	Priory CP 2 October
Whitethroat	Luton 28 March	Marston Thrift 18 September

Species

Garden Warbler
Wood Warbler
Willow Warbler
Spotted Flycatcher
Pied Flycatcher

Arrival

Blows Downs 16 April
Luton 25 April
Blows Downs 24 March
Aspley Heath 29 April
Priory CP 23 April

Departures

Priory CP 14 September
Houghton Regis ChP 12 August
Linslade 8 October
The Lodge, Sandy 29 September

Winter Migrants**Species**

Bewick's Swan
Goldeneye
Goosander
Golden Plover
Jack Snipe
Fieldfare
Redwing
Brambling
Siskin

Departures

Radwell 19 March
Priory CP 22 April
Blunham Lake 9 April
Nr. Wardown Hill 4 May
Houghton Regis ChP 25 April
Blows Downs 30 April
Blows Downs 29 April
Amphill Park 19 April
Clophill 13 May

Arrivals

Harrold CP 29 November
Brogborough Lake 15 October
Woburn Lake 11 November
Rookery CIP 13 August
Houghton Regis ChP 8 October
Priory CP 4 October
Priory CP 5 October
Priory CP 16 October
Whipsnade Zoo 29 September

PAUL TRODD

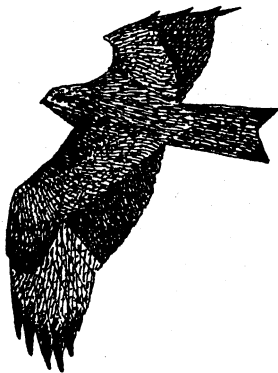
BIRDS NEW TO BEDFORDSHIRE (1989)**BLACK KITE** *Milvus migrans***Little Staughton, 7th June 1989 — Roy A. Nye**

Birders are aware of the old adage of being in the right place at the right time. Well, I certainly was on 7th June 1989. I had set off from home to attend a meeting in the village of Little Staughton, north Bedfordshire and, as normal, I was checking fields and horizon for any interesting birdlife. I was about 200 metres from Little Staughton Airfield when I noticed two corvids apparently mobbing a large raptor in a field to my left. Both corvids (Rooks) were at this time keeping the raptor just a few feet from the ground. I stopped the car immediately and grabbed the binoculars from the back seat. My first thought was that I had located a melanistic Marsh Harrier *Circus aeruginosus*. I focussed onto the three birds, now not more than 100 to 130 metres away and still very close to the ground, and thus had excellent views of the bird.

Uniformly dark, arched wings, slightly forked tail. Habitually twisting from side to side. I was obviously looking at a kite, a Black Kite *Milvus migrans* at that. Stunned wasn't the word! All three were now heading for the lane, just further down toward the old airfield. I jumped back into the car. Still able to observe the kite, I estimated where they would eventually cross over the lane. Rather than get out of the car and possibly disturb them, I sat and waited. It was very worth while. The kite flew over the car, not more than 30 metres above me, allowing excellent views. It was uniformly dark, confirming an adult bird, and lacking the lighter body and paler underwing coverts of an immature. It was possibly a female from comparing the size of the bird with the Rooks.

At this time I made a couple of telephone calls but, frustratingly, no one was around to confirm the bird. However, now that I have received confirmation of acceptance from the BBRC, I know that a Mr Paul Walsingham also reported seeing a Black Kite at 08.15 on 7th June, 1989. Mr Walsingham's Grid Ref. being TL 092 592, mine being TL 105 615, just a couple of kilometres apart.

In all I was able to observe the bird for about 35 minutes. The last I saw of the kite it was heading south-east towards Wyboston and Paxton. A couple of telephone calls and then back to reality and my meeting. Yes, I was a bit late, but that is the way of a birder.



Black Kite

(Andy Chick)

The following identification features are from my field notes:—

Silhouette — smaller, more compact than Red Kite *Milvus milvus*, arched wings when gliding, tail slightly forked. Almost square when spread.

Plumage, from below, uniformly dark. Dark brown, slightly streaked body, underwing dark brown, lighter under coverts to almost black primary tips.

Tail shorter than Red Kite, noticeably less forked, slightly paler than body with slight barring.

Address: 34 Salford Road, Aspley Guise, Milton Keynes

RING-BILLED GULL *Larus delawarensis*

Brogborough Lake, 25th February 1989 — Tim Robson⁽¹⁾ and Paul Oldfield⁽²⁾

On the afternoon of 25th February 1989, we were scanning through a mixed flock of Common, Herring and Lesser Black-backed Gulls at the western end of Brogborough Lake looking for a Glaucous Gull, which was known to be in the area, when PO noticed what, at first glance, appeared to be a large Common Gull with very pale upperparts. Studying the bird through telescopes over the following 15 minutes, during which time it floated alongside both Common and Herring Gulls, we came to the conclusion that it was a 2nd winter plumage Ring-billed Gull. TR left to telephone other birders (who were all out!) and, on returning, was informed that the bird had flown off to the west. However, PO had had good views from which he was able to confirm the identification. Despite searching over the following days the bird was not seen again.

Description

Jizz — Like bulky, elongated Common Gull. When seen next to Common Gull (as it was when first located) it looked slightly “herring gull-ish” but when seen alongside Herring Gulls (as it was most of the time) it was obviously similar to a Common Gull. If there had not been other gulls present for direct comparison, it would most likely have been overlooked and considered a pale Common Gull.

Head — Slightly more angular, less domed than Common Gull. White with streaking particularly on crown, nape, hind neck and ear coverts. Slight ridge over eye, not as gentle-looking as Common Gull, but lacking the fierce expression of Herring Gull.

Upperparts — Mantle, scapulars and coverts very pale grey, much paler than Common Gull, and lacking the white scapular crescent. White tertial crescent thinner and less contrasting than on Common Gull. Primaries uniformly black and longer than those of Common Gull.

Bill — Thick and parallel edged. Rather blunt tipped without pronounced gonial angle. Creamy yellow with a thick black subterminal band.

In flight — (Additional features seen by PO only.) Outer 4-5 primaries all black, black extending to primary coverts and alula. No white mirrors (Common Gull has conspicuous mirrors, Ring-billed Gull normally shows one small one, but it is difficult to see). Wings otherwise same colour as mantle apart from white trailing edge extending to neatly fringed tertials. Broken black subterminal tail band present. (Only very rarely seen in 2nd winter Common Gull.)

Summary — Although this is the first accepted record of Ring-billed Gull in Bedfordshire, it seems likely that others have occurred before, but views have either been too brief or too distant to be confirmed. This record was accepted by the British Birds Rarities Committee because of the prolonged close views in good light with other species alongside for comparison. Given the recent increased interest in gull watching in the county, resulting in greatly increased sightings of Glaucous, Iceland and, to a lesser extent, Mediterranean Gulls, this record will probably not be the last.

Addresses: (1) 27 High Road, Beeston, Sandy, Beds SG19 1NS
(2) 31 College Road, Sandy, Beds SG19 1RJ

RING-NECKED DUCK IN BEDFORDSHIRE

by M.J. Palmer

On New Year's morning 1989, Dave Odell and I arrived at Harrold Country Park at about 9.40 and by 10.20 were well towards the Odell end of the path along the south side of the main lake. I was looking north-west along the shore of the main island for Teal, when a party of four Tufted Duck passed through my view some 100m away. All were asleep with their heads over their shoulders and bills tucked in. I noticed that one of them showed a white eye-ring with drooping white rearward extension towards the hindneck. It held its tail just above the horizontal and had a white inverted crescent to the base of the short tail. I alerted DJO and tentatively suggested female Ring-necked Duck. As it swung a little further round I could see no hint of a tuft, indeed, there was a long straight rear head line forming a right-angle to the nape with the high crown. We hastened the 100m or so to be opposite the duck some 70m away. I began making detailed dictaphone notes which later formed the basis of my full description submitted to, and duly accepted by, the British Birds Rarities Committee. Alan Dyer joined us at 10.30 and, shortly after, the duck raised its head briefly, then, by 10.47, twice more. The full facial and bill patterns were evident and confirmed my identification.

This is only the fourth Bedfordshire record of this Nearctic species, but the first female. The records of drakes were from Luton Hoo 16th April to 7th May 1972, Wyboston GP 19th to 24th February 1979 and Blunham Lake 27th March 1979. It was my tenth wild in Britain, including the Wyboston bird, although only my second female.

I noted the following general details:

Perhaps a fraction larger than the Tufted Ducks, but a good deal smaller than the Pochards present. It once showed aggression towards the Tufted Ducks. Its head was a little bigger than that species with no tuft at the nape. It had a very noticeable dark brown cap to eye level similar to the female Ruddy Duck, also seen quite close by. The Ring-necked Duck had complete white eye-rings and a rearward narrow white line drooping at about 25 degrees and also showed white eyelids. The upper parts and stern were dark brown with whitish undertail coverts and pale brown flanks and breast. The high crown was square-angled to the long straight nape and

Address: 48 Gilbert Close, Kempston, Bedford MK42 8RN

hindneck. When the head was up, the bill of the Ring-necked Duck was longer than that of the Tufted Ducks, deeper based with thicker black nail and bold white sub-terminal band. To either side of the bill were clean off-white vertically ovoid discs to the face, linking under the chin and onto the throat, but not joining over the bill. Once it flew along the surface for a few metres, when some Greylags took off, to show full greyish, not white, wingbars and bright white belly back to the dark grey legs and feet.

We left at 11.10 to telephone the news and then returned to watch the bird continuously from 12.33 to 1.00 pm. It was still present when I revisited the site the following day between 11.40 and 12.40. However, it had gone by the next day.

Where it went in the interim is not known, Felmersham perhaps, but what surely must have been the same bird was found on the north-west pits at Radwell GP on 12th February by Duncan and Mark Woodhead. Dave Ball and I were amongst the first of many to see it there that day. Indeed, many birders came from far and near to see this rarity as it obligingly stayed until at least 25th March (per DSW). I personally watched it extensively during visits to Radwell on 25th February, 4th, 11th and 19th March.

BEDFORDSHIRE BREEDING BIRD ATLAS 1988-1992 PROGRESS REPORT — 1989

by R.A. Dazley

Bedfordshire is one of the few areas which is in the position to update an earlier breeding atlas. When the fieldwork for the new BTO. *Breeding Bird Atlas* began the decision was taken to re-run the county tetrad atlas alongside. Our original bird atlas was surveyed over the period 1968-77 taking ten years to complete but only covered 371 of the county's 377 tetrads, the new atlas is to be run 1988-1992 and will cover all the tetrads. This is only made possible by the increased number of birdwatchers who are now willing to help.

At the end of the 1989 breeding season good progress had been made with 60% of the county's 377 tetrads having had some attention. In an attempt to achieve some standardisation a minimum figure of five hours per tetrad has been set and of the 239 tetrads visited so far 139 (37%) have reached this level.

The south and south-west of the county have been well covered by the fieldworkers in the Luton, Dunstable and Leighton Buzzard areas, many of whom are now travelling further afield. This is something that progressively more people will be asked to do as their local areas come up to standard and we hope for co-operation in this, especially for the far north of the county.

With the onset of the BTO atlas many counties commenced work on their own tetrad atlas, amongst them are the former county of Cambridgeshire and Hertfordshire, who are also updating their previous atlas. As we share boundaries with both these counties we have set up exchanges of information which are already proving beneficial.

Although built-up areas provide numerous fieldworkers, we are finding they are the poorest for variety of species being reported. Anyone who lives or works in one of these areas can therefore help by using the form from the *Muntjac* to record species that are using their garden/factory during the breeding season. This is particularly important in the Luton area which has eight tetrads which are nearly entirely urban. If you do not still have the form or would like extra copies please contact the recorder.

Our original bird atlas coincided with a "Quail year" in 1970 and in fact the birds recorded in that year alone made up 80% of the Quail records for the whole of the ten year period. We again have been lucky enough to coincide with one of these irruptive influxes, with 1989 producing high Quail numbers from around the country. Indeed records for this species came in from a total of 16 tetrads this year compared with three in 1988 and 21 from the whole of the 1968-77 study period.

All that remains is to thank everyone who has done any fieldwork and to urge all on for the remaining three seasons.

Address: 71 Carterways, Dunstable, Beds LU5 4RB

BIRD RINGING REPORT 1989

Report of the Co-ordinator

The year proved to be a successful one with a total of 3857 birds of 70 species ringed, 1243 up on the previous year with a similar species count. Highlights of the year of birds caught include Little Grebe (not commonly caught), Water Rail, Stonechat at South Mills, 45 Corn Bunting at the Houghton Regis roost, a good range of waders, high numbers of *Acrocephalus* and *Phyloscopus* warblers, particularly Chiffchaff, which passed through in high numbers in the autumn period.

The high warbler totals are reflected in the interesting series of recoveries. Three Sedge Warblers are represented, F185534 recovered in Northern France 579 km from the place of ringing, F185682 recovered in Belgium and F185716 which was ringed on the same day as F185534 but recovered 87 km north in Nottinghamshire. Four Reed Warblers are represented, F185628 in France, F185627 in Belgium and two inland movements. Note the French and Belgian birds were ringed on the same day and were consecutive ring numbers. The Sedge Warblers took just two weeks to cover their ground. The Willow Warbler 7V7697 was about to leave the country when caught at Icklesham in Sussex, a site that was, up to a few years ago, just farmland but has now been turned into a wetland area and attracts vast numbers of migrant warblers in autumn. The other highlight was the Wren ringed at Eversholt and recovered 102 km away in Birmingham, a phenomenal movement for this species.

The goose round-up was successful this year and included our first catch at Radwell GP where we controlled two birds from Great Linford, Milton Keynes. A number of recoveries were received falling into the usual pattern, the two most interesting ones are shown.

Once again my thanks go to those ringers who submitted their records promptly and to the various land owners for their permission allowing ringing activities to take place. There are now a number of 'C' ringers in the county which should improve the totals and recoveries.

ACKNOWLEDGEMENTS

A. Chick, N. Finan, M. Hughes, E. Newman, P. Oldfield, P. Wilkinson, M. Woodhead, R. Wooding.

RINGING TOTALS FOR 1989

Little Grebe	1	Lesser Spotted Woodpecker	2	Willow Warbler	278
Mute Swan	3	Sand Martin	2	Goldcrest	31
Greylag Goose	63	House Martin	122	Long-tailed Tit	146
Canada Goose	148	Swallow	121	Marsh Tit	3
Sparrowhawk	4	Skylark	3	Willow Tit	9
Kestrel	1	Meadow Pipit	20	Coal Tit	4
Moorhen	3	Pied Wagtail	11	Blue Tit	394
Water Rail	1	Wren	136	Great Tit	143
Little Ringed Plover	1	Duncock	150	Treecreeper	14
Ringed Plover	4	Robin	89	Jay	1
Lapwing	10	Nightingale	8	Starling	23
Jack Snipe	1	Stonechat	1	House Sparrow	1
Snipe	7	Blackbird	171	Tree Sparrow	1
Common Sandpiper	1	Fieldfare	7	Chaffinch	105
Redshank	2	Song Thrush	51	Greenfinch	201
Black-headed Gull	1	Redwing	38	Goldfinch	5
Woodpigeon	1	Grasshopper Warbler	1	Linnet	13
Cuckoo	2	Sedge Warbler	168	Redpoll	5
Barn Owl	1	Reed Warbler	182	Bullfinch	94
Tawny Owl	1	Lesser Whitethroat	59	Yellohammer	81
Swift	5	Whitethroat	71	Reed Bunting	302
Kingfisher	7	Garden Warbler	59	Corn Bunting	45
Green Woodpecker	1	Blackcap	87		
Great Spotted Woodpecker	2	Chiffchaff	128	TOTAL	3857

SELECTED LIST OF RECOVERIES

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

species	ring number	age code	ringing and recovery dates	ringing and recovery locations	recovery manner	distance (km) and direction
Mute Swan	Z45273	6	30.8.80	Bridge of Dun, Montrose, Tayside	X	518
			16.7.88	Felmersham		SSE
Canada Goose	L04321	3	28.6.86	Harrold CP	+	25
			15.5.89	Brixworth, Northants		50
			28.6.86	Harrold CP		
			30.9.89	Cottenham Fen, Cambridgeshire		
Tufted Duck	FR84678	5	7.1.85	Blunham	+	3868
			17.5.87	Sosyba (Khanty-Mansi), USSR		ENE
Black-headed Gull	U456497	2	11.4.88	Parnu, Estonia, USSR	X	1721
			4.7.88	Priory CP		WSW
Swallow	C819258	3	8.9.88	Radwell GP	V	266
			14.5.89	Mansfield, Darlington, Yorkshire		S
Wren		3	26.9.89	Eversholt	XF	102
			13.10.89	Tysley, Birmingham, W. Midlands		
Sedge Warbler	F185682	3J	12.8.89	Harrold CP	V	372
			25.8.89	Mechelon, Antwerp, Belgium		SE
	F185534	3J	22.7.89	Harrold CP	V	579
			5.8.89	St. Philbert-de-Grand - Lieu		SSE
				Loire Atlantique, France		
F185716	3J	12.8.89	Harrold CP	XF	87	
		26.8.89	West Bridgeford, Nottinghamshire		N	
Reed Warbler	F185628	3J	29.7.89	Harrold CP	V	306
			24.8.89	Oudale, Seine Maritime, France		SE
	F185627	3J	29.7.89	Harrold CP	V	420
			18.8.89	Longchamps, Namur, Belgium		SE
C502537	4	14.6.86	Langtoft, Lincolnshire	V	56	
		24.7.89	Harrold CP		SSW	
			Coate, Swindon, Wiltshire		114	
			Radwell GP			
Chiffchaff	7V7737	3	19.8.89	Harrold CP	V	81
			30.9.89	South Stoke, Oxfordshire		
			14.8.89	Harrold CP		
Willow Warbler	7V7697	3	14.8.89	Harrold CP	V	167
			29.8.89	Icklesham, Sussex		S
Greenfinch	VC67147	3	8.11.87	Lane End, Buckinghamshire	V	45
			30.5.88	Eversholt		
Reed Bunting	C416625	4	22.9.85	Harrold CP	V	39
			1.1.86	Purwell NR, Hitchin, Hertfordshire		

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

D.S. WOODHEAD

DRAGONFLIES (Odonata)

Report of the Recorder

Following a series of rather cool, wet summers 1989 proved to be a remarkable year for dragonflies. The dry, warm spring encouraged species to emerge earlier than in previous years. Throughout the summer most species were recorded in higher numbers than normal. The short period of cool, wet weather at the end of June appeared to be only a minor setback.

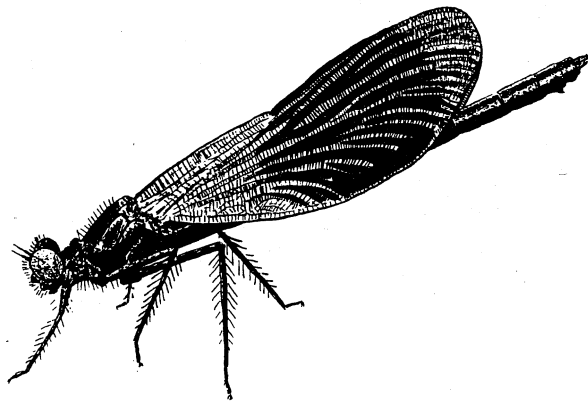
Common species which would normally only receive cursory attention were present at some sites in such high numbers as to be worthy of note. During June the Banded Demoiselle reached almost swarm proportions at some sites along the River Ouse. At Turvey nearly every flower head of an extensive patch of water crowfoot had a male demoiselle perched on it. At Lidlington clay pit on 14th July, the Common Blue Damselfly was observed emerging in thousands. Exuviae and newly emerged adults were found on almost every available stem rising from the water. On the afternoon of 16th July at Stanford pit, larvae of the Azure and Red-eyed Damselflies could be seen swimming towards the bank to emerge en masse on bankside vegetation.

On a July afternoon the sight of many Brown and Southern Hawkers, feeding on midges, at Drakeloe lake in Woburn Park made a memorable sight against the backdrop of a thunderstorm.

The high numbers of dragonflies during the summer provided a valuable food source for some species of birds. Paul Trodd reported seeing Hobbies hawking for dragonflies at Sundon Springs quarry in early summer. Dragonflies are an important food source for this bird of prey early in the nesting season. Along the River Ouse at Felmersham, Pied Wagtails were observed catching Banded Demoiselles and returning to a patch of *Phalaris* to consume them. The chitinous wings were discarded and closer examination revealed a pile of some twenty wings. Similar observations were made at Harrold where the parent birds were seen to fly out over the river to pick off the demoiselles before returning to feed the young at the nest area.

Under favourable conditions some dragonflies manage an extended flight period and this year provided ideal conditions. Common Darters were seen on the wing on 30th October in Chicksands Wood by Dave Parsons, but even this was exceeded by Graham Dennis sighting of the same species on 12th November at Biddenham which included a pair 'in cop'.

The many new records received during the year were incorporated into a provisional atlas which was published by Bedford Museum at the end of the year (Cham, 1990).



Banded Demoiselle — present along the R. Ouse in very high numbers during 1989

(Stephen Cham)

SYSTEMATIC LIST

Tetrad records with a * indicate a new 10 km record.

Zygoptera (Damselflies)

Banded Demoiselle *Calopteryx splendens* An exceptional year for this species which was recorded on all the county's main river systems. Along some stretches of the River Ouse they were counted in thousands. At Stevington and Turvey many individuals could be found roosting in patches of *Phalaris*. One rather puzzling sighting was of a single male in Woburn Safari Park some distance from the nearest known site. During November, developing larvae of varying ages were found in high numbers at several sites along the Ouse. This indicates that the condition of the water in the river is ideal for breeding.

New tetrad records SP92CD, SP93JS*, SP95M, TL03Y, TL04DI, TL13DX, TL14EVW, TL15GU (15)

Emerald Damselfly *Lestes sponsa* This species favours well-vegetated ditches and pits and it continues to spread into new areas as vegetation develops in many of the county's aquatic habitats. It was found for the first time at Maulden Church Meadow pond and at the man made pond on South Beds golf course. Unfortunately one of the best sites in the county, at Brogborough No.2 pit, was destroyed during the year when a drainage ditch was dug through its marshy habitat.

New tetrad records SP93H*, TL02Y, TL03P* (3)

White-legged Damselfly *Platycnemis pennipes* It is pleasing to be able to report that this species appears to have recovered from the crash in numbers which followed bank clearance along the Ouse during the 1970's. During June and July it was particularly abundant at Oakley, Stevington and Willington. Searches along the River Ousel near Leighton Buzzard failed to rediscover this species which has not been recorded there since the 1940's.

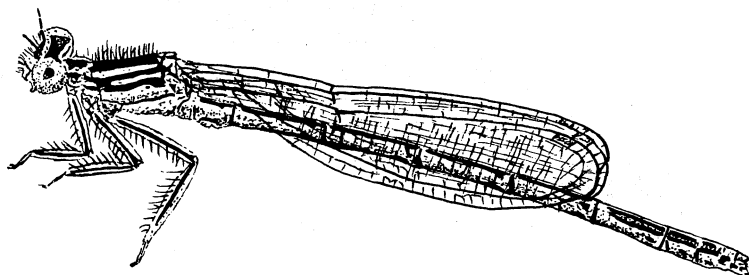
New tetrad records SP95NWX, TL04D, TL05B (5)

Large Red Damselfly *Pyrrosoma nymphula* Nowhere common, but the dominant species at the Wavendon Heath ponds in early summer.

New tetrad records TL03BU, TL15T (3)

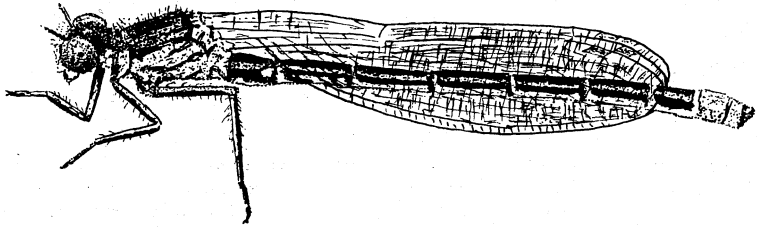
Blue-tailed Damselfly *Ischnura elegans* The county's commonest and most abundant damselfly. Present at many sites in very high numbers.

New tetrad records SP92CDH, SP93EJRSV, TL02Y, TL03BE, TL04EI, TL05BTUYZ, TL13X, TL14KQVW, TL15SUY (26)



White-legged Damselfly — numbers recovering along R. Ouse during 1989

(Stephen Cham)



Red-eyed Damselfly — often found on floating waterweed

(Stephen Cham)

Scarce Blue-tailed Damselfly *Ischnura pumilio* Still present at only two sites in the county.

Numbers at Sundon Springs quarry were not as high as last year. At this site it was interesting to observe females ovipositing in chalk sludge in the seepage zone. The females were seen flying around afterwards covered in dried chalk which gave them an unusual white colouration.

Common Blue Damselfly *Enallagma cyathigerum* Widespread and common during the year. Dave Parsons found an unusual female which had two right angled bends in its abdomen. Despite its contorted appearance it had survived to maturity.

New tetrad records SP92D, SP93JLMRS, TL02Y, TL03B, TL04IP, TL05RUYZ, TL13X, TL14W, TL15SUY, TL25B (20)

Azure Damselfly *Coenagrion puella* High numbers at Stanford pit during July. Widespread but not as common as *I. elegans* and *E. cyathigerum*.

New tetrad records SP93V, TL02Y, TL03E, TL04P (4)

Variable Damselfly *Coenagrion pulchellum* This species occurs on the gravel pits and River Ouse around Huntingdon and St. Ives where it is abundant in some years. Due to the close proximity of these sites it may turn up in the county in future. Searches along the Ouse and around the pits at Wyboston (the most likely area) failed to find this species in the county.

Red-eyed Damselfly *Erythromma najas* A very good year for this species which was found at a number of new sites in the county. It was locally abundant along the slower stretches of the Ouse, particularly those with floating leaves of Yellow Water-lily. The warm summer weather encouraged algal growth and this species was very evident on the floating rafts of algae.

New tetrad records SP92BCH*, SP95GWX, SP95Y, TL03B*, TL04DPZ, TL05BDV*, TL14K, TL15ATUY (19)

Anisoptera (Dragonflies)

Brown Hawker *Aeshna grandis* Very common throughout the county. At Woburn park hundreds of individuals could be seen hawking along woodland rides and over the lakes. The cable car in the Safari Park provided a novel way to observe this species.

New tetrad records SP92B, SP93MSZ, TL02Y, TL03BPM, TL04AN, TL05TUZ, TL14KQW, TL15S (17)

Southern Hawker *Aeshna cyanea* Widespread but not as common as *A. grandis*.

New tetrad records SP92B, SP93L, TL02Y, TL04P, TL05TZ, TL15S, TL25B (8)

Migrant Hawker *Aeshna mixta* Common and widespread. Present in high numbers at Felmersham NR during August. It was interesting to watch this species flying close to bushes picking off insect prey.

New tetrad records SP95N, TL03J, TL04DP, TL05B, TL25B (6)

Emperor *Anax imperator* The males of this species are highly territorial and will pursue and chase away intruders. Consequently only one or two are present at any site. Males holding territories were observed at several sites during the year. Stephen Brookes drew my attention to a 1983 record from Bromham park from where it was previously unrecorded.

New tetrad records SP94V, TL02Y, TL04IPWZ, TL05AD* (8)

Broad-bodied Chaser *Libellula depressa* A very local species. Graham Dennis recorded it at a number of farm ponds around Bolnhurst in the north of the county where it was previously unrecorded.

New tetrad records SP92B, TL04PU, TL05RUY* TL11I, TL14K (8)

Scarce Chaser *Libellula fulva* A national rarity which occurs on the pits and R. Ouse around Huntingdon. It could turn up in Bedfordshire at any time as it has been seen at St Neots just across the county boundary. Searches along the R. Ouse and pits at Wyboston failed to find it.

Four-spotted Chaser *Libellula quadrimaculata* Individuals seen at several sites but nowhere common.

New tetrad records SP92B, SP94QV*, TL03BU, TL05D* (6)

Black-tailed Skimmer *Orthetrum cancellatum* Common during July especially around the brick pit complexes.

New tetrad records SP92B, TL03B, TL04AW, TL14K (5)

Ruddy Darter *Sympetrum sanguineum* This species has a localised distribution in the county but was abundant where it occurs.

New tetrad records SP93GH, TL03P*, TL04IE (5)

Common Darter *Sympetrum striolatum* Very common during August and September and still on the wing in November.

New tetrad records SP92B, SP95T, SP96V, TL02Y, TL03BJ, TL04I, TL05BZ (9)

ACKNOWLEDGEMENTS

I would like to thank the following people for their help in drawing my attention to new dragonfly sites and for sharing interesting observations. J. Adams, R. Brind, S. Brooks, A. Chapman, J. Childs, J. Comont, N. Dawson, G. Dennis, D. Parsons, R. Revels, M. Sheridan, P. Trodd, Mr and Mrs K. Weeden.

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CHAM, S. A. (ed.) 1990 *A provisional atlas of Bedfordshire dragonflies incorporating information for recorders*. Bedford Museum 31 pp.

CORRECTION

In the journal for the year 1988 (*Bedf. Nat.* 43 65) there was an entry under the systematic list which read "Beautiful Demoiselle *Calopteryx splendens*". This should have read "Banded Demoiselle *Calopteryx splendens*".

STEPHEN CHAM

BUGS (Hemiptera-Heteroptera)

Report of the Recorder

This year's report covers two years, last year's was replaced by an annotated checklist. Two species new to the county were found in 1989 and one in 1988. There are still a number of species I expect to find sooner or later, *Orius laticollis* was in this category but *Microvelia pygmaea* was a pleasant surprise, as was *Velia saulii* the previous year. A second locality was added for the spruce bug *Gastrodes abietus*, in fallen Spruce cones in Kingshoe Wood, Tingrith, on 16th April 1989; similar cones in Warden Warren, Old Warden, two months previously had yielded only the much commoner Scots Pine species, *G. grossipes*.

The bedstraw bug *Charagochilus gyllenhalii* is unaccountably scarce in this part of the country but on 5th July 1989 there was a colony of adults and immatures along a green lane near Sharnbrook (Yelnow Lane). The lace-bug *Physatocheila dumetorum* has been on the county list for 13 years on the basis of a single specimen. I have now found that it is actually common and widespread on fruiting Hawthorn in late summer.

Zicrona caerulea is an attractive metallic-blue shield-bug, as its name might suggest, but is infrequently found. However, there were three amongst *Juncus* and *Galium* at Dropshort Marsh NR, Toddington, on 10th September 1989 and one 19th March 1989 amongst litter in cleared woodland at Wavendon Heath. The heather shield-bug *Rhacognathus punctatus* was again found at Coopers Hill, 27th July 1989. *Troilus luridus*, another of the less common shield-bugs of the county was found in a new locality, Rowney Warren, a nymph feeding on a larva of *Coccinella 11-punctata*.

ADDITIONS TO THE BEDFORDSHIRE LIST

Cimicidae

Orius laticollis (Reuter) A male was found on Osier (*Salix viminalis*) at Harrold-Odell Country Park on 8th September 1989. There are few British records of this bug but it is a relatively recent addition to the British list and is probably under-recorded.

Veliidae

Velia saulii Tamanini A colony found along the margins of the River Ivel at Biggleswade Common on 3rd April 1988. This species is rarely recorded in lowland Britain although there is a Hertfordshire record, which I had found surprising until now. This 'Water Cricket' is more typical of the boulder beaches of upland rivers and lake shores. (The species was included in the annotated checklist forming last year's Recorder's report on the basis of the present record.)

Microvelia pygmaea (Dufour) A colony found at Flitwick Moor in *Carex rostrata* swamp on 29th April 1989. This bug is listed in Category 3 of *British Red Data Books: 2. Insects* (D.B. Shirt 1987, Nature Conservancy Council), this category indicating 'Rare' in Britain; this probably overstates its rarity.

The above records bring the Bedfordshire list to 324 species.

B.S. NAU

BUTTERFLIES (Lepidoptera)

Report of the Recorder

The winter was mild and dry, the spring was early and so the year had promise of a good butterfly season. This was the first impression gained of 1989 and as the year progressed so it was proven to be correct. Being mild and dry provided some protection against the usual massive losses of overwintering larvae and eggs due to fungal disease. Many observers say that it was the best year since 1976. That year ended in disaster as the hot weather carried on too long and upset the overwintering patterns of the various species. Fortunately this did not occur in 1989, we had a very good year without having to pay the consequences.

John Adams and David Parsons carried out a weekly transect survey of Rowney Warren Wood, a Forestry Commission plantation consisting mostly of Corsican and Scots Pine. Their results proved that this type of habitat is not as desolate as would at first appear. They recorded 18 species with a total of 547 individuals in all, the most commonly seen species being the Meadow Brown which made up nearly half the total number of butterflies. On the other hand Ian Woivod continued his transect studies of Potton Wood, which is a mixed and much more open woodland, much older than Rowney Warren Wood and with a much more diverse ground cover. Here he recorded 21 species of butterfly with a total of over 4,000 individuals. There the predominant species was the Green-veined White closely followed by the Small White, with both species numbering over 1,000 individuals.

One would naturally assume that by now, in our total knowledge of British butterflies there would not be much new to learn of their habits and lifestyles. However, Betty Clutten observed a colony of Green-veined Whites feeding on a patch of Great Willowherb, which was growing next to a patch of Meadow Thistle. There were 11 species present in all, including Large and Small Whites. They all chose to feed from the thistle except the Green-veined White which fed exclusively from the Willowherb. Apparently this is not the first time that Betty has observed this occurrence, but I cannot find any mention or explanation in any written work on British butterflies suggesting that there is still much to be learnt about preferred food plants.

Nymphalidae

Commas had a very good season as did Peacocks and Red Admirals, but Small Tortoiseshell numbers were down on previous years. It would appear that the balance between them and their parasites currently favours the parasite, which is a regular event following an irregular cycle. White Admirals were seen again in West Wood and a new site was found in Chicksands Wood by David Parsons, and the species seems to have had a very good year throughout the whole of its British range. Painted Ladies were scarce, with a very few sightings, but Mrs Smith of Amptill was lucky to record a single insect from the second brood. The best news of the year must be from Clapham Park Wood, where Graham Dennis saw a Silver-washed Fritillary later on in July. This insect could be a released specimen being so close to Bedford, but I have no record of any releases in the area.

Pieridae

Small White and Green-veined White were seen in very large numbers especially on the second brood. Brimstones, on the other hand, were not as common as the mild winter would have led to be expected. Orange-tip were seen in moderate numbers only and there was no sign of the rare second brood that occurred in the more southerly regions of Britain. The Wood White was again recorded from Maulden Wood where it was thought to have died out due to habitat disturbance. The only record of Clouded Yellow this year was once again from the Smith family of Amptill when David reported a single individual from Reddings Wood.

Satyridae

This group had in the main a very successful season. Record numbers of Ringlet, Wall and Speckled Wood were seen, while Meadow Brown, Small Heath and Gatekeepers seem to have had a normal year. The former three species need dull damp weather to breed in, followed by warm sunny days to nurture the young larvae, this they seem to have had this year.

Lycaenidae

Once more the Common Blue lived up to its name and was commonly seen all over the county. It has suffered badly in recent years and it was amazing to see its powers of recovery in just the one year. The same was true of the Small Copper, and we were once more to be thrilled to see this little jewel-like insect in large numbers feeding from the blossoms of its favourite Ragwort plants. Chalk Hill Blues and Brown Argus Blues seem to have done well as did the Small Blue, but the Holly Blue was not seen by most recorders and seems to have had a bad year once again.

Green Hairstreaks were the best recorded of this small group, but only one person, Martin Palmer, was lucky enough to see ten in one day and that was at a new site he discovered at Stewartby Lakes. White-letter Hairstreak turned up at two new locations in Chicksands Wood and were seen by quite a number of recorders this year but no new localities seem to have been found, and the Black Hairstreak was only seen by one person in its Marston Thrift site.

Purple Hairstreak was recorded from a few of its known sites, but once again no new localities are identified.

Nemoebiidae

The Duke-of-Burgundy was seen at all its known sites and seems to have had a good year but as it is an elusive species it is difficult to assess its true status.

Hesperiidae

Large and Small Skippers seem to have been subject to population explosion and for those persons who had the time to check out the small ones their reward was sightings of the Essex Skipper among them. Grizzled and Dingy Skippers had a generally poor year compared to the other three species and for them no new sites were found.

ACKNOWLEDGEMENTS

My thanks go to the following people who made the time and effort to contribute this year to ever increasing knowledge of the county:

J. Adams, A. Aldhous, P. Almond, D. Anderson, V. Arnold, R. Bashford, C. Baker, Mr and Mrs Bowskill, J. Childs, B. Clutton, G. Dennis, Mr and Mrs P. Hooper, B. Nightingale, A. Outen, D. Parsons, S. Pittman, Mr and Mrs D. Smith, B. Stephenson, P. Trodd, H. Winter, I. Woiwod.

ALAN J. MARTIN

MICRO-MOTHS (Lepidoptera) Report of the Recorder

During the 1980's the county list has increased from 418 to 680 species of micro-lepidoptera, including the seven new species recorded in 1989.

ADDITIONS TO THE BEDFORDSHIRE LIST

Yponomeutidae

Yponomeuta rorrella at Clifton (23 July)

Eidophasia messingiella in trap at Cockayne Hatley (June)

Elachistidae

Elachista apicipunctella in trap at Cockayne Hatley (May)

Olethreutinae

Blastesthia turionella (Pine-bud moth) in trap at Cockayne Hatley (June)

Pyralidae

Perinephela lancealis at Aspley Heath (14 July)

Opsibotys fuscalis at Clifton (23 July)

Pterophoridae

Adaina microdactyla in trap at Cockayne Hatley (August)

ACKNOWLEDGEMENTS

I would like to thank the following for records and specimens sent to me during the year:
V.W. Arnold, Mr and Mrs E.G. Bowskill, A.R. Outen, R. Passley, R.C. Revels, I. Woiwod.

DAVID MANNING

MACRO-MOTHS (Lepidoptera) Report of the Recorder

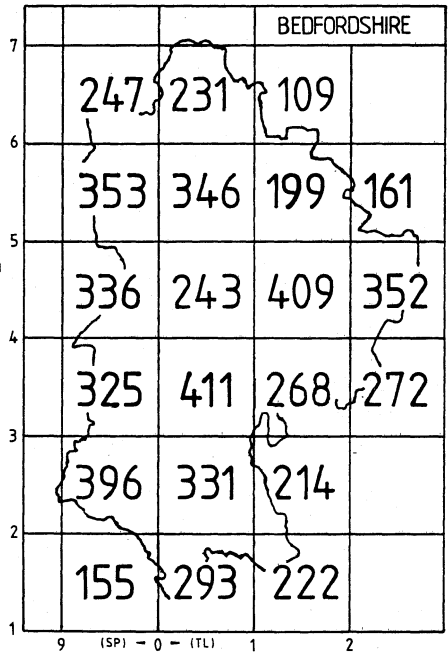
Despite the fact that 1989 was a good year for weather, it was not very good for moths. A good season for moths needs a cold winter and a warm spring and summer. The very mild winter of 1988-89 meant that too many predators survived so that in the spring and summer of 1989, the caterpillar population was heavily preyed on. A lot of the summer nights were cloudless and on many occasions cold. Not ideal for insects or moth trapping. As an example of this, I noted in my field note book that on the 14th July at Aspley Heath just 24 species were recorded, and on the 21st July at Church End, Maulden, 51 species were recorded. I consider this latter number to be rather low for late July.

Most of the usual sites were looked at during the year. One new one, Begwary Brook, Wyboston, was all too briefly looked at late in the season. It is hoped that this site may prove interesting on future visits.

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).

- 14 **Ghost Moth** Still a familiar sight throughout the county — can be found flying over grassy areas in June and July.
- 17 **Common Swift** Common, but fewer records for 1989 than usual.
- 374 **Yellow-legged Clearwing** A very scarce insect — not recorded from the county since 1978, when it was seen at Sewell.
- *380 **Red-tipped Clearwing** A new county record from a site by the River Ouse, north of Great Barford. Recorded by S. Cham on 14 July 1989.
- 1652 **Peach Blossom** A very attractive moth that comes readily to light between June and September. Found throughout the county.
- 1665 **Grass Emerald** A scarce insect, not recorded since 1986 from Aspley Heath. The larvae feed on the flowers of gorse and broom.
- 1673 **Small Emerald** A local insect that is probably under-recorded. The larval food plant is Traveller's-joy — so it should be more common than records show.



Number of species recorded in
each 10km square — as at 31.12.89

- 1679 **False Mocha** Last recorded from Maulden Wood in 1980.
- 1708 **Single-dotted Wave** Widely distributed, but only recorded from two sites during 1989.
- 1725 **Dark-barred Twin-spot Carpet** Can be found throughout the county, but not as common as in the past.
- 1732 **Shaded Broad-bar** A common moth found throughout the county flying during the day and also coming to light.
- 1739 **Wood Carpet** Not recorded since 1976 — from a Rothamsted trap at Cockayne Hatley. The larvae feed on bedstraw.
- 1764 **Common Marbled Carpet** A common moth, found throughout the county.
- 1765 **Barred Yellow** A common moth, found throughout the county.
- 1776 **Green Carpet** A very attractive insect that is a widely distributed Bedfordshire moth. The larvae feed on bedstraw.
- 1777 **July Highflyer** A common moth, found throughout the county.
- 1792 **Dark Umber** A local species, found where its larval food plant, Buckthorn, grows. Only a few records over the past two years.
- 1837 **Grey Pug** A widely distributed Bedfordshire moth.
- 1849 **Ash Pug** A scarce Bedfordshire moth. Last recorded from Mr and Mrs E.G. Bowskill's garden light trap at Stotfold, in 1987.
- 1852 **Brindled Pug** The first pug on the wing. Can be found during April and May (sometimes earlier) throughout the county.
- 1884 **The Magpie** A common moth, found throughout the county.
- 1894 **Latticed Heath** Normally a common moth, found throughout the county flying by day and coming to light. Both 1988 and 1989 were bad years for this species.
- 1917 **Early Thorn** A common Bedfordshire moth.
- 1921 **Scalloped Oak** A well-distributed Bedfordshire moth — it has become rather scarce over the last two years.
- 1940 **Satin Beauty** One, at light, 14 July 1989 Aspley Heath. Identity confirmed by Mr S. Blathwayt. Last recorded from a Rothamsted trap at Eaton Bray in 1981.
- 1987 **Bedstraw Hawk-moth** One, at light, London Road, Biggleswade. This is the second time this species has been recorded by R. Revels.
- 1991 **Elephant Hawk-moth** One of the most attractive moths to be found in Bedfordshire. Can be found throughout the county.
- 2008 **Coxcomb Prominent** A common moth, widely distributed throughout the county.
- 2009 **Maple Prominent** This species is normally found in wooded areas on chalky soils. Recorded by R. Passley and D.V. Manning from West Wood, Knotting.
- 2060 **White Ermine** A common moth, found throughout the county.
- 2082 **Garden Dart** This moth seems to have become rather scarce over the last two years. Only recorded in 1989 from L. Field's garden moth trap in Kingsdown Avenue, Luton. Probably under-recorded.
- 2092 **Shuttle-shaped Dart** A common moth, found throughout the county.
- 2112 **Least Yellow Underwing** Probably the most uncommon of the "underwings". Recorded at Church End, Maulden, by the recorder, and from Mr and Mrs E.G. Bowskill's garden light trap at Stotfold.
- 2113 **Stout Dart** This moth has always been uncommon, but it was not recorded at all in 1989, although it had turned up in Mr and Mrs E.G. Bowskill's garden light trap, in Stotfold, in 1986, 87 and 88.
- 2114 **Double Dart** Well-distributed throughout the county — only recorded twice in 1989 — Coppice Wood, Melchbourne and West Wood, Knotting by R. Passley.
- 2120 **Ingrailed Clay** A common Bedfordshire moth.
- 2134 **Square-spot Rustic** This species has now been recorded from all of the 10Km squares in Bedfordshire.
- 2139 **Red Chestnut** Normally considered to be a common Bedfordshire moth, this species was only recorded twice in 1989. From Coppice Wood, Melchbourne and West Wood, Knotting by R. Passley.

- 2148 **Pale Shining Brown** This moth has always been uncommon in the county, but has not now been recorded since 1987. This was from West Wood, Knotting by R. Passley and D. V. Manning.
- 2164 **Broad-barred White** Some years this species appears to be common. It comes readily to light, between June and August. Only on record in 1989 — from R. Revels' garden light trap, London Road, Biggleswade.
- 2187 **Common Quaker** A common Bedfordshire moth.
- 2188 **Clouded Drab** A common Bedfordshire moth.
- 2189 **Twin-spotted Quaker** This moth can be found during March and April. It comes to light, and sugar, and it seems to prefer wooded areas. Recorded at Coppice Wood, Melchborne and West Wood, Knotting, in 1989 by R. Passley.
- 2190 **Hebrew Character** A common Bedfordshire moth.
- 2192 **Brown-line Bright-eye** This is a widely distributed Bedfordshire moth, but, once again appears to have become scarce over the last two years.
- 2235 **Tawny Pinion** A rare Bedfordshire moth. Recorded from Coppice Wood, Melchborne, in April, 1989 by R. Passley.
- 2302 **Brown Rustic** This moth can be found throughout the county, but seems to have become scarce in 1988 and 1989.
- 2318 **The Dun-bar** A common Bedfordshire moth.
- 2341 **Cloaked Minor** Widely distributed, but only recorded from two sites in 1989.
- 2345 **Small Dotted Buff** Normally considered to be a common moth — recorded from only Coppice Wood, Melchborne and West Wood, Knotting, in 1989, by R. Passley.
- 2352 **Dusky Sallow** This species flies during the day and also comes to light. Some years (1983, 84 and 86) it is common, but from 1987 it appears to have become scarce.
- 2361 **Rosy Rustic** At light, by the recorder 1 September 1989 Begwary Brook, Wyboston. This species never appears to be abundant.
- 2434 **Burnished Brass** A common Bedfordshire moth.
- 2439 **Gold Spot** This rare Bedfordshire moth was taken at light, by R. Revels from his garden light trap, in London Road, Biggleswade.
- 2450 **The Spectacle** A common Bedfordshire moth.
- 2469 **The Herald** This attractive moth was recorded from a variety of sites during 1989. As it hibernates in outbuildings etc., it can often be found with bat roosts. The Bedfordshire Bat Group reported four from Barton Lime Quarry on the 18th February, 1989, and on the same day, 28 from an Ice House at Woburn.
- 2474 **Straw Dot** A common Bedfordshire moth.
- 2488 **Common Fanfoot** Despite its name, this species was always considered scarce in the county. It has not been recorded since 1983, and because it is difficult to distinguish this species from the other similar fanfoots, it may have been incorrectly identified in the past.
- 2492 **Small Fanfoot** A common Bedfordshire moth.

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ADDENDUM

- 1758 **The Spinach** (*Bedf. Nat.* 43 70) number should read 1757.

V.W. ARNOLD

BEETLES (Coleoptera) Report of the Recorders

Pitfall traps were used again as the main tool for monitoring beetles at several sites over an extended period in 1989. However, considerable use was also made of a piece of apparatus known as the Berlese-Tullgren Funnel. This allows the extraction of insects and other invertebrates from small amounts of material such as leaf litter, compost and soil. Decaying vegetation of all kinds provides a favoured habitat for a wide variety of beetles. The Berlese-Tullgren Funnel is a circular metal funnel with a wire mesh platform near the top. The material is placed on the mesh and an electric light bulb is positioned above it. Insects move away from the heat of the bulb and pass through the wire mesh to fall into a collecting tube attached to the narrow end of the funnel.

During the year beetles were recorded at eight main sites, three of which — Potton Wood, Blows Downs and the roadside verges near Woburn — had also been investigated in 1988. For these three sites, only those species not listed in last years report are mentioned below. Throughout the report the symbol (*) denotes species new to the Bedfordshire county list, whilst (Na) and (Nb) are used to indicate Nationally Notable species as defined in the 1988 report (*Bedf. Nat.* 43 78).

The nomenclature used follows Kloet and Hincks *Checklist of British Insects* (revised edition 1977) published by The Royal Entomological Society of London.

POTTON WOOD (TL2550 & TL2549)

This SSSI consists of ancient woodland on chalky boulder clay with some more recent coniferous planting. Pitfall traps were operated between early May and November and were all placed in TL2550. Beetles were also extracted from leaf litter samples collected in September and October, some in TL2550 and some in TL2549. Species recorded in 1989 but not caught in 1988 were:—

Carabidae — *Asaphidion curtum** (Na), *Badister sodalis* (Nb), *Bembidion biguttatum*, *Calathus piceus*, *Leistus rufescens*, *Pterostichus melanarius*, *Trechus secalis* (Nb).

Hydrophilidae — *Cercyon convexiusculus**, *Helophorus brevipalpis*, *Helophorus grandis**.

Ptiliidae — *Ptenidium pusillum**.

Leiodidae — *Anisotoma humeralis*, *Catops tristis*, *Nargus wilkinki*, *Sciodrepoides watsoni*.

Scydmaenidae — *Cephenium gallicum*, *Stenichnus collaris*.

Staphylinidae — *Aleochara bipustulata*, *Amischa decipiens**, *Anotylus rugosus*, *Anthobium atrocephalum*, *Carpelimus corticinus*, *Carpelimus elongatulus*, *Geostiba circellaris*, *Ocalea picata*, *Olophrum piceum*, *Omalius caesum*, *Omalius rivulare*, *Quedius picipes*, *Stenus impressus*, *Tachyporus hypnorum*, *Tachyporus obtusus*.

Scirtidae — *Cyphon ochraceus**.

Nitidulidae — *Glischrochilus hortensis*.

Cryptophagidae — *Atomaria fuscicollis*, *Cryptophagus setulosus*.

Phalacridae — *Stilbus testaceus*.

Coccinellidae — *Propylea quattuordecimpunctata*.

Lathridiidae — *Aridius bifasciatus*, *Corticarina fuscata*, *Corticarina gibbosa*, *Enicmus histrio*, *Stephostethus lardarius*.

Chrysomelidae — *Aphthona atrocaerulea**, *Chaetocnema concinna*, *Phyllotreta undulata*.

Curculionidae — *Acalles ptinoides* (Nb), *Ceutorhynchus floralis*, *Ceutorhynchus quadridens*, *Euophryum confine*, *Leiosoma deflexum*, *Sitona lineatus*.

COCKAYNE HATLEY WOOD (TL2650)

Ancient woodland very close to Potton Wood. Pitfall traps were run between early May and November. Beetles were also extracted from leaf litter samples collected in early September.

- Carabidae** — *Abax parallelepipedus*, *Agonum moestum*, *Amara plebeja*, *Asaphidion curtum** (Na), *Badister bipustulatus*, *Bembidion biguttatum*, *Bembidion guttula*, *Bembidion lampros*, *Bembidion obtusum*, *Bembidion unicolor*, *Carabus violaceus*, *Clivina fossor*, *Demetrias atricapillus*, *Leistus fulvibarbis*, *Loricera pilicornis*, *Nebria brevicollis*, *Notiophilus biguttatus*, *Notiophilus rufipes*, *Patrobus atrorufus*, *Pterostichus madidus*, *Pterostichus melanarius*, *Pterostichus nigrita*, *Pterostichus strenuus*, *Trechus secalis* (Nb).
- Hydrophilidae** — *Anacaena globulus*, *Cryptopleurum minutum*, *Helophorus brevipalpis*, *Megasternum obscurum*.
- Leioididae** — *Anisotoma orbicularis**, *Catops fuliginosus*, *Choleva agilis**, *Choleva angustata*, *Leiodes strigipenne** (Na), *Nargus velox*, *Ptomaphagus subvillosus*, *Ptomaphagus varicornis* (Na), *Sciodrepoides watsoni*.
- Scydmaenidae** — *Cephenium gallicum*, *Neuraphes elongatulus*, *Stenichnus collaris*.
- Staphylinidae** — *Anotylus rugosus*, *Anotylus sculpturatus*, *Anthobium unicolor*, *Carpelimus elongatulus*, *Dropephylla ioptera*, *Geostiba circellaris*, *Lathrobium brunripes*, *Micropeplus tesserula**, *Olophrum piceum*, *Omalium caesum*, *Omalium italicum*, *Omalium rivulare*, *Omalium septentrionis**, *Othius myrmecophilus*, *Philonthus decorus*, *Philonthus fimetarius*, *Philonthus marginatus*, *Phyllodrepa floralis**, *Proteinus atomarius**, *Proteinus brachypterus*, *Proteinus macropterus*, *Quedius fuliginosus*, *Staphylinus globulifer*, *Staphylinus olens*, *Stenus impressus*, *Tachinus signatus*, *Tachyporus chrysoelinus*, *Tachyporus hypnorum*, *Tachyporus obtusus*, *Tachyporus solutus*, *Xantholinus glabratus*.
- Cantharidae** — *Rhagonycha fulva*.
- Nitidulidae** — *Epuraea unicolor*, *Glischrochilus hortensis*, *Meligethes aeneus*.
- Rhizophagidae** — *Rhizophagus bipustulatus*, *Rhizophagus perforatus*.
- Cryptophagidae** — *Atomaria atricapilla*, *Atomaria fuscicollis**, *Atomaria nitidula**, *Cryptophagus dentatus*-group.
- Byturidae** — *Byturus ochraceus*.
- Phalacridae** — *Stilbus testaceus*.
- Coccinellidae** — *Coccinella septempunctata*.
- Lathridiidae** — *Aridius bifasciatus*, *Aridius nodifer*, *Corticicaria gibbosa*, *Enicmus histrio*, *Lathridius pseudominutus**.
- Cisidae** — *Cis vestitus**.
- Tenebrionidae** — *Scaphidema metallicum* (Nb).
- Salpingidae** — *Rhinosimus planirostris*.
- Scraptiidae** — *Anaspis maculata*.
- Cerambycidae** — *Grammoptera ruficornis*.
- Chrysomelidae** — *Chaetocnema concinna*, *Oulema melanopa*.
- Apionidae** — *Apion carduorum*, *Apion virens*, *Apion vorax*.
- Curculionidae** — *Acalles ptinoides* (Nb), *Barypeithes araneiformis*, *Barypeithes pellucidus*, *Ceutorhynchus floralis*, *Ceutorhynchus quadridens*, *Liophloeus tessulatus*, *Phyllobius roboretanus*, *Rhyncolus lignarius*, *Sitona lineatus*.

BLOWS DOWNS, DUNSTABLE (TL0422)

Chalk downland with mainly hawthorn scrub and open grassland, kept short by grazing. Pitfall traps were run between May and early August. Some sweep netting was also done in May and June. Species recorded in 1989 but not caught in 1988 were:—

- Carabidae** — *Notiophilus biguttatus*, *Notiophilus palustris*.
- Leioididae** — *Agathidium marginatum* (Nb), *Colon serripes* (Na), *Ptomaphagus subvillosus*.
- Staphylinidae** — *Encephalus complicans*, *Lesteva longoelytrata*, *Omalium caesum*, *Othius punctulatus*, *Platydracus stercorarius*, *Rugilus rufipes*, *Sepedophilus nigripennis*, *Staphylinus globulifer*, *Stenus brunripes*, *Stenus flavipes*, *Tachinus marginellus*, *Tachyporus obtusus*.
- Elateridae** — *Athous bicolor*.

- Cantharidae** — *Cantharis decipiens*, *Cantharis nigricans*, *Cantharis rustica*, *Malthodes minimus*, *Rhagonycha femoralis*.
- Cryptophagidae** — *Atomaria nitidula**, *Cryptophagus setulosus*.
- Coccinellidae** — *Adalia bipunctata*, *Adalia decempunctata*, *Coccinella septempunctata*, *Propylea quattuordecimpunctata*, *Rhizophagus litura*, *Subcoccinella vigintiquatuor punctata*.
- Tenebrionidae** — *Isomira murina*.
- Scaptiidae** — *Anaspis maculata*.
- Chrysomelidae** — *Aphthona atrovirens** (Nb), *Cassida rubiginosa*, *Cryptocephalus labiatus*, *Derocrepis rufipes*, *Oulema melanopa*.
- Apionidae** — *Apion carduorum*, *Apion curtirostre**, *Apion onopordi*.
- Curculionidae** — *Ceutorhynchus erysimi*, *Cidnorhinus quadrimaculatus*, *Phyllobius roboretanus*, *Polydrusus cervinus*.

WOBURN (ASPLEY GUISE) (SP9435)

Pitfall traps were run between early May and the end of July in roadside verges near a hedgerow and near a stream, both bordering arable fields. Beetles were also extracted from leaf litter collected from roadside verges near a stream on 23 November, and from soil samples collected from arable fields on 21 September. Species recorded in 1989 but not caught in 1988 were:—

- Carabidae** — *Amara aenea*, *Amara familiaris*, *Amara lunicollis*, *Bembidion guttula*, *Bembidion lunulatum*, *Bembidion obtusum*, *Bembidion quadrimaculatum*, *Notiophilus palustris*, *Pterostichus niger*, *Pterostichus strenuus*.
- Halipidae** — *Haliplus lineatocollis*.
- Dytiscidae** — *Hydroporus memnonius**.
- Hydrophilidae** — *Cercyon melanocephalus*, *Helophorus brevipalpis*.
- Ptiliidae** — *Ptenidium pusillum**.
- Leiodidae** — *Agathidium laevigatum*, *Catops morio**, *Catops tristis*, *Choleva glauca**, *Choleva jeanneli** (Nb), *Choleva oblonga*, *Colon brunneum* (Nb), *Nargus anisotomoides*, *Sciodrepoides fumata*, *Sciodrepoides watsoni*.
- Staphylinidae** — *Aleochara bilineata**, *Amischa analis*, *Amischa decipiens**, *Anthobium atrocephalum*, *Atheta fungi*, *Autalia impressa*, *Carpelimus elongatulus*, *Gyrophypnus angustatus*, *Lathrobium brunripes*, *Lathrobium geminum*, *Lesteva heeri*, *Megarthritis denticollis*, *Megarthritis depressus*, *Ocalea picata*, *Oxyptoda lividipennis**, *Oxyptoda opaca*, *Oxyptoda umbrata*, *Phacophallus parumpunctatus*, *Philonthus fimetarius*, *Philonthus laminatus*, *Philonthus varius*, *Quedius cinctus*, *Quedius humeralis** (Na), *Quedius longicornis** (Nb), *Quedius maurorufus*, *Quedius molochinus*, *Quedius nitipennis**, *Sepedophilus marshami*, *Stenus ossium**, *Tachyporus chrysomelinus*, *Tachyporus hypnorum*, *Tachyporus nitidulus*, *Xantholinus linearis*.
- Scarabaeidae** — *Aphodius sphaelatus*.
- Elateridae** — *Agriotes sputator*, *Stenagostus villosus**.
- Cantharidae** — *Cantharis femoralis*.
- Nitidulidae** — *Brachypterus glaber*, *Epuraea aestiva*.
- Rhizophagidae** — *Rhizophagus dispar*.
- Cryptophagidae** — *Atomaria linearis*, *Cryptophagus setulosus*.
- Coccinellidae** — *Subcoccinella vigintiquatuor punctata*.
- Lathridiidae** — *Corticaria punctulata*.
- Pyrochroidae** — *Pyrochroa serraticornis*.
- Chrysomelidae** — *Chalcoides aurata*, *Gastrophysa polygona*, *Phyllotreta ochripes*, *Psylliodes chrysocephala*.
- Attelabidae** — *Rhynchites germanicus*.
- Apionidae** — *Apion carduorum*, *Apion curtirostre**, *Apion virens*.
- Curculionidae** — *Ceutorhynchus alliariae**, *Ceutorhynchus erysimi*, *Dorytomus longimanus*, *Hypera postica*, *Leiosoma deflexum*, *Phyllobius pyri*, *Sitona lineatus*.

SUNDON CHALK PITTS (TL0328 & TL0428)

Abandoned chalk workings, with ponds. Beetles were collected using sweep nets and by hand searching on 16 July.

- Carabidae** — *Agonum albipes*, *Agonum marginatum*, *Amara eurynota*, *Bembidion genei*, *Bembidion lunulatum*, *Bembidion nitidulum*, *Bembidion quadrimaculatum*, *Bembidion tetracolum*, *Dyschirius aeneus*, *Elaphrus riparius*, *Harpalus tardus*, *Pterostichus madidus*.
- Dytiscidae** — *Agabus bipustulatus*, *Agabus nebulosus*.
- Hydrophilidae** — *Helophorus brevipalpis*.
- Staphylinidae** — *Platystethus cornutus*, *Stenus comma*.
- Elateridae** — *Agriotes obscurus*, *Agriotes pallidulus*, *Athous bicolor*.
- Cantharidae** — *Rhagonycha fulva*.
- Nitidulidae** — *Meligethes aeneus*, *Pria dulcamarae*.
- Byturidae** — *Byturus tomentosus*.
- Coccinellidae** — *Adalia bipunctata*, *Coccinella septempunctata*, *Propylea quattuordecimpunctata*, *Rhyzobius litura*.
- Lathridiidae** — *Aridius bifasciatus*, *Stephostethus lardarius*.
- Oedemeridae** — *Oedemera lurida*.
- Chrysomelidae** — *Altica oleracea*, *Altica pusilla*, *Aphthona atrovirens* (Nb), *Cassida rubiginosa*, *Cryptocephalus labiatus*, *Oulema lichenis*, *Phyllotreta nemorum*, *Psylliodes affinis*, *Sphaeroderma testaceum*.
- Apionidae** — *Apion apricans*, *Apion astragali** (Na), *Apion carduorum*, *Apion loti*, *Apion nigrirtarse*, *Apion ononis*, *Apion onopordi*.
- Curculionidae** — *Anthonomus rubi*, *Ceutorhynchus litura*, *Ceutorhynchus quadridens*, *Cidnorhinus quadrimaculatus*, *Hypera nigrirostris*, *Hypera plantaginis*, *Miarus campanulae*, *Phyllobius roboretanus*, *Rhynchaenus pratensis* (Nb), *Sitona lineatus*.

DROPSHORT MARSH, TODDINGTON (TL0027)

This SSSI is a wetland habitat fed by springs, with marsh and meadow flora. Mature hedges and old pollarded willows are also present. Beetles were provided from pitfall traps run by Mr T. Thomas between August 1989 and January 1990. Beetles were also extracted from samples of hawthorn leaf litter, reed and sedge debris and moss from an old tree stump, all collected on 3 December.

- Carabidae** — *Bembidion guttula*, *Bembidion lunulatum*, *Bembidion quadrimaculatum*, *Leistus ferrugineus*, *Loricera pilicornis*, *Notiophilus biguttatus*, *Pterostichus madidus*, *Pterostichus melanarius*, *Pterostichus nigrata*, *Pterostichus strenuus*, *Trechus obtusus*, *Trechus quadristriatus*.
- Hydrophilidae** — *Anacaena globulus*, *Cercyon haemorrhoidalis*, *Cryptopleurum minutum*, *Megasternum obscurum*.
- Histeridae** — *Abraeus globosus**.
- Leiodidae** — *Catops fuliginosus*, *Catops morio*, *Nargus velox*.
- Silphidae** — *Nicrophorus humator*, *Nicrophorus vespillo*.
- Scydmaenidae** — *Euconus hirticollis**, *Stenichnus collaris*.
- Staphylinidae** — *Amischa decipiens**, *Amischa soror**, *Anotylus rugosus*, *Anthobium unicolor*, *Atheta aquatica*, *Atheta atramentaria*, *Atheta fungi*, *Atheta nigripes*, *Carpelimus corticinus*, *Carpelimus elongatulus*, *Cypha longicornis*, *Deubelia picina**, *Encephalus complicans*, *Gabrieus pennatus**, *Geostiba circellaris*, *Gyrohypnus punctulatus*, *Hygronoma dimidiata*, *Lathrobium brunripes*, *Lesteva heeri*, *Micropeplus staphylinoides*, *Micropeplus fulvus*, *Myllaena brevicornis*, *Ocalea picata*, *Omalius italicum*, *Othius myrmecophilus*, *Othius punctulatus*, *Oxyopoda ferruginea**, *Oxytelus laqueatus*, *Philonthus cognatus*, *Philonthus fimetarius*, *Philonthus laminatus*, *Quedius boops*, *Quedius fuliginosus*, *Quedius molochinus*, *Stenus bimaculatus*, *Stenus clavicornis*, *Tachinus signatus*, *Tachyporus chrysomelinus*, *Tachyporus hypnorum*, *Tachyporus nitidulus*, *Tachyporus obtusus*, *Xantholinus glabratus*.

- Pselaphidae** — *Pselaphus heisei*.
Elateridae — *Agriotes obscurus*.
Cantharidae — *Cantharis pallida* (Nb), *Cantharis rufa*.
Nitidulidae — *Meligethes aeneus*, *Pocadius ferrugineus*.
Phalacridae — *Stilbus testaceus*.
Coccinellidae — *Rhyzobius litura*.
Lathridiidae — *Aridius bifasciatus*, *Enicmus histrio*, *Stephostethus lardarius*.
Chrysomelidae — *Chaetocnema concinna*, *Chaetocnema hortensis*, *Crepidodera transversa*,
Longitarsus melanocephalus.
Curculionidae — *Barypeithus pellucidus*, *Ceutorhynchus assimilis*, *Ceutorhynchus erysimi*,
Ceutorhynchus floralis, *Limnobaris t-album**, *Notaris acridulus*, *Sitona lineatus*.

FENLAKE MEADOWS, BEDFORD (TL0648)

Wet, frequently flooded grassland with abundant spike rush. Beetles were collected by Mr G.J. Dennis on 5 October.

- Carabidae** — *Agonum marginatum*.
Staphylinidae — *Philonthus laminatus*, *Stenus cindeloides*.
Cryptophagidae — *Atomaria atricapilla*.
Coccinellidae — *Anisosticta novemdecimpunctata*, *Coccidula rufa*.
Lathridiidae — *Aridius bifasciatus*.
Anthicidae — *Anthicus floralis*.
Curculionidae — *Notaris acridulus*, *Sitona lineatus*.

10 BUCKWOOD AVENUE, DUNSTABLE (TL0322)

This is a small suburban garden in the middle of Dunstable where pitfall traps have been run between June and October 1988 and between May and December 1989. Beetles were also extracted from compost and rotten wood in October and February 1989 respectively. In addition beetles were collected in yellow water traps between July and October 1989.

- Carabidae** — *Amara bifrons*, *Amara familiaris*, *Amara plebeja*, *Badister bipustulatus*, *Bembidion lampros*, *Bembidion properans*, *Bembidion quadrimaculatum*, *Carabus violaceus*, *Leistus spinibarbis*, *Loricera pilicornis*, *Nebria brevicollis*, *Notiophilus biguttatus*, *Pterostichus madidus*, *Synuchus nivalis*, *Trechus quadristriatus*.
Dytiscidae — *Agabus bipustulatus*, *Hydroporus planus*.
Hydrophilidae — *Cercyon analis*, *Cercyon atomarius*, *Cercyon haemorrhoidalis*, *Helophorus brevipalpis*, *Megasternum obscurum*, *Sphaeridium lunatum*.
Histeridae — *Hister merdarius**.
Ptiliidae — *Nephanes titan**, *Ptenidium pusillum*.
Leiodidae — *Choleva angustata*, *Nargus velox*, *Ptomaphagus subvillosus*.
Scydmaenidae — *Scydmaenus tarsatus*.
Staphylinidae — *Acidota cruentata** (Nb), *Anotylus complanatus**, *Anotylus insecatus* (Nb), *Anotylus inustus*, *Anotylus rugosus*, *Anotylus sculpturatus*, *Anotylus tetracarinus*, *Atheta aquatica*, *Atheta fungi*, *Atheta fungivora*, *Atheta laticollis*, *Atheta longicornis*, *Atheta nigripes*, *Autalia rivularis*, *Cilea silphoides*, *Cordalia obscura*, *Gabrius piliger**, *Gyrophypnus punctulatus*, *Lathrobium multipunctum*, *Leptacinus pusillus**, *Lesteva longoelytrata*, *Lithocharis nigriceps**, *Lithocharis ochracea*, *Megarthritis affinis*, *Megarthritis depressus*, *Micropeplus fulvus*, *Oligota punctulata**, *Omalium caesum*, *Omalium excavatum*, *Omalium rivulare*, *Othius laeviusculus**, *Oxyptoda umbrata*, *Oxytelus laqueatus*, *Phacophallus parumpunctatus*, *Philonthus cephalotus*, *Philonthus decorus*, *Philonthus laminatus*, *Philonthus nitidicollis** (Nb), *Philonthus varians*, *Philonthus varius*, *Plataraea brunnea*, *Platystethus arenarius*, *Quedius cinctus*, *Quedius cruentus*, *Quedius mesomelinus*, *Quedius semiobscurus*, *Quedius tristis*, *Rugilus orbiculatus*, *Rugilus rufipes*, *Sepedophilus marshami*,

Staphylinus ater, *Staphylinus compressus*, *Staphylinus olens*, *Stenus clavicornis*, *Sunius melanocephalus*, *Tachinus humeralis*, *Tachinus marginellus*, *Tachinus signatus*, *Tachinus subterraneus*, *Tachyporus chrysomelinus*, *Tachyporus hypnorum*, *Tachyporus nitidulus*, *Tachyporus obtusus*, *Tachyporus solutus*, *Xantholinus glabratus*, *Xantholinus linearis*, *Xantholinus longiventris*, *Zygras limbatus*.

Pselaphidae — *Euplectus sanguineus*, *Euplectus signatus*.

Scarabaeidae — *Aphodius contaminatus*, *Oxyomus sylvestris*.

Byrrhidae — *Byrrhus pilula*.

Elateridae — *Agriotes obscurus*, *Agriotes sputator*, *Athous bicolor*.

Nitidulidae — *Carpophilus obsoletus**, *Glischrochilus hortensis*, *Meligethes aeneus*, *Omosita colon**.

Rhizophagidae — *Monotoma bicolor**, *Monotoma spinicollis**, *Rhizophagus perforatus*.

Silvanidae — *Ahasverus advena**.

Cryptophagidae — *Atomaria apicalis**, *Atomaria atricapilla*.

Cerylonidae — *Anommatus duodecimstriatus*.

Coccinellidae — *Adalia bipunctata*, *Coccinella septempunctata*, *Propylea quatuordecimpunctata*.

Endomychidae — *Mycetaea hirta*.

Lathridiidae — *Aridius bifasciatus*, *Aridius nodifer*, *Corticicara gibbosa*, *Dienerella elongata* (Nb).

Scraptiidae — *Anaspis regimbarti*.

Anthicidae — *Anthicus floralis*.

Chrysomelidae — *Aphthona atrocaerulea**, *Chaetocnema hortensis*, *Longitarsus luridus*, *Longitarsus succineus**, *Phyllodecta vitellinae*, *Phyllotreta nigripes**, *Psylliodes affinis*, *Psylliodes chrysocephala*.

Apionidae — *Apion virens*.

Curculionidae — *Barypeithus araneiformis*, *Barypeithes pellucidus*, *Ceutorhynchus assimilis*, *Ceutorhynchus quadridens*, *Euophryum confine*, *Orthochaetes setiger* (Nb), *Otiiorhynchus rugostriatus*, *Otiiorhynchus sulcatus*, *Sciaphilus asperatus*, *Sitona lineatus*.

COMMENTS

A further 55 species were added to the Bedfordshire county list. There are several reasons why we have recorded so many additions to the county list over the last two years. Firstly, the absence of specialist beetle recorders over an extended period prior to our recruitment, secondly the increasing availability of good identification keys to a number of traditionally difficult groups and thirdly the employment of a range of collecting and extraction techniques which have produced specimens of very small species from concealed habitats which are generally overlooked during general collecting and observation. It is interesting to note that over the last two years a total of 149 beetle species were recorded from the small suburban garden in Dunstable belonging to one of the recorders. These included 5 Nationally Notable species and 21 species new to the county list. The same address produced an unusual record in the form of an alien longhorn beetle, related to the British wasp beetle, which emerged from an unidentified piece of wood purchased at a local garden centre as support for an air plant. Finally, a recent key was obtained from the National Carabidae Recorder which separates the species *Asaphidion flavipes* into three separate species. Re-examination of *A. flavipes* from last years Potton Wood pitfalls showed them to be *A. curtum*. Last year's report should therefore be amended accordingly.

ACKNOWLEDGEMENTS We are grateful to Ian Woiwod for running the pitfall traps in Potton Wood and Cockayne Hatley Wood; to Paul Hyman for discovering the presence of the scarce weevil *Apion astragali*, on Wild Liquorice at Sundon Chalk Pits; to G.J. Dennis for collecting the beetles at Fenlake Meadows; to Tom Thomas for supplying beetles from his pitfall traps at Dropshort Marsh; to Joan Childs, Tony Aldhous and Rosemary Brind for supplying additional records; and to the Nature Conservancy Council and landowners for allowing access to SSSIs.

W. POWELL J.E. ASHBY

BEDFORDSHIRE MOSSES NOT RECORDED IN RECENT TIMES

by Alan R. Outen

Lafin (1953) listed 210 species of mosses for Bedfordshire of which 35 had not been since 1947. A total of 249 species of mosses have now been recorded for the county and of these 30 species have not been encountered in the last 35 years as detailed below. The occurrence of these species in neighbouring counties is noted as from Corley and Hill (1981), updated by new vice-county records published by the British Bryological Society. More detailed information for Cambridgeshire is from Crompton and Whitehouse (1983) and for Hertfordshire from Bloom (1982, 1983). Those records in brackets have not been seen for over 50 years though absence of brackets does not always indicate that there are recent records for Bucks, Hunts or Northants, but rather a lack of information. The Liverworts are not included here as a detailed account of this group within the county, including species not seen in recent years, is given in Outen (1989).

The following list includes those species not seen in Bedfordshire for 35 years or more. Specimens in the Herbarium of Luton Museum are indicated*.

Archidium alternifolium Not seen since recorded by Abbot 1798 at Stevington Bogs. It can occur on damp, often sandy soil in fields, by rivers and in woods but is presumed extinct in Cambs (last seen 1820) as well as Beds although still recorded for Herts.

Bartramia pomiformis Recorded by Abbot and collected by Saunders from several sites including Steppingly Firs* (1882), Flitwick* (1882) and Pepperstock* (1884). Lafin 1953 considered it rare but it was recorded at that time from Sutton TL (no specimen), Woburn* (1949) P. Taylor and Whipsnade* (1949) P. Taylor. (All specimens include mature capsules). This attractive species is sensitive to sulphur dioxide (SO₂) pollution and is known to have gone from many parts of the south east by the 1950s. Hopefully as SO₂ levels fall it may re-appear. It should be looked for on the greensand. Also recorded for Herts, Bucks, (Cambs — last record 1830) and Northants.

Bryum algovicum var. *rutheanum* (*B. pendulum*) The only Bedfordshire records remain Saunders, unlocalised, (1904) and H.N. Dixon at Turvey in 1906. Can only be satisfactorily identified when capsules are present. Rare or extinct in Beds. Also recorded for Herts and Hunts.

B. bornholmense First and only record Rowney Warren 1950 H.L.K. Whitehouse. This is one of the *B. erythrocarpum* complex which possess rhizoidal (and sometimes axillary) gemmae as vegetative propagules. The complex was discussed by Crundwell and Nyholm (1964), hence why this record was not included in Lafin (1953). This species has gemmae often exceeding 250 µm, usually on long rhizoids and never axillary, and leaves with a long excurrent nerve. Unlike most of this group it does not normally occur in arable fields but prefers more permanent habitats. If looked for in suitable habitats it should be re-found. Recorded for Herts and Hunts.

B. inclinatum Lafin (1953) lists it as rare but the only record he quotes is Saunders collection from Flitwick 1881*. I have been unable to trace any Bedfordshire specimens other than this. Recorded for Bucks, Cambs and Northants.

Buxbaumia aphylla Not listed by Lafin but two specimens were collected by Caroline Gaye from Aspley Wood in 1840*. This curious, minute species is becoming increasingly rare in Britain and is certainly extinct in the county. It has not been recorded for any neighbouring counties.

Campylium stellatum var. *stellatum* Not seen in the county this century. It once grew at Totternhoe Mead (1883)*, Heath and Reach (1882)*, Limbury Marsh (1884)*, and Flitwick Moor. Judging by the amount of material collected by Saunders it was probably not uncommon at that time. Abbot (1798) also knew it at Ampthill. It is essentially a taxon of marshes, fens, bogs and shallow pools most especially in calcareous situations and it seems to avoid shade. It is unlikely still to be with us and the drainage of most of these sites is undoubtedly the principal cause of its loss. At Flitwick Moor the increasing acidity and the succession to woodland since Saunders time mean that this habitat is now unsuitable for it. Recorded for all neighbouring counties. (Var. *protensum* is recorded from 9 tetrads.)

Address: 15 Manor Close, Clifton, Shefford, Beds. SG15 7EJ

- Cratoneuron commutatum* Not seen this century but recorded by Saunders from Höckliffe, Flitwick Moor and Markham Hills* (1882). It has similar habitat requirements to the above with a marked preference for calcareous conditions and the reasons for its loss at its former sites are also similar to *Campyllum stellatum* var. *stellatum*. Recorded for (Herts), Bucks, Cambs (last record 1960) and Northants.
- Dichodontium pellucidum* Apart from two records by Abbot from Bedford 1801 (as *Bryum flavescens*) and Aspley Wood 1798 (as *B. pellucidum*) the only other record of this species is from a "step-like water channel", railway cutting, Wymington, Laffin (1953). No specimen can be traced. I have failed to refine it at these or other locations in the county but it could still turn up at Wymington due to the difficulty in locating the precise site. Not recorded for any neighbouring counties.
- Dicranella rufescens* Apparently recorded by Abbot between Milton Ernest and Radwell but there is no specimen to confirm this. Recorded for Herts and Northants.
- Dicranum bonjeanii* Saunders recorded this species from Aspley Wood 1882*, Clophill and Ampthill. Laffin (1953) reported it from Flitwick Moor and there are two collections of his in Cambridge University Herbarium. This species which has transversely undulate leaves is rather rare on acidic soils. I thought I had found it at Flitwick Moor in 1971 but microscopic examination showed it to be *D. scoparium*. Smith (1978) states "forms of *D. scoparium* with transversely undulate leaves may be confused with *D. bonjeanii*" but quotes several microscopic differences. Certainly undulate leaved forms of *D. scoparium* are common at Flitwick Moor (and *D. polysetum* which also has undulate leaves is also here though Laffin did not record it). Saunders Aspley Wood collection is correct. The two collections by Laffin require further study. I have searched in vain for this handsome species on the chalk but it could still turn up. Recorded for Herts, Bucks and Northants.
- Drepanocladus revolvens* Recorded from Totternhoe Mead by Saunders in 1882 but has not been seen since. This attractive species is sadly unlikely to be refound in the county. Recorded for (Cambs — last seen 1827) and Northants.
- D. sendtneri* Last collected at Totternhoe Mead by Saunders who made at least six collections between 1882 and 1884*. Not reported since and as Laffin (1953) concluded, probably extinct in the county. Recorded for (Bucks) and Northants.
- Entodon concinnus* (*E. orthocarpus*) First recorded in Bedfordshire by E. Cooper from Colmworth in 1856. It was also found last century by Saunders on the Markham Hills but the only subsequent record is old chalk pit, Barton, Laffin (1953). This is an uncommon plant of calcareous habitats but it is recorded from several sites just over the county boundary in Herts and I believe it should still be with us. Recorded for Herts, Bucks, Cambs and Northants.
- Eucladium verticillatum* Laffin found this species on detritus on a lock wall of the Ivel Navigation Canal, Shefford in 1951* and this remains the only record for this species in the county. This particular site is now effectively destroyed but it could still appear elsewhere on damp walls. Recorded for Herts, Bucks, Cambs and Northants.
- Myrinia pulvinata* This species was not included in Laffin (1953) but is listed in Warburg (1963) and Corley and Hill (1981) as probably extinct. It is not known on what authority it was included and no further details are known. Not recorded for neighbouring counties.
- Orthotrichum lyelli* Saunders recorded it from Luton Hoo 1882*, Pepperstock 1882*, 1883*, and Caddington 1883*. Laffin (1953) reported it "as once frequent in woods on the clay-with-flints, but now probably extinct" and certainly it does not appear to have been seen in Bedfordshire this century. Epiphytic members of this genus are pollution sensitive, especially to SO₂ and have decreased markedly this century. I first searched for this and the two following species on the Luton Hoo estate in 1973 but without success and this remains the position despite considerable fieldwork in the south of the county since. Recorded for (Herts), Bucks, Cambs (1973, first record for over 60 years) and Northants.
- O. pulchellum* Recorded by Saunders as an epiphyte on Elder in 1892*, it has not been seen in the county since. (See notes under *O. lyellii*). Recorded for Herts (first record 1985), Bucks and Northants.
- O. tenellum* Recorded by Saunders as an epiphyte on Elder in 1892*, it has not been seen in the county since. (See notes under *O. lyellii*). Recorded for Bucks and Northants.

- Plagiomnium cuspidatum* (*Mnium cuspidatum*) Recorded by P. Taylor from Aspley Wood in 1948* and by Laffin (1953) from Potton Wood. Could still be present though presumably rare in the county. Recorded for Herts, Bucks, Cambs (2 sites) and Northants.
- Pogonatum nanum* (*Polytrichum nanum*) Saunders recorded this species from Aspley, Flitwick, Slip End*, Pepperstock*, Woodside*, and Caddington*, whilst Laffin regarded it as "occasional and now appearing also as a colonist" and reported it from Sandy Heath and Sutton Fen. There is no shortage of material in Saunders herbarium packets and all collections are fertile. No Bedfordshire specimens of Laffin can be traced and he does not indicate whether material was fertile or not. Despite extensive fieldwork I have been unable to refine this species. Gardiner (1981) reports a similar decline in this species in Surrey in the last 50 years and states "probably mainly due to a loss of suitable verges following road improvements (M.O. Hill, pers. comm.)". Recorded for Herts (still present 1980), Bucks, (Cambs — last recorded ca 1830) and Northants. (*P. aloides* has also declined in the county and since 1970 has only been recorded at two sites, both on the greensand).
- P. urnigerum* (*Polytrichum urnigerum*) Specimens of Saunders are from Southill 1883* and Luton Hoo 1882*; both collections being fertile. Laffin (1953) deduced the species to be probably extinct and regrettably this appears to be the case. Recorded for Herts (still present 1979), Bucks and Northants.
- Pterygoneurum ovatum* Early collections from the county which I have been able to trace are Oakley 1883* H. Davies det. Saunders, and specimens from Knotting and Odell both by E. Cooper in 1856 in Cambridge University Herbarium. Laffin (1953) regarded this species as widespread but rare in the north of the county on rubbly limestone walls. Interestingly however the only collections from the time appear to be Hatley Gate, Cockayne Hatley (on ruins of old cottage), by TL in 1949 but misidentified as *Pottia intermedia* (in Camb. Univ. Herb.), and Hinwick* P. Taylor 1949 (also in Camb. Univ. Herb.). I have searched for it at these sites and elsewhere but without success, however it is a very tiny plant which could easily be overlooked especially when sterile. Recorded for all neighbouring counties.
- Rhynchostegiella curviseta* The only record for this species is on detritus on masonry by water, Tempsford Mill 1950 T. Laffin. The material is in Camb. Univ. Herb. Recorded for Cambs (first recorded 1985) and Northants.
- Scorpidium scorpioides* This species was not included in Laffin (1953) but is listed in Warburg (1963) and Corley and Hill (1981) as an extinct species in the county. It is not known under what authority this species was included and no locational or other details have been traced. Recorded for Cambs (last record 1955).
- Splachnum ampullaceum* Not recorded in Bedfordshire since Abbot (1798). It grows on cattle dung on boggy ground and is rare in south-east England. It is most unlikely that this interesting species will ever be recorded in the county again. Recorded for (Cambs — last seen c.1820), (Hunts) and (Northants).
- Thuidium abietinum* ssp. *hystricosum* (*Thuidium hystricosum*) The only Bedfordshire record is from Deacon Hill 1948* P. Taylor. It could well turn up again in chalk grassland especially as its known site is one of the less well studied bryological sites in the county in recent years. Recorded for Herts (including recent records from sites just over the county boundary) and Bucks. (Subspecies *abietinum* was reported by Saunders (1884) from Barton Hills but I can trace no specimen and it has not been seen since.)
- Tortella inflexa* The only Bedfordshire record is from "chalk lumps on north facing slope, beneath spruces on edge of plantation", Barton Hills Nov. 1957, by F. Rose and T.D.V. Swinscow. This moss was first recognised as a British species by Wallace (1957) though it is now known it was present in Britain as long ago as 1904. Although confined to chalk and limestone lumps and stones in southern England, Wallace (1972) considers it to be spreading. Although I have not yet found it, it is almost certainly still with us, though it is very small and easily overlooked, especially as it tends to die down in summer. Recorded for Herts (first recorded Rose and Swinscow 1957, two subsequent records both in 1980), Bucks (first record F. Rose 1956) and Cambs (first recorded 1980).
- T. tortuosa* Recorded from Dunstable Downs near tumuli in 1886* by R. Rogers det. Saunders and Barton Hills 1887* by Saunders. The only other record quoted by Laffin (1953) is from the

north side of Deacon Hill by W.M. Cornish. No date is given. Smith (1978) describes it as rare to occasional in lowland Britain. It could still be present on the Bedfordshire chalk. Recorded for Herts (rare), Bucks and Cambs (a single natural site).

Ulota crispa An epiphyte of Elder on the chalk this species was recorded by P. Taylor from Long Wood near Studham 1949 and also Barton Hills 1949*. Like many epiphytes it is pollution sensitive and this probably accounts for our failure to find it in recent years. Recorded for Herts (rare), Bucks, (Cambs — last recorded 1881) and Northants.

EXCLUDED SPECIES

Amblystegium juratzkanum Not now considered distinct from *A. serpens*.

A. kochii Reported by Laffin from a pondside at Cockayne Hatley (1949) but the species is not included for Bedfordshire in Warburg (1963) or Corley and Hill (1981), so presumably was not accepted as correct. I have been unable to trace a specimen.

Bryum creberrimum (*B. affine*) A specimen collected by J.G. Dony from Houghton Regis cement works was identified by TL as this species. The record has never been accepted as a new county record however as the species can only be satisfactorily determined with ripe fruit.

Bryum erythrocarpum Now regarded as a complex of species, several of which are recorded for Bedfordshire.

Campylopus fragilis Recorded by TL from several sites but all Bedfordshire material identified as this species is incorrect and generally referable to *C. pyriformis*. Earlier records must also be considered as doubtful.

Funaria muehlenbergii Laffin (1953) reports finding a previously undetected scrap in Saunders herbarium. The specimen cannot now be traced.

Weissia multicapsularis Records of this species by Abbot must be considered as doubtful.

Species considered extinct by Laffin or not recorded by him but since refound:

Brachythecium salebrosum

Bryum radiculosum (*B. murale*)

Campylium elodes

Cryphaea heteromalla

Fissidens viridulus

Sphagnum capillifolium

(*S. nemoreum* and *S. rubellum*)

S. squarrosum

S. subnitens

Philonotis fontana

Physcomitrella patens

Pottia bryoidea

Seligeria calcarea

Tortula papillosa

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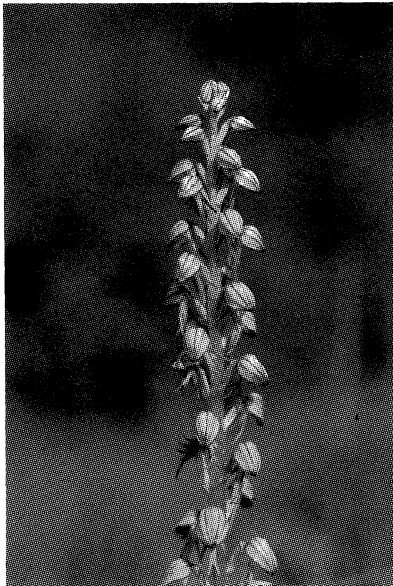
FLOWERING PLANTS, FERNS AND FERN ALLIES (Spermatophyta and Pteridophyta)

Report of the Recorder

Recording during the year was mainly on a site basis, with visits to several well known and well botanised localities. Some sites had not been visited in recent years and it was considered that resurveying was necessary. Inevitably this was unlikely to produce any major new records as, indeed, proved to be the case.

Because of the dry and hot season many planned visits turned out to be too late. For instance Alan Outen and myself hosted a visit by the Botanical Society of the British Isles to King's Wood, Heath and Reach and Totternhoe Knolls Local Nature Reserve. The latter was very 'burnt-up' but we were able to show off the Musk Orchid *Herminium monorchis* and, after diligent searching, the Frog Orchid *Coeloglossum viride*, however the Man Orchid *Aceras anthropophorum* was well over. All the regular chalk downland flora was very sparse.

One particular collection of species caused great excitement. On the verge of the newly opened stretch of the A505 Luton — Dunstable bypass several species of cornfield weeds appeared in profusion. The species in question were Corncockle *Agrostemma githago*, Corn Marigold *Chrysanthemum segetum* and Cornflower *Centaurea cyanus*. Unfortunately seeds had been sown so it was not, as some had hoped, due to seeds disturbed by the roadworks. It will be interesting to see if any of these three species survive.



Man Orchid *Aceras anthropophorum*. One of the special species which occurs at Totternhoe Knolls LNR
(Photo: Chris Boon)

SYSTEMATIC LIST

In the following list the Latin names are as in Clapham *et al.* (1981) and the English names are as in Dony *et al.* (1986).

Ranunculaceae

Thalictrum flavum **Common Meadow-rue** Shefford Hardwicke (TL13J), on the edge of a ditch near the River Flit. New 10km record (CB JD).

Crassulaceae

Crassula helmsii **New Zealand Pigmyweed** Pond near Podington (SP96G). Still present in abundance (CB CD JD). (Correction: the tetrad was given as TL96G in Boon (1989)).

Umbelliferae

Oenanthe fistulosa **Tubular Water-dropwort** Fenlake (TL04U). This has extended its range over a large area; early standing water had affected the grass and the area was not mowed early in the year as usual (GD).

Gentianaceae

Centaureum pulchellum **Lesser Centaury** B660 roadside verge (TL05Y). This has extended its range along the verge (GD).

Compositae

Filago vulgaris **Common Cudweed** Shefford (TL03Z). The epithet 'Common' is rather a misnomer. In Dony (1976) there are about 10 tetrad records (1970-75). Since then it almost seems to have disappeared. Perhaps its reappearance was due to the hot weather (CB).

Orchidaceae

Epipactis purpurata **Violet Heleborine** Studham (TL01C). Remarkably this turned up in a garden lawn. However the area was previously woodland. The nearest previous known site is from nearby Deadmansey Wood (MP).

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ACKNOWLEDGEMENTS

I would like to thank the following for their records. It is not possible to publish all records received but the initials of the recorders are given where appropriate.

A. Chapman, J. Childs, G. Dennis, C. Dony, J. Dony, A. Outen, M. Pegg.

CHRIS BOON

MOSSES AND LIVERWORTS (Bryophyta)

Report of the Recorder

Fieldwork during 1989 was again somewhat limited by a combination of professional duties and mycological work for the forthcoming *Fungi of Hertfordshire*. In addition, however, the rather dry conditions for a large part of the year meant that realistic work on Bedfordshire bryophytes would anyway have been restricted to an even shorter period than is normally practical. Within these limitations records continued to accumulate but no additions to the county list were found.

ALAN R. OUTEN

LICHENS

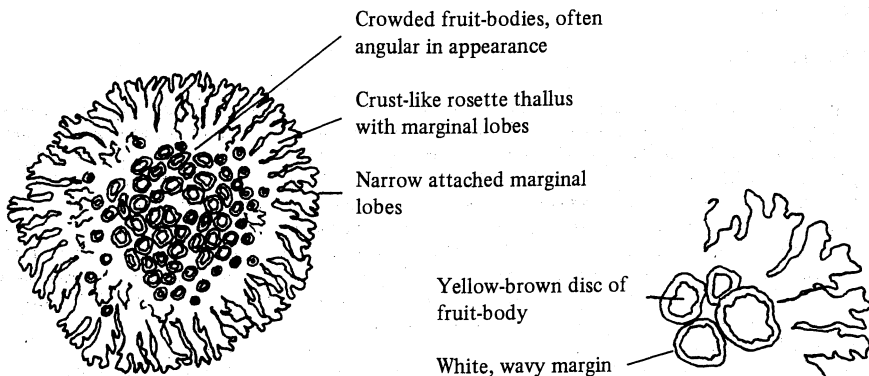
Report of the Recorder

With the considerable improvement of the atmosphere of urban environments a gradual lichen recolonization is expected. One particular lichen which is rapidly increasing in numbers in the county is *Lecanora muralis*. Increase in this species has led to comments from a number of members in the Society and even in the local press as to the sudden appearance of what looks like green paint stains on paving stones, walls and roofs.

Lecanora muralis forms greenish-grey to yellow-brown rosette like patches with marginal lobes. The centre is often darker due to the reddish brown discs of the apothecia. This lichen has a relatively rapid growth rate and will readily grow on man-made substrates, especially asbestos - cement, concrete, mortar and roof tiles. As ambient levels of sulphur dioxide have fallen over the last few years, this lichen has been able to colonise substrates in urban areas, such as paving stones in Luton and Bedford. It has also been helped in its invasion by lack of competition from other species and in some areas by the increasing use of a variety of agro-chemicals as these favour the growth of this nitrophilous lichen. Its natural habitat are bird perching sites in upland areas. In Silsoe and Clophill this lichen covers walls and roofs close to and on agricultural buildings.

Lecanora muralis has been reported to be causing considerable damage in Italy, where it has been found growing on works of art either *in situ* or exhibited by museums in the open-air. In one case this lichen has been observed growing on the rims and shoulders of terracotta pots causing flaking and blistering of the pot surfaces. This effect is the result of repeated wetting and drying of the lichen thallus; the thallus dries, it contracts and lifts the substrate surface. It would be interesting to know whether anyone has observed this effect in Bedfordshire.

FRANCES B.M. DAVIES



The crustose lichen Lecanora muralis

(Frances Davies)

THE FUNGUS FORAY, 1989

For only the second time in thirty years it was not possible for the Recorder for Fungi to lead the Society's Annual Foray. This year's foray, which was to Marston Thrift on Sunday 15th October, was therefore led by Mr Alan Outen. About 30 members of the Society attended.

Marston Thrift is an SSSI well-known for other aspects of its flora and fauna but has not previously been studied intensively for its fungi. The heavy clay soils and dense undergrowth of this wood are not conducive to the growth of larger fungi and the exceptionally dry season exacerbated this problem. In consequence only 31 species of toadstools were recorded most of which were small. Species of *Agaricus*, *Amanita*, *Boletus* and *Tricholoma* were totally absent whilst *Russula* and *Lactarius* were only represented by single species. The absence of the Recorder was sorely missed for naming the numbers of white resupinate forms found; regrettably these had to remain indeterminate. We were however fortunate to have with us Dr Jerry Cooper, an authority on micro-fungi, which accounts for the longer than usual lists for these groups. Out of the overall total of 119 species recorded during the day, 26 were new to the county, the majority of which were micro-fungi.

Among the gill-bearing species new to the county were two species of ink-cap: *Coprinus angulatus* is a species of burnt ground, with distinctive spores, mitriform in face view; *C. leiocephalus* is reminiscent of *C. plicatilis* (which often occurs in lawns) but has smaller, less angular spores measuring 8.5-11/5.5-6.5/7-8.5µm and is more usually a woodland species.

The other toadstool novelties are all rather small species: *Mycena mucor*, found on rotting oak leaves, is a minute white member of the genus with cheilocystidia having long finger-like outgrowths. *Psilocybe coprophila* occurs on dung and has a hemispherical cap with a separable gelatinised cuticle. Microscopically it can be confirmed by its brown lentiform spores 12-15/8-9/7-7.5µm. *Resupinatus cyphelliformis* has a shell-like cap only a few mm across and no stipe. The white, sausage-shaped spores measure 7-8 x 4µm. This species was found on a rotting sedge stem.

Of the Ascomycetes new to the county the largest is *Peziza petersii*, a burnt-ground species with brown cups up to 5cms across and spores 10-12 x 5-6µm with verruculose walls. Four of the smaller members of this group are perhaps worthy of particular mention. *Dasyscyphus sulphureus* is a tiny yet beautiful species with grey discs up to 2mm across fringed with bright yellow hairs. It occurs on herbaceous stems, particularly, as here, on *Urtica dioica*. *Encoelia furfuracea* occurs on decaying branches of *Corylus* and has pale tan, rather leathery cups about 1cm in diameter with smooth reddish brown discs. *Orbilbia saraziniana* occurs on wet wood and has pale pinkish-brown discs about 1mm in diameter and spores 6-9 x 0.5µm. *Creopus gelatinosus* occurs on rotting branches and has cushion-like pale yellow translucent fruit bodies, 1-3mm across, appearing dotted dark green with the contents of the perithecia.

I am most grateful to Dr Cooper and to Miss Kerry Robinson for supplying me with lists of species found.

SPECIES LIST

Armillaria mellea; *Collybia dryophila*; *Conocybe tenera*; *Coprinus angulatus**; *C. domesticus*; *C. lagopus*; *C. leiocephalus**; *Flammulina velutipes*; *Gymnopilus penetrans*; *Hohenbuehelia atrocaerulea*; *Hypholoma fasciculare*; *Inocybe geophylla*; *Laccaria laccata*; *Lactarius turpis*; *Marasmius epiphyllus*; *M. ramealis*; *Mycena galericulata*; *M. galopus*; *M. inclinata*; *M. leptocéphala*; *M. mucor**; *M. stylobates*; *Pholiota highlandensis*; *Pleurotus cornucopiae*; *Pluteus cervinus*; *Psilocybe coprophila**; *Resupinatus cyphelliformis**; *Rhodotus palmatus*; *Russula ochroleuca*; *Tephroclype atrata*; *Tubaria furfuracea*.

Abortiporus biennis; *Bjerkandera adusta*; *Chondrostereum purpureum*; *Clavulina cristata*; *Coriolus versicolor*; *Daedalea quercina*; *Daedaleopsis confragosa*; *Fistulina hepatica*; *Hapalopilus rutilans*; *Hymenochaete rubiginosa*; *Lachnella villosa*; *Laetiporus sulphureus*; *Phellinus ferreus*; *Piptoporus betulinus*; *Polyporus squamosus*; *Schizopora paradoxa*; *Stereum hirsutum*; *Typhula erythropus*.

Lycoperdon foetidum; *L. pyriforme*.

Auricularia auricula-judae; *A. mesenterica*; *Calocera cornea*; *Dacrymyces stillatus*; *Tremella foliacea*; *T. mesenterica*.



Above: *Tremella foliacea*
 Right: Ergot *Claviceps purpurea*

(Photos: Alan Outen)

Coleosporium tussilaginis; *Melampsora populnea*; *Melampsorium betulinum*; *Phragmidium violaceum*; *Puccinia brachypodii* var. *brachypodii*; *P. caricina* var. *ribesii-pendulae*; *P. glechomatis*; *P. menthae*; *P. punctiformis*.

Anthracobia macrocystis; *Bulgaria inquinans*; *Chlorociboria aeruginascens*; *Crocicreas cyathoideum*; *Dasyyscyphus sulphureus**; *Encoelia furfuracea**; *Hymenoscyphus fructigenus*; *Leptotrochila ranunculi**; *Orbilbia saraziniana**; *O. xanthostigma*; *Peziza petersii**.

Claviceps purpurea; *Creopus gelatinosus**; *Daldinia concentrica*; *Diatrype disciformis*; *D. stigma*; *Erysiphe aquilegiae* var. *ranunculi**; *E. galeopsidis**; *E. heraclei*; *E. sordida**; *Hypocrea pulvinata*; *Hypoxylon fragiforme*; *H. fuscum*; *Leptosphaeria acuta*; *Microsphaera alphitoides*; *Phyllachora dactylidis**; *P. graminis*; *Platychora ulmi**; *Sphaerotheca pannosa*; *Xylaria hypoxylon*.

Alataspora acuminata; *Brachysporium bloxami**; *Codinaea fertilis**; *Dendryphion comosum*; *Dictyosporium toruloides**; *Lemonniera aquatica**; *Paecilomyces farinosus*; *Periconia atra**; *P. cookei**; *Phaeostalagmus tenuissimus**; *Pseudopiropes simplex**; *Ramularia filaris**; *R. rubella*; *Septoria rubi**; *Tetracladium marchalianum*; *Tetraploa aristata**; *Torula herbarum*; *Tricladium angulatum*.

Craterium minutum; *Didymium clavus*; *Lamproderma scintillans*; *Physarum pusillum*; *Stemonitis fusca*.

New county record — *

ALAN R. OUTEN

SITES

Report of the Recorder

This report is the first by the present Recorder. The intention is to document information regarding sites of wildlife interest in the county whether it relates to changes, threats, the establishment of new sites or surveys undertaken at a site. New developments, mineral extraction sites and bypasses are continually being proposed and the Society will need to assess the effect of these and promote positive conservation measures being incorporated in approved schemes. The Recorder will be relying on all members of the Society to make her aware of what is happening in their local area.

This report details a few of the new habitats that have been created in the county by planting and wildflower sowing, as well as some of the surveys that have been undertaken by the Society in recent years.

Centenary Wood (TL062350) This is a new woodland habitat planted to celebrate the centenary of Bedfordshire County Council (1989). An area of 13.6 hectares of former farmland is being used by the Planning Department to act as a demonstration of how trees can be grown as a crop whilst providing the needs of nature conservation and recreation. In addition to new plantings of broadleaved and coniferous woodland, ponds have been dug and open areas left which will either be sown with wild flowers or be allowed to colonise naturally; existing hedgerows are being maintained.

Bromham Lake (TL026515) This new Local Nature Reserve covers 25 acres of former limestone quarry and landfill site. A deep lake is the focus of the reserve and attracted one pair of Common Tern to attempt breeding in 1988. The remainder of the site shows examples of habitat creation with extensive wildflower sowing and tree planting, although some areas have been left for natural recolonisation. An initial report of the wildlife interest was made by the BNHS in 1989.

Flitton Moor (TL056360) This area of peaty fields in the valley of the River Flit is being managed by the County Council as a Nature Reserve. The 5.3 hectares of former agricultural land were purchased by the County Council in 1987. Ponds have been excavated and the existing ditch system dammed to raise the water table. There has been some tree planting, including an osier bed, and wild flowers and grasses have also been introduced.

Rowney Warren (TL123403) The Forestry Commission has been carrying out quantitative surveys of the wildlife interest of this site. During 1988 the botany and birds, and during 1989 the butterflies, were monitored along rides in the south-eastern section of the wood. The intention is that this monitoring will continue at regular intervals in the future and will allow an assessment of the effects of site management on wildlife — of particular interest will be the development of the woodland ride flora which includes remnants of former *Calluna vulgaris* heathland.

Marston Thrift (SP973413) The County Council recently acquired the lease for the whole woodland. Part of the site has been an SSSI since 1951 and a larger area was designated in 1987. A report on the wildlife interest was made by the Society in 1988/89.

Cooper's Hill (TL028376) This is one of the few remaining areas of heathland in the county. The area of heath is gradually declining as the natural succession to scrub and woodland takes place. A new management plan is being devised and the Society produced a report on some of the wildlife interest during 1989.

ROSEMARY BRIND

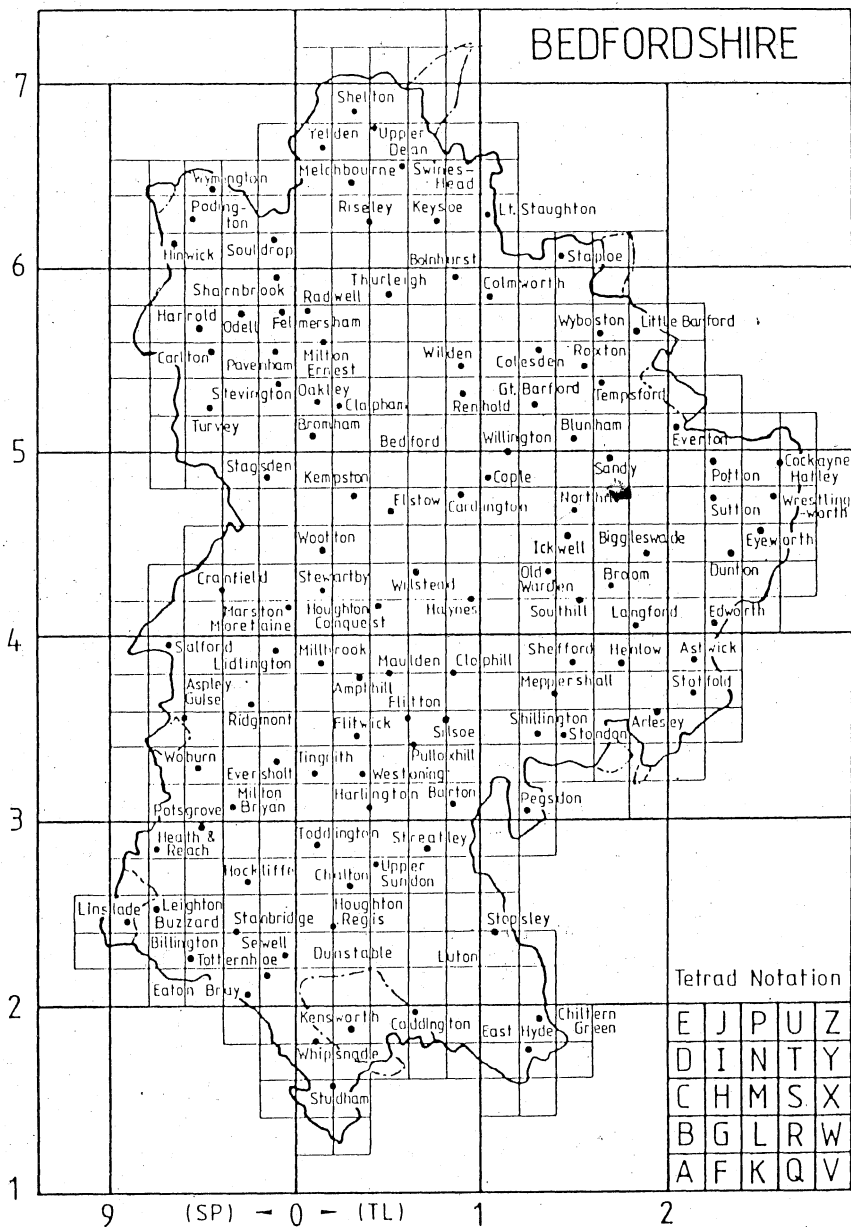
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THE SOCIETY

The Bedfordshire Natural History Society was formed in 1946 and its main function is to record the flora and fauna of the county. For this purpose it has over twenty active recorders, listed above, who cover most branches of natural history study, and whose annual reports are published in this journal. Members also receive a quarterly newsletter, *The Muntjac*, and programmes of meetings. These latter include field meetings to sites having a natural history interest within the county and occasional meetings further afield. During the winter months there are illustrated lectures, normally held at one of the following places: Bedford, Dunstable, Leagrave, Ampthill or Flitwick.

The Society depends on the annual subscriptions which are devoted entirely to carrying out its work, as all officers are honorary. Membership is open to anyone, whether resident in the county or not.



Tetrad map of Bedfordshire showing the main towns and villages

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