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The Reading Naturalist

No. 40



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THE READING NATURALIST

No. 40 for the year 1987

**The Journal of
The Reading and District Natural History
Society**

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Editorial

This is rather a 'Museum Piece'! During 1987 Shirley Townend and Brian Baker retired from the staff of Reading Museum. Shirley had been responsible for the setting up and maintenance of the Schools' Lending Service based at Yeomanry House. Brian has been a member of staff since 1947 and Deputy Director since 1956. Both have over the years served as members of the Committee of our Society, as Presidents and as members of the Editorial Sub-Committee - they have given us a long and valuable service.

The Reading Museum and Art Gallery have long been 'home' to our Society and we are grateful to all past and present members of staff for their co-operation in our activities. Even though we are at present holding our winter meetings at the Abbey Room of the Library we still depend upon the storage facilities of the Museum. Hugh Carter is still a member of the Museum staff and we look forward to our happy relationship continuing in the future.

Mrs. Nan Sandels was a member of the Museum staff for many years and an active member of our Society. After living for some years in Chipping Norton, she has returned to reside in this area. We give her a hearty welcome and it is a pleasure to see her at our winter meetings once again.

We are grateful to both Hugh and Brian for their help in making available to me the museum specimens used for illustrating the diagnostic features of caterpillars in the article in this number. Thanks to all past and present members of staff of the Reading Museum and also to all who have contributed articles, to our recorders, our typist, duplicator and collators.

Meetings and Excursions

The Annual General Meeting held on October 9th 1986 was followed by the Presidential Address given by Dr Alan Brickstock entitled 'Tadley-God-Bless-Us or Nothing is Forever' (Attendance 54). Other talks given during the winter of 1986 were:- on October 23rd It Seems Like Yesterday by Brian Baker (50); on November 6th A Japanese Cherry Journey - Japan 1986 - Reading 1986 by Catherine Olver (48); An African Safari by Florence Rigg on November 20th (43) and Deer of Great Britain by Brian Barton on December 4th (41). Winter talks continued on January 8th on Acid Rain by Humphry Bowen (38); on January 22nd Norman Hall gave a most interesting account of bird-watching in Turkey as the speaker arranged for the evening was unable to attend (41); on February 5th Rocks and Wildlife by Ann McCord (45); on February 19th Baynes Reserve and Bowdown Wood by Dick Hornby (43); finally an Introduction to the Work of the Meteorological Office by Peter Bate (43).

On December 18th 1986 and March 19th 1987 Members' Evenings were held, both as usual ably organised by Hugh Carter with refreshments kindly supplied by Ivy Brickstock. Our thanks to all who contributed to these two popular and enjoyable events (42 & 49).

Walks and Excursions - organised by Brian Reed.

Mrs. Hack led the first Fungus Foray to Hook End, Checkendon on October 3rd (20); and Alan Brickstock and Neville Diserens led the second foray at Kingwood Common with attendances of 15 in the morning and 20 in the afternoon. Sheila Ward led for general interest around Pangbourne on 15th November (15); on 13th December with Brian Reed a walk along the Thames in Reading for general interest (8) and for Mosses and Liverworts at Woodcote with Dr Watson (24).

Two full day excursions were held - on 13th December for birds at Pagham Harbour with Martin Sell (10); for birds at Arundel on February 7th with Norman Hall (17).

Half-day Summer Excursions

These started in extremely wet conditions to Sulham Woods - leader Neville Diserens - for general interest (5); on 25th April to Brimpton for Purple Toothwort, Meadow Saxifrage and Marsh Marigold (29); on 2nd May to Remenham Pastures for Loddon Lily and other spring flowers (24); on 30th May - leader Martin Sell - to Aston Upthorpe, a BBONT Reserve, for Chalk Milkwort and other chalk grassland plants (25); Eileen Holly led at Turville Heath on 27th June (27); on 1st August led by Doug Hambleton to Silchester for general interest (18); Roland Ramsdale first led at North Lake, Bracknell for Fringed Water Lily and Sheila Ward led on to Englemere Pond for some pond dipping (14); Martin Sell led to Hook Common for Marsh Gentians (25).

Evening Excursions

The first was to Burghfield Gravel pits for listening to birdsong 14th May (20); to 10th June to Wellington Country Park for bats - leader Mike Hardy (10); on July 1st an evening stroll by the Kennet with Brian Reed (12). The annual Barbecue and Nothing Evening was held at California Country Park. It was organised by Humphry Bowen and Brian Baker but was preceded by a late afternoon stroll led by Humphry. Altogether a popular and enjoyable event attended by 42 members.

Full-Day Excursions

The Annual Coach Excursion was to Durlston Head Country Park at Swanage. This has a wide variety of habitats - woodland, downland, cliffs and farmland. We found Early Spider Orchids, Horseshoe Vetch, Pale Flax, Milkwort and Green-veined Orchids and also saw many sea birds (53).

On June 6th a visit was made to Charles Flower's farm at Shalborne - this was a followup of his talk the previous year. Later Hugh Ennion gave a guided tour of Ham Hill (25). Mr Helyar was the leader to Tadley and Ashford Hill on June 14th - nothing traps had been set up the previous evening by kind permission of Mr Ron Ward (24).

Obituaries

Bruce Penman who died on December 8th 1986 was a member of the Natural History Society for many years and is greatly missed by all who knew him and walked with him on the many Field-outings especially during the last two years of his life, when despite his illness (Parkinson's Disease) he carried on with admirable élan to look for the rare flower or dragonfly in the wettest of water meadows.

Botany was one of his many interests. Professionally he was a cartographer, linguist and a successful translator of Italian, German, Dutch and other foreign literature.

His extensive travels took him to a good many countries. Hence his wide knowledge of places and things including the Fine Arts, all of which came out in his conversation and made listening to him such an interesting experience.

Walter Dunn

Mrs. Beatrice Kay died last June at the age of 87. She had been, until very recently, our membership secretary, and a most regular attender to all the lectures.

Beatrice Kay studied botany and did an MSc at Leeds, leading to a paper in collaboration with J.H. Priestley in 1924 on "Plant cuticle structure, distribution and function" which is still of relevance today in the field of plant surfaces. Her love of plants manifested itself in an intense interest in her garden, the birds that came to it, and all the detail of its climate and seasons. Her love of beauty extended to art, and most especially to music. Until her recent illness she had a quick, intellectual mind and it was a delight to converse with her; we listened to records together, discussed books and paintings and natural history. I was always the receiver and she the giver, her friendship has been a valued part of my life.

Jocelin Whitfield

Presidential Address 1987

Conservation Here & There

E.F. Holly

What does conservation mean to us? - to me it means the preservation, for the next generation, of all that enriches our lives by its beauty, interest and ease by which it is enjoyed.

Much has been lost botanically, species have disappeared and many more are threatened. This decrease was accelerated in the Victorian era by (a) Great bursts of interest in amateur natural history (b) The coming of the railways and later buses which made holidays and day expeditions possible and popular. Ferns suffered greatly.

I myself was encouraged at school to make flower collections. On my bookshelf I have the Rev. John's Flowers of the Field awarded to me in 1923 for the best collection of wild flowers, I scoured the countryside for specimens to take into Reading Museum for their nature table.

Again as a young teacher I had my nature table for my pupils. Happily this was not lasting and a different attitude followed.

In photography the colour film has been a great asset - there is much delight during dreary November in revelling in the beauty of a bluebell wood, a field of cowslips or reliving the thrill of looking at a rarity - all there in our slide collection.

What is a rarity? According to the Red Data Book it is a species which is found only on fifteen or fewer ten kilometre squares. Quite a few of our orchids are not found on fifteen squares. What can be done to protect not only the rarities but also those which are rapidly decreasing? Individually, are we doing enough? We are in an era of great development - with the ease of air travel we go further afield to enjoy our natural history - fields of orchids in France, the flowers of Alpine regions etc all linked with geology, archaeology etc. But are we careful enough when we have a camera in our hands? Enthusiasm often causes much damage in the neighbourhood of a much photographed specimen!

When I first joined flower parties I was told I could obtain a permit allowing me to bring back specimens. These could be obtained with the utmost ease - just one or two families barred because of horticultural associations - I had mixed feelings about this!

The remainder of my address I will devote to measures taken in a few countries I have visited. Yesterday I noticed an article in Natural World doing just this. Luckily for me - not referring to my countries. One realises how much there is to do when one sees all the orchids, fritillaries etc on sale in foreign markets, the evidence of liming of birds in Cyprus and other Mediterranean countries. However we must be hopeful. In the past many small efforts have created bigger efforts. Some tour operators running flower and bird tours are devoting a percentage of their profits to conservation.

Eastward to Bulgaria now. On a recent visit I found it had much to conserve - 3,300 plant species in this small country. This included ash, beech and European grasses brought in by Atlantic influences from the north west and floral relics from the distant past.

It has many natural regions owing to its varied relief and climate. With reference to relief - 50% of the country consists of mountain ranges and overlapping young valleys making up a young Alpine-Himalayan folded mountain system.

Another 49% consists of

- (a) East European platform of flat topped hills and old massifs.
- (b) 21% a Mediterranean type region around the Black Sea to the east.
- (c) An inland area of Euro Asia to the north and north west.

So climatic conditions vary between continental and Mediterranean.

The river flow shows sharp fluctuations - there are some floods in summer and autumn due to

- (a) Small catchment area
- (b) A cold climate in parts
- (c) Deforestation from Ottoman domination period.

Bulgaria's love of nature is apparent in the thousands of folk songs and tales and in the works of more recent writers and poets.

In the revival period of the past century there has been sharp criticism of forest clearance after the liberation from the Ottoman domination as well as underlining the need to preserve what was left. The first organised act was passed in 1928. 1933 saw the formation of the Union for Natural History Preservation. The first National Park - Mount Vitosa - came into being as well as some forest reserves. Acts immediately followed

to protect water resources, arable land etc and to endeavour to prevent air, water and soil pollution.

In 1977 came the production of Guidelines for the Protection of the Natural Environment - all were approved by the State Council. Realising conservation relies on public co-operation, nation wide movements such as the Hikers Union sprang up. This body gives publicity to major natural sights, characteristic landscapes etc with the aim "To know and to care". More reserves were created - often protected by (a) buffer zones (b) putting them under the patronage of some public organisation and thus making them responsible for maintenance as well as protection.

In reserves which are natural scenic territories and often characterised by rare plant and animal communities, studies in the Natural Environment are carried out. Admittance along strictly defined roads and paths is only permitted by approval of the committee. There are about 80 reserves out of which 61 are forest.

The National Parks - 8 of them are different. They are often large areas for tourism and recreation with paths, trails, resting places, spots for camping, bonfires, garbage etc. There are the usual rules as well as those forbidding (a) collection of eggs, larvae, pupae, pursuit, catching, transportation, killing, destruction of hiding places, nests, lairs of protected animals. All rules are definitely set out.

As well as these parks there are protected landscapes often along roadsides, railways etc.

The Ropotoma National Park by the Black Sea at the mouth of the River Ropotoma is a unique area - a veritable jungle, quite tropical in its density of trees and creepers. I gave up trying to penetrate it - there was very little light - hence no photographs - but certainly interesting. Nearby is or what has been a threat to the Black Sea coast - the Balkan Tourist development - Golden Sands, Sunny Beach. I was quite impressed by the way the hotels had been set back among the trees of the area. Frequently there was a tree lined road between them and the sea. Here were areas which on exploration provided one with many wild flowers such as Cephalanthera epipactoides, Consolida orientalis etc. Further destruction is now negated by a government ruling.

For Cape Kaliakra reserve I have no praise - it has been made into a landscaped park with a restaurant in one of the caves, I mention it because although the flora is poor, Bulgaria's two colonies of seals are found in the caves below the Red Cliff. On the other hand Frigradsko Zydrelo Gorge is to be admired. Balkan Tours Committee look after this gorge which has been selected as being of particular interest. It is a deep and beautiful gorge with a very fine cave - it is one of the refuges of Haberlea rhodopensis, which is a living fossil. It has persisted for millions of years in areas where its relatives disappeared - near relatives can be found in the foothills of the Himalayas as well as in Greece etc. Nearby Kastrantii Sabatica provides some of the finest and wildest forests of black pine and spruce.

Geologically there are some well looked after natural phenomena. For example -

1. Pobitite Kamini - the standing stones which are enormous columns of grey rock up to five metres high with a diameter of 50 cms - 3m, standing erect above the sands. There are several hundred of them stretching for 2 kilometres. They are of course due to soil and wind erosion.
2. Skalmiti Gubi - the rock mushrooms. The name describes many although some are just columns. They are formed from volcanic tuff's

of different compositions and again erosion has played its part.

3. At the Erkyrapria Reserve erosion has resulted in the formation of three natural marble bridges - the largest and most beautiful is 95 metres long and 43 metres high and 45 metres wide.

Bulgaria is also contributing much to the preservation of relics from bygone ages for example the Aladjo Monastery. In 1901 Varna Archaeological Society was founded and one of its first tasks was the restoration of this monastery which belongs in history to the era of large groups of cave dwellers who dug into the soft clay. It had a chequered history up to the 11th century when its known history begins.

Then there is the Bachova monastery. The Bulgarian government has been generous to the upkeep of religious relics. Bachova is only second to the Rila monastery. Its chapel dates back to the 11th century and is lavishly decorated with frescos and external murals. From being practically in ruins the government have provided its restoration and there is a general effect of great dignity and peace. It is situated deep in the valley of Asenitsa.

To me the greatest interest is the area above the monastery and its surrounding tree covered slopes. Here are the rocks of Cervenata Stena, the Red Wall - formed of palaeozoic marble and rising to 1500 m. The summit is covered with black pine.

In 1962 under the Ministry of Forests it was made a Botanical Reserve. There are rough paths through the forests but the rarest plants are found among the moss covered boulders on the cliff faces. The very special plant is Haberlea rhodopensis the living fossil which I have already mentioned. I was in Bachova 25 days after Easter when the inhabitants nearby carried an icon of the Virgin Mary up to the monastery. Afterwards old and young went on up to the reserve with their simple picnics - a great effort for many but it was impossible not to be impressed by their great enjoyment as well as respect for their surroundings.

Now from east to west - to California which is a land of plenty in the botanical world, 7,700 species which is more than in Central & N.E. U.S.A and Canada together. It has so many varied habitats. Why?

1. It was covered by shallow seas, the climate was moist and warm and so gradually tropical forests dominated the land species.
2. As the climate cooled and drier conditions prevailed the forests gradually became restricted to the northern, coastal areas with a moderate temperature and higher rainfall. During the warmer and drier periods woodland and desert plants from the south replaced forest species throughout Southern California.

3. Then volcanic activity and mountain building changed California's shape. High mountains intercepted rain clouds between east and west so new habitats developed - moisture dependent forests on the west side and rain shadow deserts on the east. So species evolved to fill new habitats with the older species being restricted to certain pockets. Unique habitats are the Vernal Pools which fill during the winter rains and dry out in the summer. They form only in areas where clay soils leach to make hard pan layers beneath the surface. This restricts percolation and then evaporation takes place in the spring. So the pool is first flooded, then moist for a few months, after which it becomes bone dry.

There are many rare plants which germinate underwater then flower round the edges of the drying pool and the seed is stored in the dried mud until the next season.

Vernal pools are isolated from one another so different species evolved in different places.

A striking feature about California's vascular plants is that almost 50% are endemic with some now restricted to half a dozen plants e.g the mahogany tree. Others are heading to extinction and some have still to reach the limit of natural bio-barriers.

What is being done to preserve all this? In 1968 the President of California's Native Plant Society collected a list of 520 for the first C.N.P.S list. In 1973 and 1974 more lists, with photographs, photocopies of labels at herbaria, locations etc were done, & botanists employed, were arranged and funded by the Office of Planning and Research in the State of California. 1974 saw the gathering of botanists at the University of California for evaluation, mapping etc, resulting in a rare plant data book.

- 1) The main list consisted of 704 plants, rare and endangered.
- 2) Second list of 556 plants which were rare but not presently endangered.
- 3) Third list of 134 not rare or endangered but of limited distribution.

In 1979 a second University Conference took place with a stack of cards - it had become the largest rare plant base in the U.S.A.

The information was overwhelming. A voluntary organisation could no longer cope and the university was not willing to continue with the housing entailed. A new organisation was formed with a full time botanist. Its role was set out to educate its large number of members:

- 1) To be aware that world conservation must be linked with economic development.
- 2) Without becoming involved in politics there must be an awareness of political processes.

Discussions were held on topics such as

- 1) Who pays for creating and maintaining world reserves
- 2) Who will pay for alternative livelihoods for displaced people

Out of this came suggestions such as

- 1) The consideration of transfer of money from developed countries to Third World countries
- 2) Cancelling debts in exchange for projects
- 3) The contribution from developed countries to a conservation fund in exchange for access to genetic sources.

A last word - Line 90 on California's taxpayers form is 'Tax deductible contributions to State forests and reserves for

- 1) Outright purchase
- 2) Land exchanges
- 3) Management agreements
- 4) Gifts of land
- 5) Conservation officers working with management'

So far I have not been north - so to Iceland.

Again the love of nature runs through countless sagas. Iceland states that the protection of nature is one type of land use. Specific areas are protected to encourage the intercourse of man and nature so that life on land may not be needlessly wasted nor sea, freshwater or air polluted. Access is given to these areas with special laws exhibited and enforced. Added to the usual ones are those forbidding

- 1) The breaking of branches of trees,
- 2) Uprooting stones and rock,
- 3) Pouring of hot water on vegetated land.

Iceland has a small flora of 470 vascular plants which are chiefly N. European. This paucity is due to isolation. 50% are survivors of the last glaciation.

Now for a look at some of the protected areas

- 1) 1975 Skaftafell was made a National Park. It is looked after by the Nature Conservation Council which employs a resident warden. It contains two farms and the glacial snout of Iceland's largest glacier.

- 2) Myrdalsunder is a desert of black sand due to a terrific eruption 200 years ago. Here the beginnings of new life are studied.
- 3) Mamaskard is a high temperature region administered by the Nature Conservation Council. Here there are boiling springs, still blue pools, the edges of which are covered with colourful mineral deposits.
- 4) Landmannlaugar - a protected area for enjoyment with its warm natural bathing pools.
- 5) Lake Myvatn in the north west is one of the protected areas for Iceland's exciting bird population. Various headland areas are also protected.
- 6) Black Castles is a public park with very dramatic lava formations.
- 7) North west of Husavik is a protected fossil cliff looked after by farmers of the neighbourhood. Rock climbing is forbidden.
- 8) Surtsey - the island which was destroyed by a recent eruption, is being carefully watched for the beginnings of new life by the Surtsey Research Society.

To conclude - other countries are trying to conserve their heritage - what about ourselves? The support of an illegal black market where rarities have fetched very high prices and there has been little need for concealment has not helped. There are stricter controls now. 90 countries ratified the Convention of International Trading in Endangered Species. Now horticulture is genuinely trying to propagate rare species.

Then there has been smuggling from Mexico to U.S.A. and re-exporting under a U.S.A. nursery certificate. Turkey sent cyclamen and other bulbous species to the Dutch fields. Now consignments are checked before auctions.

In the end all depends on the goodwill of man which is not given until basic social and economic needs are satisfied. So we must look at people trying to get a balance.

What about weed control? The British Agricultural Association (B.A.A) has linked with the Nature Conservancy Council and the Cereals & Game Birds Research (C.G.R.P) to mount one of the biggest projects in the E.E.C. Year of the Environment. B.A.A. is the principal sponsor - the object being to search out wild flowering plants on the rich fields of Britain's arable farms. A researcher at C.G.R.P's Manydown site spotted pheasant's eye, a common enough plant 40 years ago. Then four more vanished species turned up. Trials followed as part of C.G.R.P's headland initiative. In this herbicides to control wild oats and competitive broad leaved plants are used in the autumn followed by specific weed killers in the spring, thus allowing non-competitive plants to continue growing.

B.A.A.'s director welcomes the liaison of expertise. He has said that environmental research has figured prominently in the development of new products. The industry now presented with exciting new facts must research further so that farmers can have the necessary advice to conserve flora and fauna on their land with pesticides still a valuable tool. In 1986 C.G.R.P enlisted the help of the Nature Conservancy Council to commission trusts to survey 19 farms in 7 counties which had adopted Headland Conservation Management. Of the Botanical Society's list of 25 endangered species, 15 were found on surveyed farms - 12 of them at Manydown.

C.G.R.P. suggests that intensive farming may suppress but not eradicate. Certain individual firms are also running projects - Bayer has spent over £1684 million on environmental protection measures in the last ten years. The organisers of National Farm Trails competitions state that maximum production from every last square yard is not the be all and

end all of farming.

Doubtless much of this is done to improve images but in my opinion this is helpful in various ways to a cause which is dear to us all.

* * * * *

READING URBAN WILDLIFE GROUP
BERKSHIRE BUCKINGHAMSHIRE & OXFORDSHIRE NATURALISTS TRUST
READING WOODLOUSE WATCH 1987

Aims of the Survey

The 'Reading Woodlouse Watch 1987' was carried out from March to September 1987 with the following four objectives:-

1. To record the distribution of a group of invertebrate animals in an urban area for the first time anywhere in the world.
2. To educate school children and the general public as to the diversity of an apparently uninteresting group of animals.
3. To obtain scientific information which could be linked to the National Woodlouse Survey Scheme run by the Biological Records Centre at the Institute of Terrestrial Ecology.
4. To provide publicity for the Reading Urban Wildlife Group.

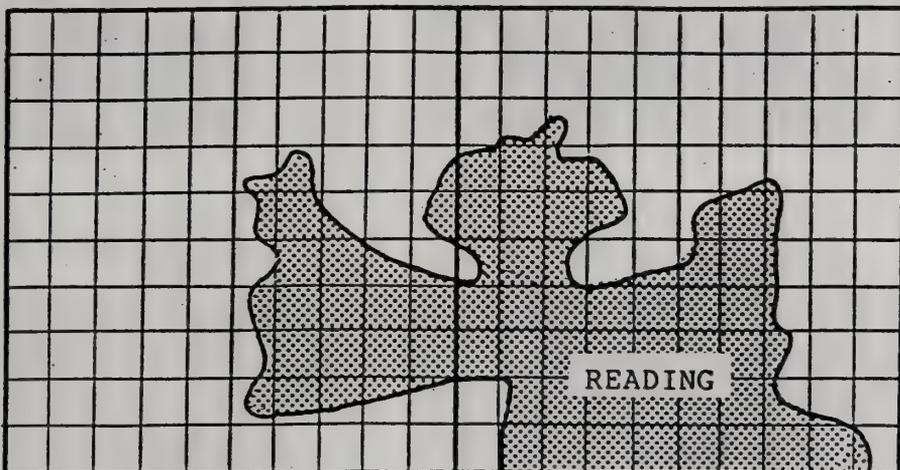
How was the Survey carried out?

1000 circulars, briefly describing the purpose of the Survey, were distributed to schools, teachers' centres, local radio and newspaper offices, and were included in the BBONT Spring mailing to addresses in the Reading area. This first circular contained a tear-off slip which people were invited to return if they were interested in participating.

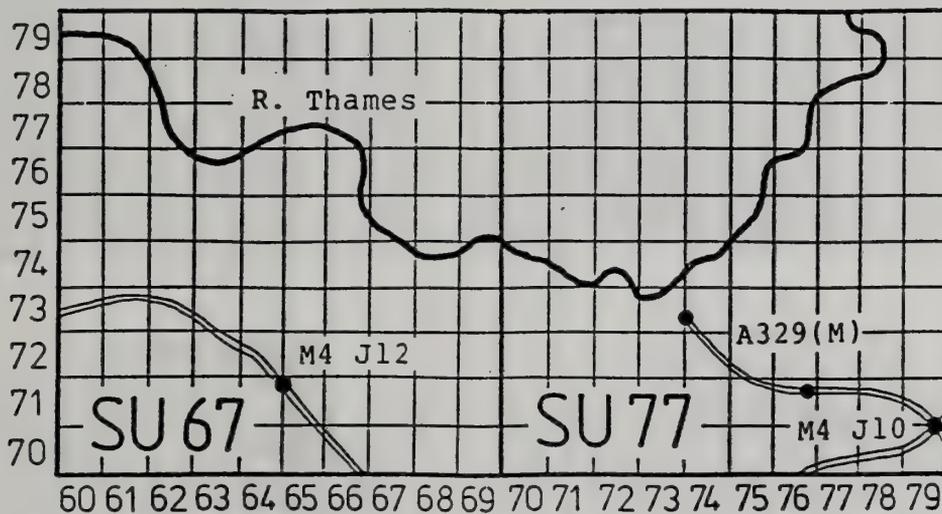
135 slips were returned. These people were sent a letter describing how the Survey was to be carried out, a couple of recording cards which listed all species of woodlice in Britain (supplied by the Biological Records Centre), and a simple guide to the identification of the five most common species of woodlice in the U.K. Common names were introduced for the so-called 'Famous Five' (and all other species) for the benefit of non-scientists (i.e. most of the people involved in the Survey!). These species were the Common Pill Slater (Armadillidium vulgare), Common Shiny Slater (Oniscus asellus), Common Striped Slater (Philoscia muscorum), Common Rough Slater (Porcellio scaber) and Common Pygmy Slater (Trichoniscus pusillus). Participants were asked to indicate on the card which of these five species were present in their garden, school playground etc., together with their name and address and the exact location of the site from which they had collected the woodlice. Of the 135 people who were sent record cards, 51 individuals returned a total of 103 cards.

Most people had no difficulty in recognising the Famous Five. However a more comprehensive guide to the other 14 less common species which it was thought might be 'turned up' by the Survey was produced, and this was requested by 27 of the 51 people who eventually sent records. Nevertheless, all records for species other than the Famous Five, the Rosy Slater (Androniscus dentiger) and the Ant Slater, (Platyarthrus

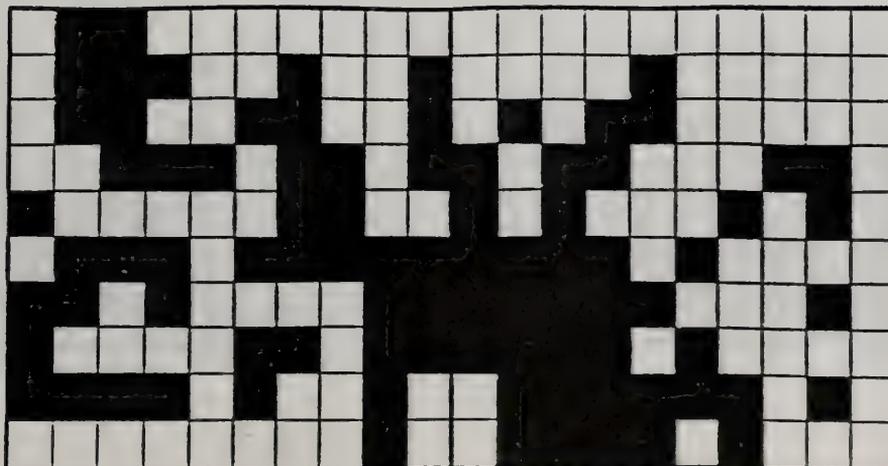
Area of Survey



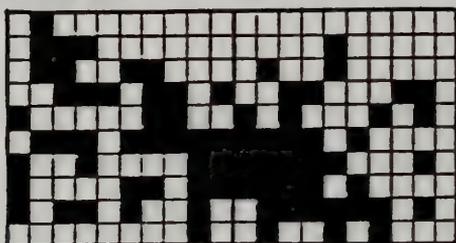
Ordnance Survey Grid Squares



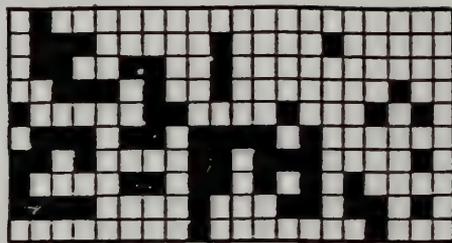
Squares with at least one record



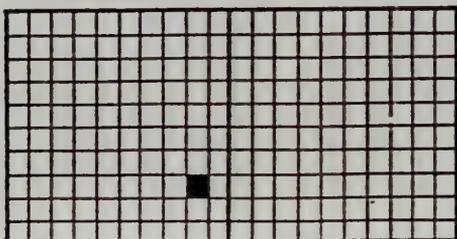
PORCELLIO
SCABER



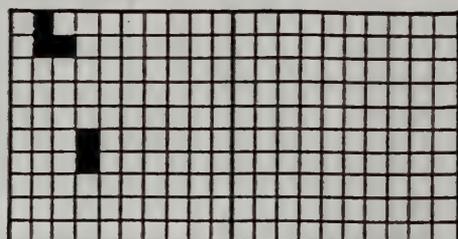
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PUSILLUS



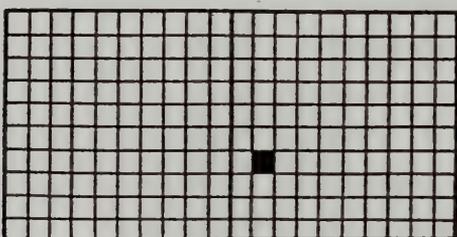
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DILATATUS



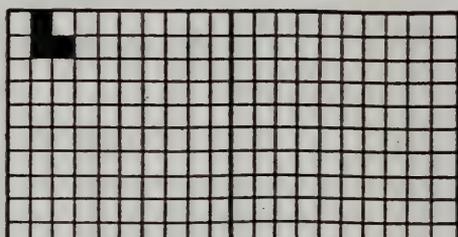
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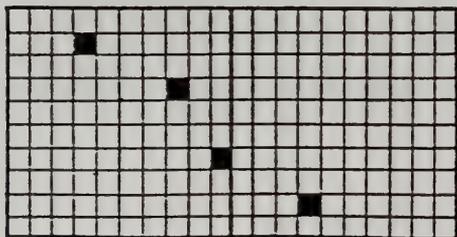
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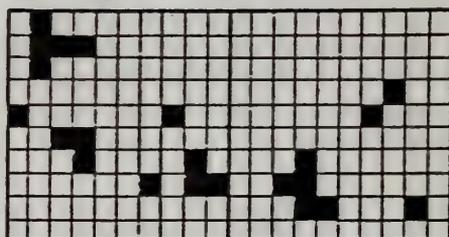
HAPLOPHthalmus
MENGEI



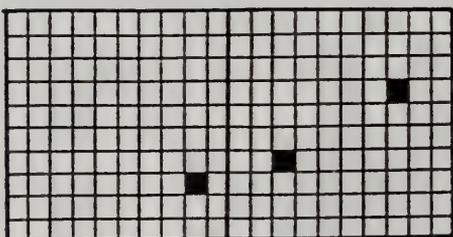
PORCELLIO
SPINICORNIS



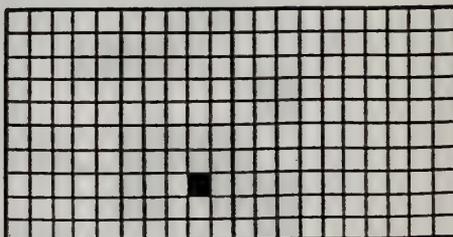
PLATYARTHrus
HOFFMANNSEGGI



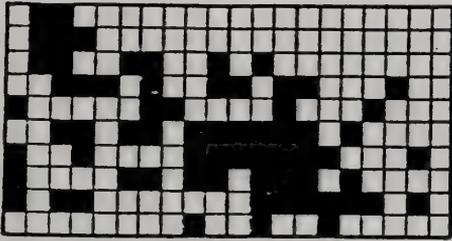
PORCELLIONIDES
PRUINOSUS



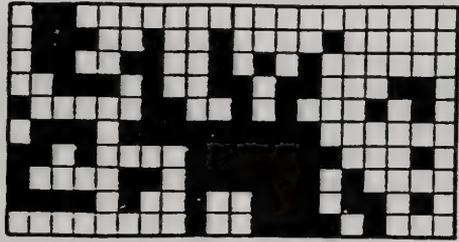
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RATHKEI



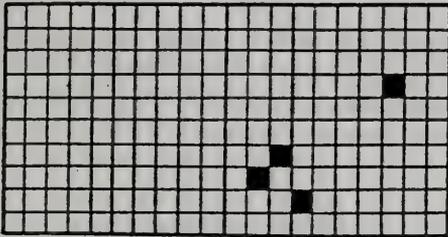
ARMADILLIDIUM
VULGARE



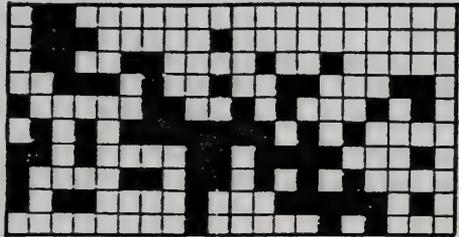
ONISCUS
ASELLUS



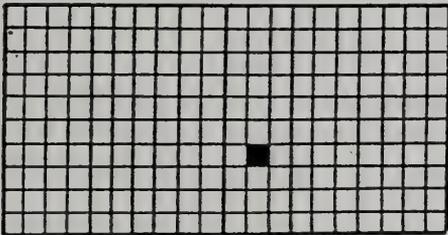
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NASATUM



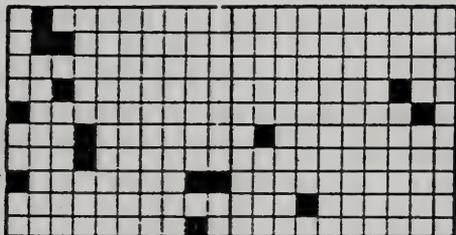
PHILOSCIA
MUSCORUM



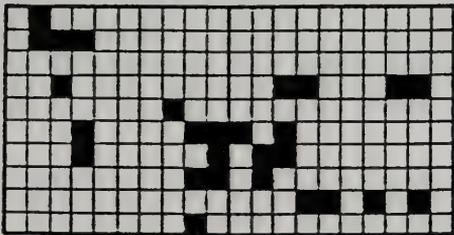
ARMADILLIDIUM
DEPRESSUM



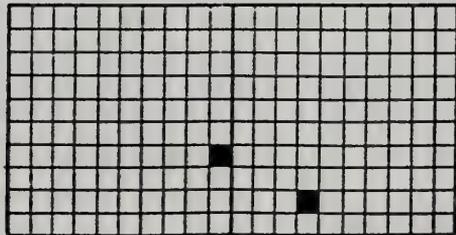
TRICHONISCUS
PYGMAEUS



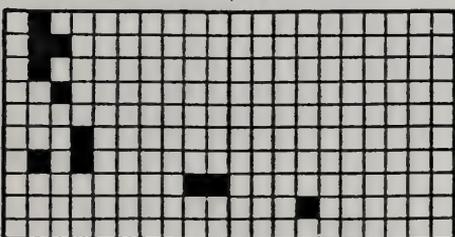
ANDRONISCUS
DENTIGER



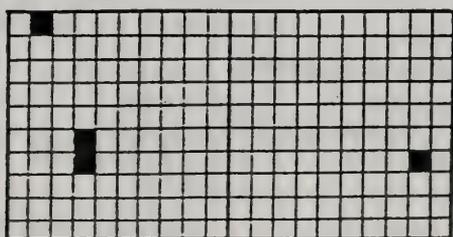
CYLISTICUS
CONVEXUS



HAPLOPHTHALMUS
DANICUS



LIGIDIUM
HYPNORUM



hoffmannseggi) which are easy to identify with the naked eye, had to be supported by specimens which I insisted on checking.

Results of the Survey

The records are presented as presence or absence of a species from each 1 km square of the Survey area. Solid black shading indicates at least one record from somewhere in the square. Some squares contain up to four records for a single species. 88 of the 200 squares had at least one record, a quite respectable coverage under the circumstances.

It is clear that the most common woodlice are Armadillidium vulgare, Oniscus asellus, Philoscia muscorum, Porcellio scaber and Trichoniscus pusillus. These 'Famous Five' species were found by almost all respondents to the Survey and must be present in large numbers in every 1 km square in the Reading area.

Androniscus dentiger, Platyarthrus hoffmannseggi and Trichoniscus pygmaeus were found much more frequently than I had anticipated. These three species are also probably present throughout the Reading area although they were not recorded from as many squares as the Famous Five because they are more difficult to find.

Three more species, Ligidium hypnorum, Porcellio spinicornis and Haplophthalmus danicus, are probably fairly common in the region but were very rarely found because of their retiring habits. For example, one morning I found a single Porcellio spinicornis in my bathroom sink but despite extensive searches at night by torchlight, I have not found any further specimens of this nocturnal species either inside or outside the house.

The remaining nine species are apparently very rare although they must certainly be present in several more squares than are indicated on the maps. All the sites for Armadillidium nasatum, Cylisticus convexus and Porcellionides pruinosus were synanthropic (i.e. associated with human activity) and when found, these three species were quite abundant. Trichoniscoides albidus was found in very damp habitats on the banks of the River Thames and River Pang where it was rare. Single specimens of Trachelipus rathkei and Porcellio dilatatus turned up among rubbish behind Prospect Park Mansions House (where Porcellionides pruinosus was extremely abundant) and two Porcellio laevis and Armadillidium depressum were found in Forbury Gardens in the middle of Reading. Several of these records are 'firsts' for Berkshire. Furthermore, the north bank of the River Thames east of Goring is the only known inland site in South East England for Haplophthalmus mengei.

Conclusions

The four aims of the Survey have been accomplished thanks to the enthusiastic support of the Reading Urban Wildlife Group and the schoolchildren, teachers and members of the public who sent in records. It is hoped that the 'Reading Woodlouse Watch 1987' will stimulate other urban wildlife groups to conduct similar surveys of invertebrates in their own areas.

Dr. Steve Hopkin
Department of Pure & Applied Zoology
University of Reading.

December 1987

How Typical Are Our Fungus Forays?
Alan Brickstock

Looking back over our fungus records for the last ten years, how variable are they, and how typical are they?.

The frequency of most species varies quite markedly from year to year, as a result of climatic variations. Since the total number of species likely to be found in any one family is relatively small, one would expect the actual numbers to fluctuate widely. However, the numbers per family are, with a few exceptions, not that variable; mostly the range is within a factor of two or less. This is despite the fact that a species present in one location in abundance one year may be absent there for several years subsequently, and then appear again.

I then tried adding together the total number of species in twelve major families, and expressing these as a percentage of the total number of species found that year. The percentages for the first three years, average 51.4, are noticeably higher than those for subsequent years. This is not surprising, as the twelve families chosen are the ones we would have known best, in what I regard very much as 'learning years' - but aren't they all!. For the last seven years, the percentage is surprisingly constant, varying only from 42.6 to 46.7. The mean value for these seven years is 44.5, with a standard deviation of 1.2. Next year...?.

The grand total for the ten years is 711 species, of which 315, or 44.2%, are in the chosen twelve families; this percentage being virtually identical to the mean of the yearly percentages.

This constancy is interesting, as it means that there is little variation in the balance between these well-known families and all other families: one might perhaps have expected the Polypores to be much more or much less frequent than gill fungi in some extreme seasons, but there is no evidence of this.

How does our list of species compare with the British species as a whole?. This is not easy to answer, as I am not aware of any comprehensive British list. Some feel can be obtained by looking at Roger Phillips book in which the 12 families selected have, by my count, 397 representatives, out of a total of 884 species in the book, a percentage of 44.9, virtually identical to that for local forays.

Another figure can be obtained from the BRC check card, which has 318 species in the twelve families, out of a total of 832, a rather lower percentage of 38.2.

Looking at the mean number in each family averaged over the seven years, as a percentage of those in Phillips, we seem to be very low on Agaricus (27%), Cortinarius (21%), Lepiota (32%) and Tricholoma (28%), the figures for the other families mainly lying between 40 and 50 percent. Agaricus and Cortinarius are two genera whose species are not easy to distinguish, so this might be expected to keep their counts on the low side; or do we just not have so many in our area?.

However, the numbers of species of Agaricus, Cortinarius and Lepiota on the BRC check card are much smaller than those in Phillips, so comparison against this list would bring our figures up to about the 50% level in these genera also.

So what?. These numbers may not prove anything, but I think they are interesting, and suggest that our forays may be reasonably typical of those over the country as a whole. Perhaps next year will be different...?.

TABLE ONE
Numbers of species in twelve major families, 1978 to 1987.

Family	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Mean	Total
											81-87	78-87
Agaricus	1	4	6	4+	11+	11	11	5	5	4+	7	19+
Amanita	6	7	10	9	9	10	12	10	11	9	10	15
Boletus*	11	14	18	17	22	26	19	18	18	20	20	42
Clitocybe	5	11	7	8	8	7	10	8	10	8	8	15
Collybia	4	8	8	7	7	6	7	7	8	9	7	12
Coprinus	6	6	7	8	8	9	11	8	6	7	8	18
Cortinarius	4	16	18	12	19	13	12	15	10	22	14	47
Lactarius	10	12	17	18	20	17	18	13	16	17	17	32
Lepiota	3	8	4	11	9	6	11	4	6	8	8	19
Mycena	7	12	11	20	16	19	23	15	13	19	18	32
Russula	9	19	19	17	24	32	22	21	21	26	23	45
Tricholoma	0	3	7	11	8	8	6	5	4	7	7	19
Total above	66	120	132	142+	161+	164	162	129	128	156+	148	315+
Years total	134	227	254	320+	365+	362	347	303	285	351+	332	711+
% of total	49.3	52.9	52.0	44.4	44.1	45.3	46.7	42.6	44.9	44.4	44.6	44.2

TABLE TWO.
Species in each family on various lists.

Family	Phillips	BRC Card	Forays (mean)	Forays/ Ph's %	Forays/ BRC %
Agaricus	27	13	7	27	56
Amanita	20	16	10	49	62
*Boletus	53	32	20	38	62
Clitocybe	20	17	8	42	50
Collybia	14	17	7	52	43
Coprinus	16	21	8	51	39
Cortinarius	69	36	14	21	40
Lactarius	43	36	17	39	47
Lepiota	24	16	8	32	47
Mycena	31	41	18	58	44
Russula	55	52	23	42	45
Tricholoma	25	21	7	28	33
<u>Total</u>	<u>397</u>	<u>318</u>	<u>148</u>	<u>37</u>	<u>46.5</u>

* Including Boletus, Leccinum, Suillus, Tylopilus.

+ Pat Andrews also recorded a number of additional rare Agaricus, not otherwise on our lists; 16 in 1981, 14 in 1982, and 3 in 1987. I have, rather arbitrarily, omitted them from the totals and percentages, for comparison purposes. If they were included, the percentages for 1981, 1982 and 1987 would become 47.0, 46.0 and 44.9 respectively.

1987 - The First Year of the B.S.B.I. Scheme to Record Plants in Berks

Humphry J.M. Bowen

During this year and the next the Botanical Society of the British Isles is organising an intensive collection of plant records from selected 10 km x 10 km Grid squares, and from 2 km x 2 km tetrads within them. The results for the large Grid squares will be compared directly with the data collected for the Atlas of the British Flora (1962). The tetrad records will be useful baseline data for future exercises of this kind. The results of this year's efforts are summarised below for vice-county 22 (Berkshire).

Grid Sq./Tetrad	Initials of recorders	No of species seen in 1987
SU 29 Faringdon	CC, HJMB, JS, ML, SE	430
2298 Buscot	CC, ML, SE	211
2892 Little Coxwell	CC, HJMB, SE	304
SU 59 Wittenham	CMB, HJK, HJMB, JPB, RCP	563
5090 N. Didcot	HJK, RCP	306
5298 Radley	CMB, HJK, HJMB, JPB	298
5892 Shillingford	RCP	305
SU 56 Aldermaston	AB, HJMB, SEv	591
5268 Turners Green	HJMB	254
SU 86 Sandhurst	CJH, HJMB, SO	528
8268 St Anns	CJH, IF, JA, SLJ, SO	264
8862 Deer Rock Hill	SO	209

These results are encouraging in view of the fact that the total number of species recorded in most Berkshire Grid squares is around 750. The seven new vice-county records (NCRs) show that there is still much to be learnt about the county's plants.

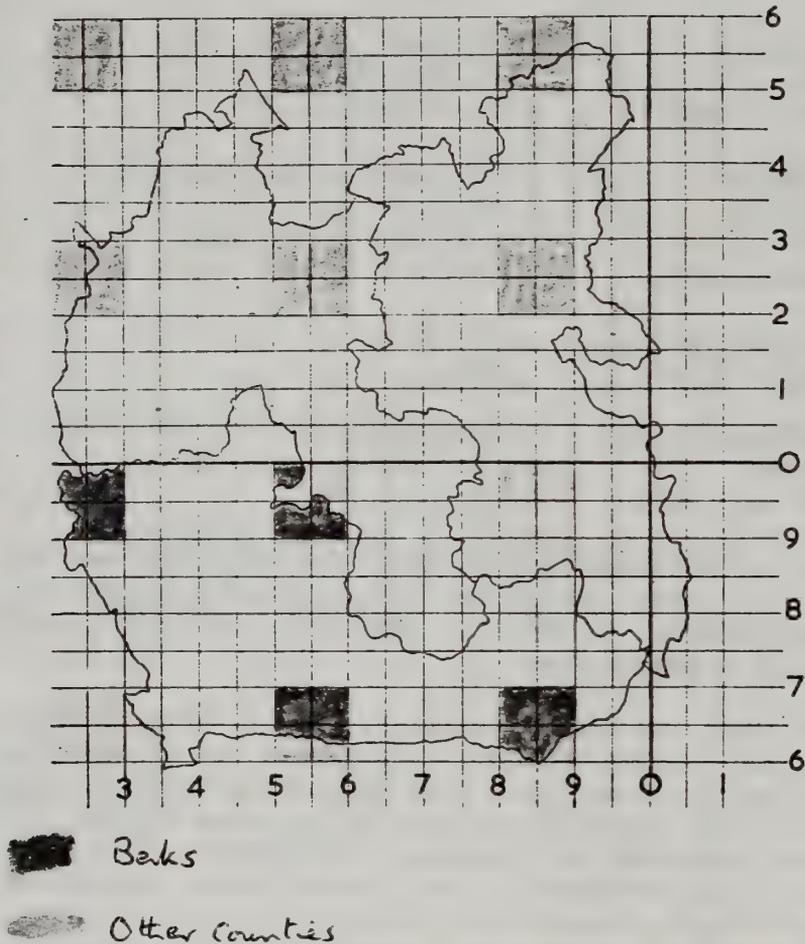
The Faringdon area, now administratively in Oxfordshire, has been worked by Kisty Creighton, Susan Erskine, Mary Loukes and others. The meadows of the upper Thames valley still have such characteristic plants as Black Poplar, Fritillary, Greater Burnet and Early Marsh Orchid, but all too many have been 'improved' by ploughing and resowing. The old sponge gravel pits here are often interesting. Many of the better records are aliens or casuals such as Burnet Rose (NCR), Bulbous Corydalis (*C. solida*), Field Woundwort, Peppermint and the weedy grass *Phalaris paradoxa*.

The square including Radley and N. Didcot is shared with v.c.23 (Oxon), and much work has been done here by John Killick, Richard Palmer and others. Loddon Lily still occurs by the Thames, and other scarce wetland species seen in the survey are *Azolla*, *Elodea nuttallii* (NCR, covering acres in old gravel pits), *Nymphoides peltata* in one pond, the water buttercup *Ranunculus trichophyllus*, and three hybrid willows (*Salix x calodendron*, *S x forbyana* and *S. x smithiana*). Good records from the drier soils are Yellow Milk-vetch, Clary, Fiddle Dock and two rare vetches, *Vicia bithynica* (an NCR) and *V. tenuissima*. One clump of the hybrid grass *Festuca arundinacea x gigantea* was seen, and several of the fast-declining cornfield weeds (Corn Gromwell, Corn Parsley (*Petroselinum segetum*) and Weasels Snout. The rare willowherb *Epilobium lanceolatum* occurred as a casual near Didcot, near the newly planted tree *Alnus cordifolia* (NCR).

The Aldermaston square has been thoroughly worked by Alan Brickstock and others, as its high total score shows. However, I received no records for the Turners Green tetrad by mid-November, when a flying visit logged 254 species. This square is relatively well-wooded, with records for the Durmast

Oak, (Quercus petraea), Alternate-leaved Golden Saxifrage, Herb Paris, Heath Cudweed and the woodrush Luzula sylvatica. No less than 23 Carex species were found here. Of particular interest are the records for the spurge Euphorbia stricta, a casual here but an NCR, the aliens Yellow Figwort and American Duckweed (Lemna minuscula), and the welcome colonisation by the Royal Fern and Greater Spearwort.

B.S.B.I. Mapping Scheme in BBONT region
1987-8



Somewhat fewer species have been recorded near Sandhurst, where the spadework has been carried out by Carol Mora, Sean O'Leary and others. The terrain is acidic, and one tetrad is especially monotonous in its vegetation. Nevertheless there are a lot of interesting plants to be found, such as the Pillwort Fern (Pilularia globulifera) in pools, the tiny perennial Sagina subulata by tracks, and the grass-like Eleocharis acicularis forming swards by some old pits. Most of the characteristic plants of heath and bog were refound, notably Agrostis curtisii, two sundews, Genista anglica, Bog St Johnswort, Bogbean, Bog Asphodel, Sweet Gale, Marsh Cinquefoil, Radiola linoides, and also the very scarce sedge Carex elongata. The alien shrubs Gaultheria shallon, Kalmia polifolia and Pernettya mucronata are more or less naturalised on heathland, and several showy aquatics have escaped from cultivation near Sandhurst. The normally maritime Scurvygrass (Cochlearia danica) and the inconspicuous grass Luccinellia distans (both NCRs) are successfully colonising certain heavily salted roadsides.

Natural History in Place-Names

by Daphne Phillips

For the naturalist a study of local place-names can shed a great deal of light on the early character of Berkshire, its various kinds of terrain, and the animals, birds, trees and plants which gave their names to some of the places.

The meaning of place-names is, however, a complex subject, beset with traps for the unwary, as anyone who browses through Margaret Gelling's absorbing three-volume work The Place-Names of Berkshire will quickly discover. The earliest known spellings, usually Old English, all too often indicate very different meanings from those suggested by modern spellings. Swallowfield, for instance, does not mean 'the field where swallows flew', and neither has Aldermaston anything to do with alder trees. The first is derived from 'Swealwe', an early name for the stream formed by the union of the Blackwater and the Whitewater, and meaning 'rushing water'. The second means 'farm of the ealdormann', a chief officer of the shire.

In spite of all the efforts of modern research and scholarship the meaning of many names is still uncertain, including that of the county itself. Berkshire may have taken its name from Berroc or Barroc Wood, where, according to Asser writing in the 11th century, box trees grew in abundance. The location of this wood has not been ascertained, although a later reference to it suggests somewhere in the Wantage area. Another possible derivation is from the Celtic word, 'barrog' meaning hilly, which certainly fits the western part of the county.

More certain are the frequently used elements of place-names describing the kind of terrain or land use in early times. Usually the second part of a name, these include -hurst, -ley, -wood, -field, -don, -bourne, -mere, -marsh, and -well. Hurst (Old English 'hyrst') meant a wood or wooded hill, as in Tilehurst, Sandhurst, St Nicholas Hurst. Ley (O.E. leah) indicated a clearing in a wood, later a meadow, as in Earley, Hurley, Farley, Riseley, Woodley and others. As befits a county heavily wooded in ancient times there are other names, such as Kentwood, Westwood, Woodspeen, which include O.E. 'wudu', a wood, forest or timber.

Field (O.E. feld) was a unit of land used for cultivation, and there are several adjoining parishes in central Berkshire - Arborfield, Shinfield, Swallowfield, Stratfield Mortimer, Burghfield, Englefield and Bradfield - whose names show that they contained rich farm lands for early settlers. In contrast to these low lying areas the uplands of west Berkshire often have place-names including -don or -down, meaning hilly, open country. Ashdown, Bowdown, Faringdon, Lollingdon, Langdown Hill, Ogdowen are some of these.

Places taking their names from water sources include those with O.E. 'burna', a stream, as in Pangbourne, Lambourn, Hagbourne, Enborne, Winterbourne; and O.E. 'wiella', a spring or well, as in Brightwell, Sotwell, Harwell, Sunningwell, Trunkwell, etc. O.E. 'mor', a marsh or barren waste, is found in Loreton, Snelmore, Southmoor, The Moor (Cookham); while O.E. 'mersc', a marsh, occurs in Tidmarsh, Bulmershe, Marsh Benham and Marsh Mill (Remenham). An unusual but straightforward descriptive name is Bray, derived from Old French 'braye' meaning mud.

The names of a few animals, birds, trees and other plants have been used by man to identify certain places. The importance of sheep farming in west Berks is recorded in Lambourn, perhaps the place where lambs were washed, and Great and East Shefford, where flocks forded the stream. Pigs gave their O.E. name 'swin' to Swinford on the Thames and Swinley,

a woodland clearing for pigs in the Winkfield parish. The eastern part of Berkshire, once largely covered by Windsor Forest, has several names including 'baer' (misleadingly spelt 'bear' in modern times). The Old English meaning was 'woodland feeding place for swine' and this was the origin of Bearwood, Billingbear, Bear Grove and Bear Hill, all near Wokingham; and Bare Leys and Bere Court in Pangbourne. Animals whose names were less commonly used were the wild cats at Catmore, boars of Boars Mill, the wolves of Woolley, and the badgers whose O.E. name 'graeg' forms the first part of Grazeley. Foxes and frogs were, perhaps, so common that no place of importance was distinguished by their presence, but their names occur in localities such as Foxhill in Earley, Foxcombe in Sunningwell, Foxley in Kintbury, Frogmoor Farm in Bradfield, and Frogmore in Windsor.

Among birds who inspired place-names were the cranes at Cranbourne, the crows at Crowthorne, a name originally given to a solitary tree at the junction of the Bracknell and Wokingham roads, the dove (O.E. 'culfer') in Culver Lane, Earley, and the eagle whose O.E. name 'earn' occurs in Earley. Finchampstead charmingly describes a homestead frequented by finches, and Purley a place inhabited by snipe (O.E. pur). East and West Hendred took their names from the water hen, while East and West Manney took theirs from 'hana' the cock. 'Ened' the duck was clearly prominent at Enborne, and 'gos' the goose at Goosey, which means 'goose island', perhaps from its situation between two brooks.

Only one fish contributed to local place-names: the River Ock derives its name from a Celtic word for salmon.

Throughout the ages trees have been an obvious choice for naming places, landmarks, and in more recent times houses, as the hundreds of names indexed by Margaret Gelling show. Some tree-inspired names which can be traced back several centuries are Appleford and Appleton, the ford and the farm where apple trees grew; Ashampstead, Ashbury, Ashdown, Ashridge; Beech Hill; Barkham (from 'beorc', birch tree); Boxford and Welford, fords where the box and the willow grew. Humbler plants gave names to Beenham and Beynhurst (the bean); Binfield (bent grass); Broomhall (broom); Cockney Hill (coccol=tares); Faringdon, Farley Hill, Fernham, Farnborough (ferns); Heathfield (heather); Leckhampstead (leek or garlic).

The many names of more recent origin for fields and other localities, e.g. Crazies Hill recalling a dialect name for buttercups, would make an interesting study, but it is too large to be dealt with in this short article.

* * * * *

Caterpillars

Roland Ramsdale

Caterpillars are the larval stages of butterflies and moths. This article will show how the caterpillar stage fits into the life cycle and attempts to show something of the diversity of forms that the caterpillars take. A key is provided to enable most caterpillars of the larger moths and butterflies to be placed in their correct families. Finally a brief summary of reference works on caterpillars is given.

Life History

Butterflies and moths (Lepidoptera for the more technically minded) start their life as eggs. These consist of a nutrient solution in which the embryo develops, surrounded by a tough leathery protective covering with a waxy lining to retain the fluid. In British species they vary in size from a small fraction of a millimetre up to about 2mm. Whilst the eggs of most of the larger moths are roughly spherical or hemispherical, some of the micro moths have eggs which are almost disc shaped, and some of the butterflies have wine-bottle-shaped eggs. Some species' eggs are smooth whilst others have raised patterns on them - those of some of the Blues being especially intricate when looked at under a low power microscope. The colour of the eggs also covers a great range. Most are green and blend in well with the leaves on which they are laid. Others are creamy, some brown, some deep navy blue (almost black). Others have one or more coloured bands around them, or spots of contrasting colour. Many of the lighter coloured eggs darken about a day or two before the young caterpillars are ready to emerge.

Different species also differ as to where they lay their eggs. Many moths and butterflies lay them on a leaf of the foodplant, sometimes singly, sometimes in clusters of up to 200 to 300 eggs depending on the species. Those that lay clusters often arrange the eggs very neatly in hexagonally packed rows, or some arrange them in neat bands around a plant stem. Others lay them in a relatively amorphous lump. Certain species insert the eggs into the plant, especially grass feeding species. Others broadcast their eggs widely whilst flying over areas of foodplant. Some lay their eggs away from the foodplant but high enough up so that the young caterpillars can be blown away by the wind when they let themselves down on a silken thread. This method of ballooning is similar to that practised by some species of spider.

Caterpillars

The first thing that most caterpillars do on emerging from the egg is to eat the eggshell. For many species this first meal is vital to their survival. The caterpillar is the main feeding and growth stage. In order to grow they shed their entire skin. Most caterpillars do this from 4 - 6 times. They are mainly herbivorous (plant-eating) but a few notorious species such as the Orange Tip and the Dun Bar are cannibals. It has even been suggested that the Dun Bar caterpillar might actively seek other caterpillars to devour. Whilst we normally think of caterpillars as eating the leaves of plants, some species prefer the flowers, others feed on the roots or nibble the stems at ground level. Some live inside the stems, and quite a large number of the micro moths' caterpillars eat inside leaves forming leaf mines which are often easier to identify than are the adult moths themselves.

Chrysalids

Once the caterpillar has finished growing it sheds its skin for the final time and turns into a pupa or chrysalis. The chrysalids of most moths are very uninteresting, ranging in colour from an ochreous-brown to a very dark brown (almost black), and a shape resembling an egg that has been elongated to almost a point at one end. Whilst some species are long and slender

others are short and dumpy. Outlines of where the legs and wings of the adult moth are going to develop are usually visible, but there are very few features for distinguishing individual species. The chrysalids of most moths are enclosed in a cocoon. In species that pupate underground this is often only a flimsy lining to the hole in the ground that the caterpillar has produced by wriggling about, whereas in species such as the Burnets that pupate high up on grass stems the cocoon is of a tough papery consistency and provides considerable support for the chrysalis, species that pupate low down amongst vegetation or between leaves usually have cocoons that are fairly soft and dense, but retain their shape reasonably well. The cocoon of the Puss Moth is reinforced with chewed tree bark and hardens to a lump that is hardly softer than the bark of the tree trunk on which it pupates. Most stem miners and wood borers pupate in the safety of the stem or branch in which the caterpillar has been feeding.

The pupal stage is one of tremendous reorganisation of the bodily structure - the leaf-eating walking caterpillar has to be transformed into a flying insect that will take only liquid food and must be capable of reproduction. The hard outer skin of the chrysalis acts as a kind of mould inside which the larval body is broken down into fluid and then recomposed into the adult moth or butterfly. This recomposition resembles, in some respects, the initial development from a fertilised egg into a caterpillar - almost a second embryogenesis in the moth or butterfly's life cycle.

The time spent in the chrysalis is very variable - some species spend only a few weeks in this stage whereas others such as the Goat Moth may remain as a chrysalis for several years. In some multiple brooded species such as the Large White, it varies according to the time of year - during the summer about 3 weeks will be spent in the chrysalis, but during the winter it will be 5 or 6 months. In some species the moth forms within the chrysalis in the autumn but does not emerge until the spring. This enables species like the Common Quaker to get off to an early start during March or early April.

The Adult or Imago

It is hardly necessary to describe butterflies and moths, but it is worth pointing out a few aspects of their biology.

The majority of butterflies and moths are characterised by the possession of two pairs of wings which are covered in scales. However in a few species the wings of the female are reduced to mere stumps and the female moth never leaves the vicinity of the cocoon, and often lays her eggs on it. Most butterflies and moths feed almost exclusively on nectar, but some species do not feed at all. Butterflies like the Red Admiral are partial to rotting fruit, whilst one family of micro moths has chewing mouthparts and eats pollen.

Structure of Caterpillars

Figure 1 (page 22) shows the structure of a typical caterpillar. This consists of a head followed by 13 segments. The head is armed with biting mouthparts or mandibles capable of cutting pieces off leaves and crushing them somewhat before they are taken into the body. The head bears a number of sensory organs connected with feeding - enabling some species to be very fussy as to what they eat - some being limited to a single species of foodplant. Caterpillars possess only simple eyes called ocelli. These are not capable of forming an image, but only of telling light intensity. In most species there are 6 on each side of the head. Caterpillars can be startled by a passing shadow such as might be caused by a hungry bird, but they are also sensitive to vibrations of the foodplant. Most caterpillars possess a silk producing gland. The silk has a variety of uses - a rope on which to escape in an emergency, a strand on which to go ballooning through the air for dispersal, a ropeladder for getting a better grip on smooth surfaces

Reference Works

Whilst the caterpillars of British butterflies are covered more or less adequately in most of the standard reference works on British butterflies, there is no book currently in print which covers anywhere near all the British moth caterpillars. I believe that the following list covers the most important works in English.

Wilson, S. & Wilson, E., 1880. *The Larvae of the British Lepidoptera*. Reeve, London.

The illustrations in this book are often better than those in Buckler, but it is a very rare book. I gather that its current price secondhand is in the region of £120.

Buckler, W., (editors Stainton, H.T. & Porritt, G.T.) 1886-1901. *The Larvae of the British Butterflies and Moths*. Vols 1-9. Ray Society, London. This is the standard work, but if you can find a complete set it will cost you £600. Individual volumes sell for £35-£40. The plates are hand coloured and often quite good, but the accompanying descriptions are not always as comprehensive as I would have liked.

Haggett, G.M. 1981. *Larvae of British Lepidoptera not figured by Buckler*. British Entomological & Natural History Society. London. A useful supplement to Buckler (assuming you have Buckler) and it should only cost about £16 new. For a new work I feel that the quality of the plates leaves a lot to be desired.

Stokoe, W.J. & Stovin, G.H.T., 1944. *The caterpillars of the British Butterflies*. Warne. London. About £15 or £16. The plates usually at least a little faded or blurred by damp. I would prefer to spend my money on Howarth 1973 and get the butterflies and their caterpillars illustrated.

Stokoe, W.J. & Stovin, G.H.T., 1948. *The Caterpillars of British Moths* (2 vols). Warne, London. The printing of the plates is usually quite abysmal, and the descriptions are of variable quality. The pair of volumes will cost £50-£60, and is the work that I would recommend as providing the best compromise between quality, comprehensiveness, and price.

Carter, D.J., 1979. *The Observer's Book of Caterpillars*. Warne, London. This is the cheapest book on caterpillars to provide coverage of a large number of species. It is by no means comprehensive, the descriptions are too short, and often the illustrations too small. It is, however, affordable - at £4 new, and is pocket-sized for field work.

Carter, D.J., and Hargreaves, B., 1986. *A Field Guide to Caterpillars of Butterflies and Moths in Britain and Europe*. Collins, London. This is the best book currently in print. It is a lovely book with caterpillars artistically arranged on their foodplants and miniature illustrations of the adult butterfly or moth opposite. Unfortunately, the illustrations are arranged in botanical order of foodplant, so it is not always easy to compare closely related moth species as they may be scattered across widely separated pages, and, of course, many species don't feed on just a single foodplant, or will occasionally be found on the "wrong" plant. The book covers over 500 species, and probably includes all the reasonably common British species. At just under £10 this is a far better buy than the Observer's Book.

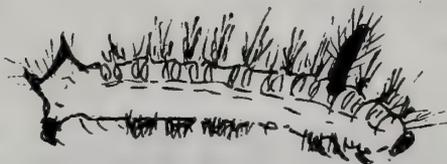
Has a pair of horns at the head end

NYMPHALIDAE
(Purple Emperor)



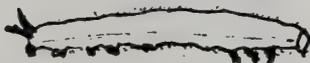
Has a 'tall' hump on segment 4

NOCTUIDAE
(Grey & Dark Dagger)



Has a pair of points at the tail end

SATYRIDAE



Odd shape with two or more large protuberances

NOTODONTIDAE
(Lobster, Pebble Prominent)



No pronounced oddities of bodily shape

3

3. Covered in spines

NYMPHALIDAE



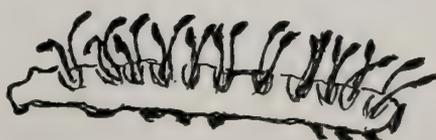
Segments 4-7 each bearing a thick shaving brush-like tuft of hairs

LYMANTRIIDAE
(Tussock & Vapourers)



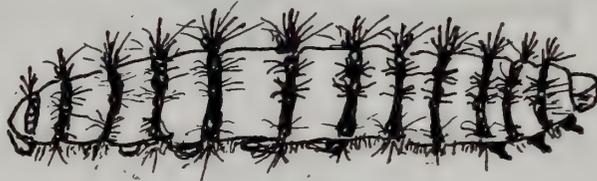
A pair of large paddle-shaped hairs on each segment

NOCTUIDAE
(Alder Moth)

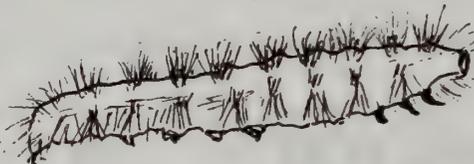


- Very hairy - hairs arising from distinct warts 4
- Quite hairy - hairs not arising from warts 5
- Short sparsely haired or not hairy at all 6

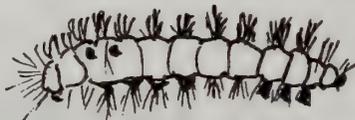
- 4. Relatively short hairs arising from warts in a straight line round the centre of each segment SATURNIIDAE (Emperor Moth)



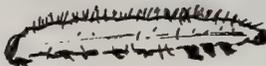
- Hair bearing warts in a staggered line or clumped arrangement. Usually dull coloured. ARCTIIDAE (Tigers, Ermines, Footmen)



- Caterpillars with orange or red markings, often with noticeable raised glands on segs 8 and 9 LYMANTRIIDAE (Yellow tail, Brown tail etc.)



- 5. Densely covered with short hairs, often with small raised bases. Feeding on CRUCIFERAE PIERIDAE

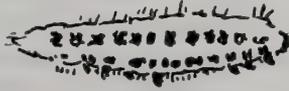


- Medium to large caterpillars, long dense hairs on body and head. May be brightly marked LASIOCALPIDAE (Eggars, Lackey, Fox etc.)



Short, stout caterpillars tapering at both ends. Long, soft hairs arising from tiny warts.

ZYGAENIDAE
(Burnets, Foresters).



Others

Mainly NOCTUIDAE

- 6. Small, sluglike, short, stout often humped in centre. Covered with short, fine hairs

LYCAENIDAE
(Blues, Coppers, Hairstreaks)



Small caterpillars with large heads and constricted necks. Covered with short, fine hairs.

HESPERIIDAE

Others

Mainly NOCTUIDAE



The author acknowledges that sections 4 - 6 of the key are rather weak, and would appreciate any suggestions for improvement. Apart from the NOCTUIDAE which are extremely variable the main problem is one of actually describing the differences between the families - they are quite easy to tell apart with a little experience. The key has deliberately omitted some of the smaller families, stem miners, root feeders, and all the micros.

* * * * *

The Recorder's Report for Botany 1987

B.M.Newman

The nomenclature and order used in the report this year are those of the "Flora of the British Isles" by Clapham, Tutin & Moore, 1987. An alien taxon is indicated by an asterisk (*). The English names are from "English Names of Wild Flowers" by Dony, Jury & Perring, second edition 1986, the recommended list of the Botanical Society of the British Isles.

The Recorder thanks members for the many records of plants found within a twenty mile radius of Reading, some of them with a note of the numbers seen and the habitat, which adds to the interest. All records received are kept for reference and a selection is listed below.

List of Members' Records for 1987

OPHIOGLOSSACEAE

Ophioglossum vulgatum L. Adder's-tongue
In grassland, Whiteknights Park, Reading. (HJMB).

ADIANTACEAE

*Pteris cretica L.
Surviving as an escape at Reading University, London Road. (HJMB).

CUPRESSACEAE

Juniperus communis L. Juniper
One tree surviving on Watlington Hill, 18.10.87; two in Peppard
Common chalkpit now nearly smothered by more aggressive species (HHC);
Aston Upthorpe, 30.5.87 (AB).

RANUNCULACEAE

*Eranthis hyemalis (L.) Salisb. Winter Aconite
Benham Park, near Newbury, 2.87 (R & CG).

*Consolida ambigua (L.) P.W.Ball & Heywood Larkspur
A weed in Wallingford church entrance (HJMB).

Ranunculus lingua L. Greater Spearwort
Brimpton Pit, a recent arrival (HJMB); Carbins Wood near Woolhampton,
17.5.87; Ron Ward meadow, Tadley, 14.6.87 (AB).

Thalictrum flavum L. Common Meadow-rue
Shiplake College 12.7.87 (R & CG).

NYMPHAEACEAE

*Nymphaea odorata Ait.
A pale yellow-flowered waterlily established in Trilakes pits, Sandhurst
(HJMB).

CRUCIFERAE

Iberis amara L. Wild Candytuft
Many plants in short grass on Watlington Hill, 18.10.87 (HHC); Warburg
Reserve, Bix, 4.7.87 (AB).

Cochlearia danica L. Danish Scurvygrass
Established along several kilometres of road near Rapley (HJMB).
An unusual record for Berkshire, this plant is usually found by the sea.
It is said to have been eaten by sailors to prevent scurvy.

*Bunias erucago L. Southern Warty-cabbage
Established on roadside near Winchbottom, Bucks (HJMB).

Cardamine amara L. Large Bitter-cress
Remenham, Berks, 29.4.87 (KMH).

Erysimum cheiranthoides L. Treacle Mustard
Binfield Heath, Oxon. 31.10.87 (KMH).

Sisymbrium officinale (L.) Scop. Hedge Mustard
Wallingford, Berks. 31.5.87 (KMH); Brimpton 25.4.87; Sulham 19.7.87;
by the canal between Burghfield Bridge and Moatlands Pit; Savacentre/
Pincent Lane 26.7.87 (AB).

VIOLACEAE

Viola arvensis Murray Field Pansy
Remenham, Berks. 29.4.87 (KMH); Brimpton 5.4.87; Remenham 2.5.87; wood
near Park Farm, Coldash 9.5.87; Sulham 10.5.87; Savacentre/Pincent Lane
26.7.87 (AB).

HYPERICACEAE

Hypericum pulchrum L. Slender St John's-wort
Fissen Wood, near Shepherd's Green, 4.7.87; New Copse, near Sonning
Common, beside logging track, 27.7.87; Flowercroft Wood, near Sonning
Common, 31.8.87 (HHC).

Hypericum hirsutum L. Hairy St John's-wort
Fissen Wood, near Shepherd's Green, 4.7.87 (HHC).

CARYOPHYLLACEAE

*Agrostemma githago L. Corncockle
Planted on soil heaps in Whiteknights Park, with Chrysanthemum segetum
and Centaurea cyanus (HJMB).

Sagina procumbens L. Procumbent Pearlwort
New Copse, near Sonning Common, beside logging track (HHC); wood near
Park Farm, Coldash (AB).

Sagina subulata (Swartz) C. Presl Heath Pearlwort
In wet heathland, Broadmoor Bottom (HJMB).

*Arenaria balearica L. Mossy Sandwort
Plentiful in conifer plantation, Benham Park near Newbury 6.87 (R & CG).

Spergularia rubra (L.) J & C Presl Sand Spurrey
Benham Park, near Newbury 6.87 (R & CG); wood near Park Farm, Coldash,
9.5.87 (AB).

GERANIACEAE

Geranium pratense L. Meadow Crane's-bill
North bank of Thames just downstream of Sonning Bridge 7.87 (R & CG).
Savacentre/Pincent Lane 26.7.87 (AB).

BALSAMINACEAE

*Impatiens glandulifera Royle Indian Balsam
Abundant at Sedgemoor Spring, Sonning Common (HHC); Old Hill, Aldermaston
27.5.87 (AB).

LEGUMINOSAE

*Laburnum anagyroides Medicus Laburnum
By the A4, Aldermaston, Berks. 17.5.87 (KEN).

Ulex minor Roth Dwarf Gorse
L4 roadside bank, west of Greathouse Wood, near Bradfield (HJMB).

*Dorycnium rectum (L.) Ser.

A planted shrublet near St Patrick's stream (HJMB).

*Coronilla varia L.

Crown Vetch

Near the Grand Union Canal, Slough (HJMB).

ROSACEAE

Potentilla anglica Laicharding

Trailing Tormentil

Benham Park, near Newbury 20.8.87 (R & CG).

*Alchemilla mollis (Buser) Rothm.

A garden throw-out on roadside near Elmore Park Wood, Woodcote, Oxon. (HJ.B).

Sanguisorba officinalis L.

Great Burnet

In uncut grassland near the Blackwater, south-east of Sandhurst (HJ.B); canal between Burghfield Bridge and Moatlands Pit 25.7.87 (AB).

Rosa tormentosa Sm.

Harsh Downy-rose

Bockmer End, Bucks. 30.6.87 (RKH).

*Prunus laurocerasus L.

Cherry Laurel

Remenham, Berks. 27.4.87 (RKH).

*Cydonia oblonga Miller

Quince

Four ancient trees in abandoned orchard near Padworth church (HJ.B).

SAXIFRAGACEAE

Saxifraga granulata L.

Meadow Saxifrage

In Brimpton churchyard; by the M4 near Frilsham (HJ.B); Remenham, 2.5.87 (AB).

Chrysosplenium oppositifolium L.

Opposite-leaved Golden-saxifrage

In alder-carr, Benham Park, near Newbury 5.87; Maiden Erleigh Woods, 11.87 (R & CG).

DROSERACEAE

Drosera rotundifolia L.

Round-leaved Sundew

Spreading on wet heath near Caesar's Camp (HJ.B).

ONAGRACEAE

Epilobium parviflorum Schreber

Hoary Willowherb

New Copse, near Sonning Common, beside logging track 27.7.87 (HHC).

Epilobium roseum Schreber

Pale Willowherb

By stream in Greathouse Wood, near Bradfield, uncommon in Berks (HJ.B). New Copse, near Sonning Common, beside logging track 27.8.87 (FHC).

*Epilobium ciliatum Rafin.

American Willowherb

New Copse, near Sonning Common, beside logging track 27.7.87 (HHC).

LORANTHACEAE

Viscum album L.

Mistletoe

Cliveden 6.87 (R & CG).

UMBELLIFERAE

*Myrrhis odorata (L.) Scop

Sweet Cicely

Pissen Wood, near Shepherd's Green, cut down but surviving 4.8.87 (HHC).

*Smyrniolus alutrum L.

Alexanders

Still by Southcote Farm Lane, despite suburban building work (HJ.B).

Sison amomum L.

Stone Parsley

Radstock Lane, Earley 18.7.87 (R & CG).

*Heracleum mantegazzianum Sommier & Levier Giant Hogweed
On the verge of Swallowfield by-pass, Three-mile Cross. The flowering
stem was cut down at an early stage, the plant was later cut down to
ground level (JA).

EUPHORBIACEAE

*Euphorbia lathyris L. Caper Spurge
In ditch along Radstock Lane, Earley 18.7.87 (R & CG).

CANNABACEAE

*Cannabis sativa L. Hemp
Medmenham. Probably from birdseed left by anglers (JAN).

BETULACEAE

*Alnus incana (L.) Moench Grey Alder
Planted in quantity in a wood south of Padworth College (HJMB).

FAGACEAE

*Nothofagus procera Oersted Southern Beech
Planted for forestry at Monkton Wood, Bucks. (HJMB).

SALICACEAE

*Salix daphnoides Vill.
Planted by new road through Broadmoor Bottom Reserve (HJMB).

ERICACEAE

Vaccinium myrtillus L. Bilberry
Ownham plantation, south of Boxford (HJMB); wood near Park Farm, Coldash,
9.5.87; Fence Wood, Hermitage 16.5.87; Carbins Wood, near Woolhampton,
17.5.87 (AB).

Calluna vulgaris (L.) Hull Heather
Scarce, Nipper's Grove, Oxon (HJMB); wood near Park Farm, Coldash 9.5.87;
Carbins Wood, near Woolhampton 17.5.87; Baynes Reserve 18.7.87; Tadley
Common 23.9.87 (AB).

Erica cinerea L. Bell Heather
Scarce, Nipper's Grove, Oxon. May be increasing due to acid rain (HJMB);
Tadley Common 8.7.87; Baynes Reserve 18.7.87 (AB).

TRIFOLIACEAE

*Cyclamen hederifolium Aiton Cyclamen
Long established in Midgham Park (HJMB).

Lysimachia vulgaris L. Yellow Loosestrife
Near Whiteknights Lake 25.7.87 (R & CG); Ron Ward meadow, Tadley 14.6.87 (AB).

*Lysimachia punctata L. Dotted Loosestrife
Increasing as a garden escape near Moor Copse (HJMB).

APOCYNACEAE

Vinca minor L. Lesser Periwinkle
Remenham, Berks 26.3.87 (KMH).

GENTIANACEAE

Gentianella amarella (L.) Börner Autumn Gentian
Lany in short grass on Watlington Hill 18.10.87 (HHC); Turville Hill
20.6.87 (AB).

BORAGINACEAE

- *Lappula squarrosa (Retz) Dumort. Bur Forget-me-not
Redhatch Drive. Identified by Dr. H. Bowen (N & MD).
- Anchusa arvensis (L.) Bieb. Bugloss
On waste ground near the railway station, Reading, 30.10.87 (KMH).
- Lithospermum officinale L. Common Gromwell
Pissen Wood, near Shepherd's Green, 4.7.87 (HHC).

SOLANACEAE

- Atropa belladonna L. Deadly Nightshade
Watlington Hill, under trees, (HHC); Aston Upthorpe 30.5.87 (AB).
- *Browallia speciosa Hooker
Introduced into the Botanical Garden, Whiteknights Park in 1979 and
maintaining itself as a weed ever since (HJMB).

SCROPHULARIACEAE

- *Verbascum blattaria L. Moth Mullein
Wasing, 30.8.87 (N & MD).
- *Linaria purpurea (L.) Purple Toadflax
In the Wilderness, Whiteknights Park, 17.7.87 (R & CG).
- *Linaria repens (L.) Pale Toadflax
Many in short grass on Watlington Hill 18.10.87 (HHC).
- Linaria vulgaris Miller Common Toadflax
Form with 3-spurred flowers near Reading railway station (HJMB).
- Linaria x sepium Allman (L. repens x vulgaris)
In disturbed soil near Reading railway station, with parents (HJMB).
- Chaenorhinum minus (L.) Small Toadflax
New Copse, near Sonning Common, beside logging track 27.7.87 (HHC);
Turville Hill, 20.6.87 (AB).
- Rickxia spuria (L.) Dumort. Round-leaved Fluellen
Weed by new roadside, Crowmarsh by-pass (HJMB).
- Rickxia elatine (L.) Dumort. Sharp-leaved Fluellen
Hook Common, Mants NHS walk 12.9.87 (KMH).
- *Cymbalaria muralis Gaertner, Meyer & Scherb. Ivy-leaved Toadflax
New Copse, near Sonning Common beside logging track, 27.7.87 (HHC).
Remenham, Berks, 2.5.87 (AB)
- Scrophularia auriculata L. Water Figwort
Playhatch chalkpit, several plants on steep well-drained bank of chalk
rubble, an unusual habitat, 8.12.87 (HJMB).
- *Scrophularia vernalis L. Yellow Figwort
In a hedge, the Slade, Bucklebury (HJMB).
- Veronica anagallis-aquatica L. Blue Water-speedwell
Benham Park, near Newbury, 27.7.87 (R & CG).
- Veronica montana L. Wood Speedwell
Hoor Copse, Tidmarsh, Berks. NHS walk 17.5.87 (KMH).

VERBENACEAE

- Verbena officinalis L. Vervain
Many plants in short grass on Watlington Hill, 13.10.87 (HHC).

LABIATAE

- Calamintha sylvatica Bromf. ssp ascendens (Jordan) P.W. Ball. Common Calamint
Traveller's Shaw, near Nuffield, a single plant 19.7.87 (HHC).
- *Melissa officinalis L. Balm
Withy Copse, near Sonning Common, a single plant 1985-87 (HHC).
- Stachys arvensis (L.) L. Field Woundwort
A scarce weed near Greathouse Wood, Bradfield (HJMB).
- Lamium hybridum Vill. Cut-leaved Dead-nettle
A weed at Pingewood pits (HJMB).

PLANTAGINACEAE

- Plantago coronopus L. Buck's-horn Plantain
On a roadside near Rapley (HJMB).

CAMPANULACEAE

- Campanula trachelium L. Nettle-leaved Bellflower
Traveller's Shaw, near Nuffield, many plants 19.7.87 (HHC); Warburg Reserve, Bix 4.7.87 (AB).
- Campanula glomerata L. Clustered Bellflower
Many in short grass on Watlington Hill 18.10.87 (HHC).
- Campanula rotundifolia L. Harebell
Many in short grass on Watlington Hill 18.10.87 (HHC).
- Legousia hybrida (L.) Delarbre Venus's-looking-glass
Weed by new roadside, Crowmarsh by-pass (HJMB); Swyncombe Downs, Oxon, NHS walk 13.7.87 (KEH).

RUBIACEAE

- Cruciata laevipes Opiz Crosswort
Traveller's Shaw, near Nuffield, many plants 19.7.87 (HHC).

CAPRIFOLIACEAE

- Viburnum opulus L. Guelder-rose
Traveller's Shaw, near Nuffield 19.7.87 (HHC).

ADOXACEAE

- Adoxa moschatellina L. Moschatel
Benham Park, near Newbury 4.87 (R & CG).

DIPSACACEAE

- Dipsacus fullonum L. Teasel
On roadside verge Lower Earley (BMN).

COMPOSITAE

- *Helianthus petiolaris Nuttall
On the M4 central reservation south-east of Reading (HJMB).
- Bidens tripartita L. Trifid Bur-marigold
Several plants by Maiden Erleigh lake (BMN).
- *Galinsoga ciliata (Rafin.) S.F. Blake Shaggy Soldier
A garden weed in Henley, Oxon., 25.10.87 (KEH).
- *Guizotia abyssinica (L.fil.) Cass.
In Whiteknights Park, probably from birdseed (HJMB).
- Filago minima (Sm.) Pers. Small Cudweed
On old ashbed, Wasing pits (HJMB).

Achillea ptarmica L.

Sneezewort

Whiteknights Park 17.7.87 (R & CG).

Onopordum acanthium L.

Cotton Thistle

Roadside near Cookley Green Oxon.; Whiteknights Park, Reading (HJMB).

Cichorium intybus L.

Chicory

About 100,000 plants in the corner of a grass field on Chalkhouse Farm, not seen in previous years. (CTM says "The plant is sometimes included in seed mixtures on shallow chalky soils in England, both because cattle readily eat its leaves and for the effect of its deep tap-root in breaking up the subsoil.") The soil on Chalkhouse Farm is gravel, but the chalk lies close beneath the surface (HHC).

*Hieracium brunneocroceum Pugsley

In lawn turf, Henley, Oxon. (HJMB); Copperdale Close, Earley 31.8.87, on rough grass near garages, mown the next day (R & CG).

HYDROCHARITACEAE

*Elodea nuttallii (Planchon) St John

Nuttall's Waterweed

Dominant in gravel pits near Radley, should be looked for in the Reading area (HJMB).

LILIACEAE

Polygonatum multiflorum (L.) All.

Solomon's-seal

Plentiful in conifer plantation, Benham Park, near Newbury 6.87 (R & CG).

JUNCACEAE

Juncus effusus L.

Soft Rush

New Copse near Sonning Common, beside logging track 27.7.87 (HHC).

Juncus conglomeratus L.

Compact Rush

New Copse near Sonning Common, beside logging track 27.7.87 (HHC); Ashford Hill 14.6.87 (AB).

Juncus bufonius L.

Toad Rush

New Copse near Sonning Common, beside logging track 27.7.87 (HHC).

Luzula sylvatica (Hudson) Gaudin

Great Wood-rush

Frilsham Common Woods; Grims Ditch, Monkton Wood, Bucks. (HJMB).

Luzula forsteri (Sm.) DC.

Southern Wood-rush

Pissen Wood near Shepherd's Green 4.7.87 (HHC).

ORCHIDACEAE

Epipactis helleborine (L.) Crantz

Broad-leaved Helleborine

Several plants in Midgham Park; one plant near Padworth College (HJMB).

Dactylorhiza majalis ssp. praetermissa (Druce) D. Horesby Moore & Soó

Southern Marsh Orchid

Abundant in sallow carr, Brimpton pit (HJMB); Ashford Hill 14.6.87 (AB).

Dactylorhiza fuchsii x praetermissa (Druce) Soó

Scarce in Midgham Park (HJMB).

CYPERACEAE

Scirpus sylvaticus L.

Wood Club-rush

Wet meadow, Woolhampton; edge of gravel pits, Trilakes, Sandhurst (HJMB).

Carex muricata L.

Prickly Sedge

Sole Common, on heathy tracks (HJMB).

Carex ovalis Good.

Oval Sedge

In old pond sites near Brimpton Common (HJMB); Ron Ward meadow, Tadley 14.6.87; Ashford Hill 14.6.87 (AB).

Carex laevigata Sm. Smooth-stalked Sedge
Scarce in alder gully, Inwood Copse (HJMB).

GRAMINEAE

Festuca arundinacea Schreber x F. gigantea (L.) Vill.
A large clump at Little Wittenham. This is very rare in Britain (HJMB).

Puccinellia distans (Jacq.) Parl. Reflexed Saltmarsh-grass
Spreading along the edge of the M4 and at roundabouts, as at St Anns and
near junction 13 (HJMB).

Briza media L. Quaking-grass
Buttlers Hangings, a form lacking purple anthocyanin (HJMB).

Bromus benekenii (Lange) Trimen Lesser Hairy-brome
In light shade at Turville Hill, a rare and overlooked plant (HJMB).

*Bromus carinatus Hooker & Arnott California Brome
Established in roadside near Blackmoor Wood, Watlington, Oxon. (HJMB).

*Hordeum jubatum L. Foxtail Barley
A North American species spreading along the M4 as at junction 11 south
of Reading, and near Greathouse Wood. It lines highways in central
USA too (HJMB).

Trisetum flavescens (L.) Beauv. Yellow Oat-grass
Bockmer End, Bucks. 30.6.87 (KMH).

*Panicum mileaceum L. Common Millet
Apparently planted as a crop with Sweet Corn (Zea mais) near Greathouse
Wood (HJMB).

*Echinochloa crus-galli (L.) Beauv. Cockspur
In a garden on the outskirts of Henley, possibly of wild birdseed
origin 25.9.87 (KMH).

Contributors:-

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The Recorder's Report for Entomology 1987

B.R. Baker

The order and nomenclature used in this Report are those given in Elliott and Humpesch, Ephemeroptera, 1983; Kloet and Hincks, A Check List of British Insects, Part 1; Small Orders and Hemiptera, 1964; Part 2: Lepidoptera, 1972; Part 3: Coleoptera, 1977; Part 4: Hymenoptera, 1978 and Part 5: Diptera, 1975.

EPHEMEROPTERA

Mayflies

Ephemera danica Mull.

River Pang, Moor Copse Nature Reserve, 4.6.87, 2.7.87 (P & JA).

E.lineata Eaton

Warburg Nature Reserve, 1 female, 4.7.87 (P & JA); Caversham, 1 male, 1 female to mercury vapour light-trap, 13.7.87 (BRB).

Habrophlebia fusca (Curt.)

River Pang, Moor Copse Nature Reserve, 2.7.87 (P & JA).

Ephemerella ignita (Poda)

Warburg Nature Reserve, about a dozen females, many carrying a ball of eggs, 4.7.87; Greenham Common, 2 females, 18.7.87 (P & JA); River Pang, Moor Copse Nature Reserve, (P & JA); 4,19.6.87, 2.7.87, 6.10.87 (P & JA).

Caenis horaria (L.)

Warburg Nature Reserve, 4.7.87 (P & JA).

C.luctuosa (Burm.)

Dinton Pastures, 14.6.87 (P & JA).

Baetis rhodani (Pictet)

River Pang, Moor Copse Nature Reserve, 6.5.87, 4.6.87, 21.8.87, 6.10.87. (P&JA).

B. scambus Eaton

River Pang, Moor Copse Nature Reserve, 19.6.87 (P & JA).

B.vernus Curt.

River Pang, Moor Copse Nature Reserve, 2.7.87, 6.10.87 (P & JA).

Centroptilum luteolum (Mull.)

River Pang, Moor Copse Nature Reserve, 6.5.87, 4,19.6.87, 2.7.87, 21.8.87, 6.10.87 (P & JA).

C. pennulatum Eaton

River Pang, Moor Copse Nature Reserve, 19.6.87, 2.7.87 (P & JA).

Rhithrogena semicolorata (Curt.)

River Pang, Moor Copse Nature Reserve, 6.5.87 (P & JA).

ODONATA

Dragonflies

Pyrrhosoma nymphula (Sulz.)

Englemere Pond, 30.5.87 (N & MD).

Ischnura elegans (van der Lind.)

Englemere Pond, 30.5.87. (N & MD).

Coenagrion puella (L.)

Englemere Pond, 30.5.87 (N & MD).

Lestes sponsa (Hanse.)

Wasing Gravel Pits, 30.8.87 (N & MD).

Aeshma grandis (L.)

Wasing Gravel Pits, 30.8.87 (N & MD).

A. juncea (L.)

Wasing Gravel Pits, 30.8.87 (N & MD).

Cordulia linaenea Fraser = aenea (L.)
Englemere Pond, 30.5.87 (N & MD).

Libellula quadrimaculata L.
Englemere Pond, 30.5.87; Wasing Gravel Pits, 30.8.87 (N & MD).

Sympetrum scoticum (Don.)
Wasing Gravel Pits, 30.8.87 (N & MD).

S. striolatum (Charp.)
Wasing Gravel Pits, 30.8.87 (N & MD).

HEMIPTERA Plant-bugs, Water-bugs, Leaf-hoppers, Aphids, Scale-insects

Dicyphus stachydis Reuter
Baynes Nature Reserve, 8.6.87 (HHC).

Calocoris quadripunctatus (Villers)
Bird Wood, Sonning Common, 2.6.87 (HHC).

Evacanthus acuminatus (Fabr.)
Baynes Nature Reserve, 13.7.87, last recorded at Wytham and Cothill
c. 1920 (HHC).

Psylla melanoneura Förster
Kennylands, 24.3.87 (HHC)

LEPIDOPTERA Butterflies and Moths

Apoda limacodes (Hufn.) The Festoon
Burghclere, 9.7.87 (GGE-F).

Thymelicus lineola (Cchs.) Essex Skipper
Near Swallowfield Bypass 1.8.87 (BTP); common on the roadsides there,
8.8.87 (BRB).

This butterfly continues to spread westwards and it would be worthwhile
looking for it in rough grassy roadside sites between Theale and Newbury.

Hesperia comma (L.) Silver-spotted Skipper
Christmas Common, common there, 16.8.87 (HJMB).

Colias croceus (Geoffr.) Clouded Yellow
Bramshill, 1.5.8.87 (BTP); Brimpton Pit, 1, 31.8.87 (HJMB).

Anthocharis cardamines (L.) Orange-tip
Warburg Nature Reserve, 4.7.87 (HJMB, HGB). A very late date for this
springtime butterfly and probably a reflection of the unseasonable weather
conditions in June.

Celastrina argiolus (L.) Holly Blue
Reading, 27.4.87 (HJMB); 25 Hatlock Road, Caversham, 5.4.87, 12.7.87,
14.8.87 (HGB).

Vanessa atalanta (L.) Red Admiral
Inkpen Common, 24.5.87, Owlsmoor, 20.9.87 (HJMB); Ashford Hill, 14.11.87 (DAY);
25 Hatlock Road, Caversham, 5.7.87, 16, 23.8.87, 20.9.87 and continuing to
be seen in small numbers on ivy blossoms and fallen fruit until 6.11.87 (HGB).

Cynthia cardui (L.) Painted Lady
Reading, 31.8.87 (HJMB); Burghclere, (GGE-F).

Nymphalis polychloros (L.) Large Tortoiseshell
Wittenham Wood, at sallow bloom, 17.4.87 - probably this species but
difficult to observe on a very tall bush (HJMB). Last seen in the County in
1948 but the butterfly is renowned for reappearing after many years of absence
and springtime always offered the best chance of seeing one, invariably at
sallow after hibernation (BRB).

Argynnis aglaja (L.) Dark Green Fritillary
Warburg Nature Reserve, several on 4.7.87 (HJMB, BRB).

- Lasiommata megera (L.) The Wall
Wasing Gravel Pits, 1 male, 30.8.87, the first seen for 2 years (N & MD).
Following the note in last year's Report several members kept a careful
watch for this butterfly but the Wasing specimen was the only one seen.
- Trichiura crataegi (L.) Pale Eggar
Aldermaston, 9.9.87 (AB, PS).
- Gastropacha quercifolia (L.) The Lappet
Aldermaston, 9.7.87 (AB, PS).
- Tethea or (D & S) Poplar Lutestring
Burghclere, 1, 1.6.87, 6, 5.7 to 15.7.87 (GGE-F); Warburg Nature Reserve,
4.7.87 (BRB); Ashford Hill, 26.6.87 (DAY).
- Idaea sylvestraria (Hb.) Dotted Border Wave
Greenham Common 18.7.87 (N.H, BRB); Bowdown Wood Nature Reserve, 11.7.87
(GGE-F, RJH).
- Rhodometra sacraria (L.) The Vestal
Burghclere, 2 on 21.8.87 (GGE-F); Caversham, 1 on 21.8.87 (BRB).
- Lampropteryx otregiata (Hetc.) Devon Carpet
Burghclere, 4 from 28.8.87 to 4.9.87 (GGE-F).
- Chloroclysta siterata (Hufn.) Red-green carpet
Burghclere, 17.4.87, 4.5.87, 19, 23.9.87, 1,12,15,16.10.87 (GGE-F).
- Triphosa dubitata (L.) The Tissue
Aldermaston Park, 27.4.87 (GGE-F, PS).
- Perizoma bifaciata (Haw.) Barred Rivulet
Aldermaston, 11.8.87 (AB, PS).
- Eupithecia irriguata (Hb.) Marbled Pug
Burghclere, 51 recorded from 26.4.87 to 29.5.87 (GGE-F).
- E. indigata (Hb.) Ochreous Pug
Burghclere, 25.5.87, 20.6.87 (GGE-F).
- Semiothisa alternaria (Hb.) Sharp-angled Peacock
Burghclere, 28,29.5.87, 5.7.87, 20.8.87 (GGE-F).
- Angerona prunaria (L.) The Orange Loth
Ashford Hill, common at dusk and at mercury vapour light, 26.6.87.
25 recorded with 2 form corylaria (DAY).
- Boarmia roboraria (D. & S.) Great Oak Beauty
Wellington Country Park, 1.7.87 (DAY).
- Dyscia fagaria (Thunb.) Grey Scalloped Bar
Wellington Country Park, 6.7.87 (DAY).
- Ptilodontella cucullina (D. & S.) Maple Prominent
Emmer Green, 24.6.87 (JHFN); Warburg Nature Reserve, 4.7.87 (BRB);
Bowdown Wood Nature Reserve, 11.7.87 (GGE-F, RJH).
- Clostera pigra (Hufn.) Small Chocolate-tip
Aldermaston, 16.8.87 (AB, PS).
- Leucoma salicis (L.) White Satin Loth
Emmer Green, 30.6.87 (JHFN); Burghclere, 2.7.87, (GGE-F); Aldermaston,
17 recorded during the season (AB, PS).
- Rhyacia simulans (Hufn.) Dotted Rustic
Emmer Green, 16.8.87 (JHFN).
- Cucullia chamomillae (D. & S.) Chamomile Shark
Aldermaston, 17.5.87 (AB, PS).
- Lithophane socia (Hufn.) Pale Finion
Burghclere, 3.4.87, 3.10.87 (GGE-F); Aldermaston, 8.11.87 (AB, PS)

- L.ornitopus (Hufn.) Grey Shoulder-knot
Padworth, 1 female, 28.4.87 (PS).
- Craniophora ligustri (D. & S.) The Coronet
Burghclere, 28.6.87 (GGE-F); Warburg Nature Reserve, 4.7.87 (BRB).
- Normo maura (L.) The Old Lady
Aldermaston, 11.8.87 (AB, PS).
- Ipimorpha retusa (L.) Double Kidney
Burghclere, 17, 20.8.87 (GGE-F).
- Cosmia trapezina (L.) The Dun-bar
Burghclere, 1 form nigra Tutt, 1.8.87, 1 form badiofasciata Teich, 7.8.87 (GGE-F).
Both of these forms quoted are seldom recorded.
- Apamea sublustris (Esp.) Reddish Light Arches
Emmer Green, 30.6.87 (JHFN).
- Lygephila pastinum (Treit.) The Blackneck
Emmer Green, 5.7.87 (JHFN); Burghfield Common, 10.7.87 (DAY); Burghclere, 13.7.87 (GGE-F).
- Trisateles emortualis (D. & S.) The Olive Crescent
Caversham, 1 female at mercury vapour light, 6.7.87 (BRB). The beechwoods beyond Stonor were thought to be the main centre of distribution for emortualis in Britain, but this record now raises the possibility of a breeding ground closer to Reading.

COLEOPTERA Beetles

MHC has again kindly selected the following records from the detailed list supplied by Mr. T.D. Harrison of Leighton Park - the complete list is available from the Museum's Biological Records Index.

- Tachys parvulus Dejean
Leighton Park, 9 to 11.4.85. Three specimens in crevices of an old red brick wall. Identification confirmed by Dr. L. Luff (in 1987). This is the second modern record for the U.K.; first record for Berkshire.
- Halipilus flavicollis Sturm
Near Pingewood, 16.9.87, amongst submerged water plants in a water-filled gravel pit (TDH).
- H. immaculatus Gerhardt
Near Pingewood, 16.9.87, amongst submerged water plants in a water-filled gravel pit (TDH).
- H. obliquus (Fabr.)
Near Pingewood, 16.9.87, amongst submerged water plants in a water-filled gravel pit (TDH).
- Cercyon ustulatus (Preyssler)
Leighton Park, 28.10.86, on the bank of a pond (TDH).
- Teranus bimaculatus (L.)
Near Pingewood, 16.9.87, in rotting straw (TDH).
- Ptomaphagus subvillosus (Goeze)
Leighton Park, 20.4.87, in pit-fall trap in garden lawn (TDH).
- Catops fuliginosus Erichson
Leighton Park, 5.11.86, in pit-fall trap in compost heap in a garden (TDH).
- Micropeplus fulvus Erichson
Leighton Park, 8.10.86, in a compost heap (TDH).
- Dropephylla ioptera (Stephens)
Whiteknights, 15.10.86, under bark of felled tree (TDH).

Anotylus tetracarlinatus (Block)

Leighton Park, 13.7.87, attracted to mercury vapour lamp in garden (TDH).

Stenus clavicornis (Scopoli)

Near Streatley, 29.10.86. At the base of grass plants on the grass verge of a track in area of arable farmland (TDH).

Lathrobium fovulum Stephens

Near Shinfield Grange, 23.12.86, under bark of rotten fallen willows. Identification confirmed by P.M. Hammond (TDH).

L. fulvipenne v. letzneri Gerhardt

Near Shinfield Grange, 23.12.86. Under bark of rotting fallen willow (TDH)

L. geminum Kraatz

Near Arborfield, 23.12.86. Under bark of rotten fallen tree (TDH).

Lithocharis nigriceps Kraatz

Leighton Park, 8.4.87, in compost heap (TDH).

Leptacinus intermedius Donisthorpe

Leighton Park, 5.4.87, in compost heap (TDH).

L. pusillus (Stephens)

Leighton Park, 5.4.87, in compost heap (TDH).

Erichsonius cinerascens (Gravenhorst)

Heckfield Heath, 31.3.87, in sphagnum moss on bank of a pond (TDH).

Philonthus fimetarius (Gravenhorst)

Leighton Park, 8.10.86, in compost heap (TDH).

P. rectangulus Sharp

Near Pingewood, 16.9.87, in rotting straw (TDH).

P. sordidus (Gravenhorst)

Leighton Park, 5.4.87, in compost heap (TDH).

Staphylinus ater Gravenhorst

Leighton Park, 10.7.87, under piece of wood in a garden (TDH).

S. brunnipes Fabr.

Near Arborfield, 23.12.86, under bark of rotting fallen tree. Identified by P.M. Hammond (D.Lus.Nat.Hist.) (TDH).

S. winkleri Bernhauer

Near Pingewood, 16.9.87, in a mound of loose gravel beside water-filled gravel pit (TDH).

Heterothops dissimilis (Gravenhorst)

Leighton Park, 5.4.87, in compost heap (TDH).

Quedius curtipennis Bernhauer

Near Pingewood, 16.9.87, under a stone on bank of water-filled gravel pit (TDH).

Sepedophilus testaceus (Fabr.)

Near Burghfield Common, 25.3.87, under bark of rotting conifer tree stump (TDH).

Tachinus laticollis Gravenhorst

Leighton Park, 5.7.87, in pit-fall trap set up in corner of grass lawn beside a compost heap (TDH).

Zyras libatus (Paykull)

Leighton Park, 20.4.87, in pit-fall trap in ant-infested lawn (TDH).

Euplectus sanguineus Denny

Leighton Park, 8.10.86, in compost heap. Identified by P.M. Hammond (TDH).

Lacon cuerceus (Herbst)

Windsor Great Park, May 1987, bred from dead oak (JAC).

Cantharis lateralis L.

Whiteknights, 29.5.87, by sweeping meadow (TDH).

Scymnus auritus Thunberg

Leighton Park, 24.5.87, by sweeping stinging nettles (TDH).

Cis bilamellatus Wood

Leighton Park, 8.10.86, in compost heap (TDH).

Ennearthron cornutum (Gyllenhal)

Near Arborfield, 23.12.86, inside woody bracket fungus (TDH).

Anthicus formicarius (Goeze)

Leighton Park, 12.10.86, in compost heap (TDH).

Phyllotreta ochripes (Curtis)

Leighton Park, 24.5.87, by sweeping Alliaria petiolata (TDH).

Longitarsus ballotae (Marshall)

Houlsford Bottom, 29.10.86, on Ballota nigra. Identification confirmed by Dr. H.L.Cox (TDH).

Bytharria salicariae (Paykull)

Child Beale, near Lower Basildon, 25.5.87, resting on Epilobium sp. (TDH).

Epitrix pubescens (Koch) JDM

Near Arborfield, 1.7.87, on Solanum nigrum (TDH).

Apteropeda globosa (Illiger)

Baynes Nature Reserve, 8.6.87 (HMC).

Barynotus moerens (Fabr.)

Bowdown Wood Nature Reserve, 18.4.87 (per HMC).

Anoplus roboris Suffrian

Baynes Nature Reserve, 1986 (TDH).

Acalles roboris Curtis

Baynes Nature Reserve, 1986 (TDH).

Orthochaetes insignis (Aubé)

Leighton Park, 2.10.86, in pit-fall trap in an overgrown weedy vegetable patch in garden (TDH).

Rhynchaenus pilosus (Fabr.)

Leighton Park, 9.9.87, on washing on a line (TDH).

HYMENOPTERA

Sawflies, Ichneumons, Bees, Ants and Wasps

Neurotoma saltuum (L.)

Baynes Nature Reserve, 1984 (AH).

Strongylogaster xanthocera (Stephens)

Baynes Nature Reserve, 1983 (AH).

Scolioneura betuleti (Klug)

Baynes Nature Reserve, 1983 (AH).

Messa nana (Klug)

Baynes Nature Reserve, 8.6.87 (HMC).

Hemichroa australis (Lepeletier)

Baynes Nature Reserve, 1984 (AH).

Euura atra (Jurine)

Baynes Nature Reserve, 1983 (AH).

Nematus bergmanni Dahlbom

Ramsbury Drive, Earley, bred from Salix (BTP).

Tasius brunneus (Fabr.)

Clayfield Copse, Eamer Green, 16.4.87. A characteristic species of ancient woodland, in our area known hitherto only from Ascot (HMC).

Crossocerus walkeri (Shuckard)

Door Copse Nature Reserve, 18.4.87, cocoons in rotting oak and adults bred (BRB).

DIPTERA

True Flies

Thaumastoptera calceata Mik

Baynes Nature Reserve, 1987 (KP).

Molophilus pleuralis De Meijere

Baynes Nature Reserve, 13.7.87 (HHC).

Acricotopus lucens (Zett.)

82, Kennylands Road, Sonning Common, 10.2.87, from water butt (HHC).

Trichosia viatica (Winnertz)

Bird Wood, Sonning Common, 31.3.87 (HHC).

Lycoriella leucotricha Tuomikoski

Bird Wood, Sonning Common, 8.4.87 (HHC).

Bradysia brunnipes (Meigen)

Baynes Nature Reserve, 12.5.87 (HHC).

Scatopsiara cf. edwardsi Freeman

Old Town Hall cloakroom, 25.3.87 (HHC).

Reichertella geniculata (Zett.)

Birches Wood, Crowsley Forest, 2.10.79 (HHC); 2, College Road, Reading, 10.10.70 (EB).

Xylomyia marginata (Meigen)

Brimpton Mill, 1985 (DG).

Atherix ibis (Fabr.)

River Emborne near Crookham, aggregations of ovipositing females (AD).

Euthyneura myrtilli Macquart

Baynes Nature Reserve, 12.5.87 (HHC).

Dolichopus arbustorum Stannius

Baynes Nature Reserve, 13.7.87 (HHC).

Hercostomus germanus (Wiedmann)

Baynes Nature Reserve, 13.7.87 (HHC).

Hydrophorus litoreus Fallen

Sonning Common Sewage Works, 14.9.87 (HHC).

Pedetera abstrusa Thunberg

Bird Wood, Sonning Common, 27.5.87 (HHC).

P. tristis (Zett.)

Kennylands Laddock, Sonning Common, 19.5.87 (HHC).

Evihrissa vittata (Meigen)

Baynes Nature Reserve, 17.6.87 (HHC).

Legohylemyia profuga (Stein)

Bird Wood, Sonning Common, 15.6.87 (HHC).

Hydrophoria divisa (Meigen)

Sonning Common Sewage Works, 14.9.87 (HHC).

Egle brevicornis (Zett.)

Baynes Nature Reserve, 10.4.87 (HHC).

Fannia atra (Stein)

Baynes Nature Reserve, 8.6.87 (HHC).

Doenosia stigmatica Wood

ridge over Javersham Mill stream, 24.9.87 (HHC).

The Society's Entomological Evening, 4th July 1987

After a period of cool, rainy weather, summer really happened and 4th July must have been one of the hottest days of the year. Insects responded to the change and it was almost unsettling to see both orange-tips and dark green fritillaries on the wing at the same time. Alan Brickstock and Sheila Ward listed some 65 species of moths recorded at the sheets and the following half a dozen appear to be new to the Warburg Reserve List :- poplar lutestring, July highflyer, green pug, swallowtail moth, minor shoulder-knot and clouded-bordered brindle. Our best thanks are due to the Reserve Warden, Nigel Phillips, for making us so welcome at Bix - we shall have pleasure in sending him an up-dated Reserve Lepidoptera List.

Contributors:-

Dr.P & Dr.J. Andrews (P & JA), Mrs.H.G. Baker (HGB), Dr.H.J.M. Bowen (HJMB), Dr.A. Brickstock (AB), the late Dr.E. Burttt (EB), H.H. Carter (HHC), A. Driver (AD), N. & N. Diserens (N & ND), Lt. Col. G.G. Eastwick-Field (GGE-F), D. Gibbs (DG), N.E. Hall (NEH), A. Halstead (AH), T.D. Harrison (TDH), Dr. R.J. Hornby (RJH), J.H.F. Notton (JHEN), Prof. J.A. Owen (JAO), B.T. Parsons (BTP), K. Porter (KP), P. Silver (PS), Mrs. S. Ward (SW), D.A. Young (DAY). The Recorder thanks all those mentioned above for their contributions, also the Director of Reading Museum and Art Gallery for allowing us to incorporate any relevant records from the Museum's collections.

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ARACHNIDA Spiders, Harvestmen

Pardosa nigriceps (Thorell)
Baynes Nature Reserve, 1985 (SH).

Cicurina cicur (Fabr.)
Baynes Nature Reserve, 1985 (SH).

Amaurobius terrestris (Wider)
Baynes Nature Reserve, 1985 (SH).

Dicymbium nigrum (Blackwall)
St. Laurence's Churchyard, Reading, 2.4.87, pair in cop. (HHC).

Nemastoma bimaculatum (Fabr.)
Baynes Nature Reserve, 1985 (SH).

Legabunus diadema (Fabr.)
Baynes Nature Reserve, 1983 (CMP).

Platybunus triangularis (Herbst.)
Baynes Nature Reserve, 1983 (CMP).

CHILOPODA Centipedes

Haplophilus subterraneus (Shaw)
Baynes Nature Reserve, 1985 (SH).

Strigamia crassipes (C.L. Koch)
Baynes Nature Reserve, 1985 (SH).

Necrophloeophagus longicornis (Leach)
Baynes Nature Reserve, 1985 (SH).

Lithobius microps Meinert
Baynes Nature Reserve, 1985 (SH). (But note that Eason (1964) makes this a synonym of L. dubosqui Brolemann).

MYRIAPODA

Diplopodes

Brachydesmus superus Latzel
Baynes Nature Reserve, 1985 (SH).

Glomeris marginata (Villers)
Baynes Nature Reserve, 1985 (SH).

Proteroiulus fuscus (Am Stein)
Baynes Nature Reserve, 1985 (SH).

Tachypodoiulus niger (Leach)
Baynes Nature Reserve, 1985 (SH).

Contributors:-

S.F. Hopkin (SH); C.W. Plant (CMP).

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The Recorder's Report for Fungi 1987
Alan Brickstock

The 1987 season was a fluctuating one Mycologically, starting off very well, then going through a bad patch in a long dry spell, and finally having an excellent late flourish at the end of October and the beginning of November. The total number of species was 354, 69 more than last year, and these included a number of very good finds.

An outstanding one, on Judith Hack's foray at Hook End on October 3, was Pulveroboletus lignicola, the only Boletus species which grows on wood. Identification of this specimen was confirmed at Kew. There are very few British records for this fungus, with only one site where it is regularly found.

Another excellent find was Phylloporus (Boletus) rhodoxanthus, found on the Mycological Society foray at Virginia Water on October 17. This very rare species, which grows in Beech woods, has golden yellow pores, which become bright blood red.

The uncommon Melanophyllum (Lepiota) eyrei was another nice find. This species has blue-green gills and pale green spores, the latter being a very unusual feature.

What at first looked like some rather odd Amanita species in 'bud' form, at Sulham, proved on closer examination to be the very uncommon Lycoperdon mammiforme, a deep flesh-pink Puff Ball, with white cottony scales.

A single specimen of Rozites caperata, which is illustrated on the front cover of 'Hora', and said in Phillips to be 'virtually unknown in Southern England', was found at Woodcote, and it was also found at Kingwood Common.

Stropharia aurantiaca, an attractive orange-red species, described as 'rare' in Phillips, were found in considerable numbers on pulverised bark in the Heather garden at Virginia water.

A number of species have been unusually abundant. Wood Blewits (Lepista nuda) and Shaggy Parasols (Lepiota rhacodes) have appeared in great numbers in numerous places, and have provided some excellent meals. Clitocybe nebularis were particularly abundant in early November, forming many large rings, up to 16m in diameter at Sulham.

The viscid, yellowish-fawn Mycena epipterygia, usually found in small numbers, have appeared in hundreds at Ufton Nervet, Five Oaken and other places.

The very attractive Cystoderma amianthinum have also been found in large groups, whereas two or three are usually considered a nice find.

The interesting little Calocera pallido-spathulata ('pale and spoon shaped'), discovered only about 15 years ago, and which probably only appeared in Berkshire last year, now seems to be widespread in the county, and was found in five locations.

The Society had two very enjoyable forays, 84 species being found on Judith Hack's outing at Hook End, and a superb 101 species on the all day outing at Kingwood Common, led by Neville Diserens and myself. Congratulations to the diligent searchers on these forays.

Thanks to the faithful few who have contributed to these records, especially Mary and Neville Diserens. There are others among our members who 'fungus', and never send in records; it would be nice to hear from them next year.

Agaricus luteomaculatus

Roadside at Farley Hill, 27.10.87 (PA).

Agaricus maleolens

Roadside at Farley Hill, 20.11.87 (PA).

Agaricus spissicaulis

Shinfield, 27.10.87 (PA).

Agaricus xanthoderma

Silverdale Road, Earley, 31.10.87 (D).

A large ring.

Amanita rubescens var. annulosulphurea

Virginia Water, 26.9.87 (B&D).

Like the type, but with a yellow ring.

Amanita solitaria

Wellington Country Park, 24.10.87 (PA).

Boletus albidus

Virginia Water, 26.9.87 (B&D).

A very uncommon species, whose cut flesh goes a beautiful pale blue colour.

Boletus calopus

Wasing, 3.10.87 (D).

A bitter and inedible species; stipe bright red with white reticulations.

Boletus luridus

Sulham, 30.8.87 (D).

Boletus porosporus

Whiteknights Park, 22.9.87 (B).

Chroogomphus rutilus

Newtown Common, 10.10.87 (B&D).

Collybia distorta

Padworth Common, 30.9.87 (B); Whiteknights Wilderness, 4.10.87 (UW).

An uncommon species, with dark brown cap. Gills white, staining reddish-brown

Cortinarius bulbosus

Burghfield Gravel Pits, 26.10.87 (B).

Cortinarius croceofolius

Virginia Water, 17.10.87 (MS).

Cortinarius phoeniceus

Kingwood Common, 18.10.87 (NH).

A rare, striking species with red-brown cap and blood-red gills.

Cortinarius puniceus

Kingwood Common, 18.10.87 (NH).

A rare, purplish blood-red species.

Cortinarius torvus

Tadley Water Tower, 14.10.87 (B).

Bottom two thirds or more of stipe covered with white, sheathing 'ring'.

Entoloma rhodopolium

Owlsmoor, 29.9.87 (B).

Gomphideus roseus

Owlsmoor, 29.9.87 (B).

An attractive species, cap coral darkening to brick-red, gills greyish.

Inocybe griseo-lilacina

Hook End, 3.10.87 (NH).

Lactarius britannicus

Whiteknights, 9.11.87 (PA).

Identified by R. Roper.

Lactarius volemus

Wasing, 10.10.87 (B).

One of the few edible and good Lactarius, but beware of confusion with other similar species.

Lactarius zonarius

Virginia Water, 26.9.87 (B&D).

Leccinum holopus

Owlsmoor, 29.9.87 (B); Virginia Water, 17.10.87 (MS).

Like a pale L. scabrum, flesh white, but blue-green in base of stipe.

Lepiota castanea

AWE, 23.10.87 (B).

Lepiota ochraceofulva

Garden in Earley, 4.11.87 (PA)

Identity confirmed by D. Reid.

Lepiota puellaris

Roadside at Earley, 12.11.87 (PA)

Leptonia euchroa

Newtown Common, 10.10.87 (NFC).

A small species with a beautiful violet cap. Gills deep violet with a darker edge.

Leptonia serrulata

Virginia Water, 17.10.87 (MS).

A small blue-black fungus, becoming brown with age.

Marasmius recubens

Harpsden, 11.10.87 (D).

A small species with hair-like stipe, which is red-brown with a white apex.

Melanoleuca arcuata

Sulham, 27.9.87 (B).

Melanophyllum eyrei

Bottom Wood Mapledurham, 19.9.87 (B).

Has pale green spores, a very unusual feature.

Mycena epipterygioides

Newtown Common, 10.10.87 (NFC); Virginia Water, 17.10.87 (MS);

Ufton Nervet, 25.10.87 (B).

Larger and brighter yellow than the more common M. epipterygia.

Nolanea hirtipes

Virginia Water, 26.9.87 (B&D).

Phylloporus rhodoxanthus

Virginia Water, 17.10.87 (MS).

A very uncommon species, cap reddish-pink, covered in purplish-grey slime.

Pores golden yellow, becoming bright blood-red.

Pholiota adiposa

Virginia Water, 17.10.87 (MS); Lambridge Wood, 11.10.87 (D).

Pholiota lenta

Rumerhedge Wood, Hook End, 31.10.87 (D).

Pholiota ochrochlora

Whiteknights Park, 22.9.87 (B).

Pluteus lutescens

Sliding Hill Swyncombe, 31.10.87 (D).

Pulveroboletus lignicola

Hook End, 3.10.87 (NH).

Very rare, seen regularly in only one British site. The only Boletus which grows on wood.

Rhodotus palmatus

Burghfield Gravel Pits, 26.10.87 (B); Ufton Nervet, 7.11.87 (B).

Growing only on dead Elm. Once rare, becoming common after the ravages of Dutch Elm disease. Now becoming rarer again.

Rozites caperata

Woodcote, 11.10.87 (CW); Kingwood Common, 10.10.87 (PA)

Rare in Southern England.

Russula alutacea

Padworth Common, 30.9.87 (B).

Russula sanguinea

Hook End, 3.10.87 (NH).

Stropharia aurantiaca

Virginia Water, 17.10.87 (MS).

An uncommon orange-red species.

Tricholoma ustale

Kingwood Common, 18.10.87 (NH).

Viscid, chestnut brown, poisonous.

APHYLLOPHORALES.

Clavariadelphus fistulosus

Kingwood Common, 18.10.87 (NH); Sulham, 15.11.87 (D)

Clavulinopsis luteo-alba

Blacknest, 21.10.87 (B); AWE, 28.10.87 (B).

A bright yellow 'Fairy Club' with a white tip.

Hericium coralloides

Virginia Water, 26.9.87 (B&D).

Hydnellum scrobiculatum

Sulham, 30.8.87 (D).

This species belongs to the Hydnum family, and has spines instead of gills or pores.

Hymenochaete fructigenus

Newtown Common, 10.10.87 (B&D).

Oxyporus populinus

Ufton Nervet, 25.10.87 (B).

A greyish-white bracket fungus, growing in tiers on deciduous trees.

Phellodon melaleucus

Virginia Water, 26.9.87 (B&D).

Another 'spine' fungus, usually clustered and fused together.

Polyporus ciliatus

Whiteknights Wilderness, 4.10.87 (UW).

A 'mushroom shaped' polypore growing on dead logs.

Radulomyces confluens

Virginia Water, 17.10.87 (MS).

Radulomyces molaris

Virginia Water, 17.10.87 (MS).

GASTEROMYCETALES.

Sparassis crispa

Ufton Nervet, 3.10.87 (B); Ufton Nervet, 25.10.87 (B);
Wasing, 10.10.87 (B&D)

Pistillaria quisquiliaris

Newtown Common, 10.10.87 (NFC); Virginia Water, 17.10.87 (MS);
Wasing, 3.10.87 (D).

Langermannia gigantea

Sulhamstead Bannister, 13.9.87 (D).

Lycoperdon mammiforme

Sulham, 27.9.87 (B).

HETEROBASIDIOMYCETES.

Calocera pallido-spathulata

Wasing, 10.10.87 (B&D); Newtown Common, 10.10.87 (B&D); Tadley Water
Tower, 14.10.87 (B); Virginia Water, 17.10.87 (MS); Five Oaken, 1.11.87 (B).
Rapidly spreading in Berkshire. Unknown about fifteen years ago.

ASCOMYCETES

Cyathus striatus

Bottom Wood Mapledurham, 19.9.87 (B).
A tiny 'birds nest' fungus; small cups full of 'eggs'.

Geoglossum cookeianum

Fairwater Drive, Woodley, 30.10.87 (D); Watlington Hill, 8.11.87 (D).

Otidea alutacea

Wasing, 10.10.87 (B); Newtown Common, 10.10.87 (B&D).

Otidea onotica

Kingwood Common, 18.10.87 (NH).

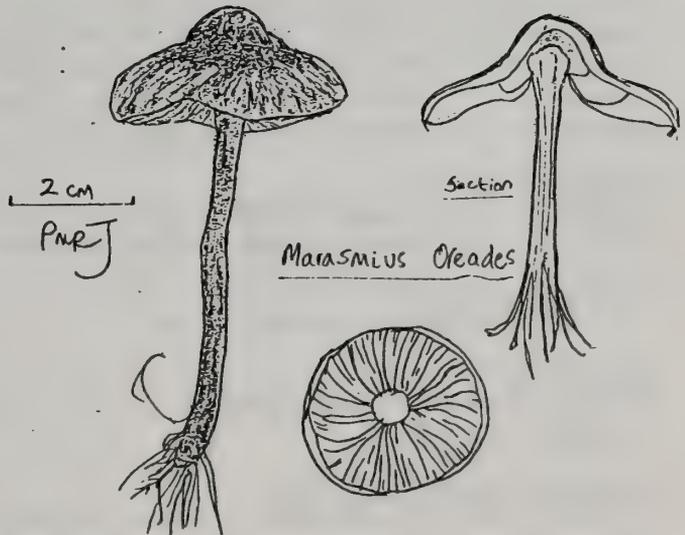
Trichoglossum hirsutum

Woodcote, 11.10.87 (CW).
One of the family of black
'Earth Tongues'.

Contributors.

Ivy and Alan Brickstock (B);
'Chiltern Discovery' walk (CW);
Mary and Neville Diserens (D);
Mycological Society foray (MS);
Newbury Field Club (NFC);
Society forays (NH);
Pat Andrews (PA);
Urban Wildlife Group foray (UW);

Illustration: Paul Jinks.



Fairy Ring Mushroom (Marasmius oreades)

Recorder's Report for Vertebrates 1987

H. H. Carter

FISH

Leuciscus cephalus (L.) Chub
Several young fish up to 250 mm long, Holy Brook by Reading Central Library 17.6.87

AMPHIBIANS

Rana temporaria L. Frog
No records of breeding received this year. 1 dead outside 38 Kennylands Road, Sonning Common 9.10.87.

Bufo bufo (L.) Toad
Many crossing Bottom Lane, Sulhampstead 24.3.87 (IF per BRB). 1 dead on Kiln Road, Emmer Green 26.3.87. None in pond at Coach and Horses, Binfield Heath 24.3.87, a few there 30.3.87. 1 dead in Binfield Heath Lane 21.4.87. 2 dead on roads in Sonning Common area June 1987. 1 in Bird Wood, Sonning Common c. 7.7.87 (NJC). Many at Reddish Manor, Sonning Common 10.7.87 (KH).

REPTILES

Anguis fragilis L. Slow Worm
1 dead in Blackmore Lane, Sonning Common 31.8.87.

Vipera berus (L.) Adder
3 at Pamber 15.3.87 (NJD). 1 dead at Reddish Manor, Sonning Common 10.7.87 (KH).

MAMMALS

Talpa europaea L. Mole
Skinners Green, Newbury 27.1.87, Peppard 7.2.87, Nutbeam Farm, Farley Hill 25.2.87, Inwood Copse, Brimpton 15.3.87, 2 dead Moor Copse 17.6.87 (HJMB)

Erinaceus europaeus L. Hedgehog
Blackmoor Wood, Watlington 9.8.87; frequent elsewhere (HJMB). 3 alive, 6 dead on roads in and around Sonning Common May to November 1987. 1 dead Westfield Road 1.6.87. A torpid juvenile, Earley end December 1987, very late and unlikely to survive.

Vulpes vulpes (L.) Fox
Large fox with white-tipped tail Hardwick 8.2.87 (NJC). 1 Nutbeam Farm, Farley Hill 23.2.87, 1 dead on M4 near Waltham Great Wood 22.3.87 (HJMB). 1 crossing A4074 near Woodcote first week June 1987 (EMC). 1 in garden, Cockney Hill 15.6.87 (AB). 1 calling Kidmore End 15.9.87, 1 crossing Horsepond Road near Cane End 24.10.87.

Meles meles (L.) Badger
1 dead by Mill Lane, Cookham 10.5.87. 1 dead on Swallowfield by-pass 400m south of River Loddon 6.6.87 (JA). Dead juvenile Hennerton (PF).

Mustela erminea L. Stoat
1 at Whiteknights 25.4.87 (HJMB).

Dama dama (L.) Fallow Deer
8 does Skinners Green, Newbury 27.1.87 (HJMB). 4 Baynes Reserve, Thatcham 10.4.87.

Capreolus capreolus (L.) Roe Deer
1 Stoke Row 20.12.86 (NJD). Inwood Copse, Brimpton 15.3.87 (HJMB). 2 groups of 3 Aldermaston Park 12.4.87 (BRB); abundant in the Padworth area where they are being shot (per BRB).

Muntiacus reevesi Ogilby Muntjac
1 in field by Waltham Great Wood 22.3.87 (HJMB). 1 Tilehurst woods 20.5.87,
1 Nettlebed woods 31.10.87 (NMD). 1 calling Kennylands, Sonning Common
14.6.87, Kidmore End 15.9.87.

Oryctolagus cuniculus (L.) Rabbit
65 alive or dead in and between Sonning Common and Emmer Green, maximum
8 Chalkhouse Green 16.4.87. 11 Hardwick, 1 at South Stoke viaduct 3.6.87.
1 north of Stonor 25.12.87 (MJC).

Lepus capensis Pallas Hare
1 Nuffield 3.1.87, 2 Lockinge 25.1.87 (NMD). 1 Skinners Green, Newbury
27.1.87 (HJMB). 1 west of Noor Copse c. 8.7.87 (MJC). 1 dead on Binfield
Heath Lane by Bishopsland Farm.

Arvicola amphibius (L.) Water Vole
Inwood-Copse, Brimpton 15.3.87 (HJMB).

Microtus agrestis (L.) Short-tailed Vole
1 killed by predator (probably cat) Kennylands Paddock, Sonning Common
11.5.87.

Apodemus sylvaticus (L.) Wood Mouse
1 dead north of Sonning Common 14.4.87

Micromys minutus (L.) Harvest Mouse
In corn by Blackmoor Wood, Watlington 9.8.87 (HJMB).

Rattus norvegicus Berk. Brown Rat
1 on Peppard Road by Bishopsland Farm c. 8.9.87, 18.11.87 (MJC).
Dead ones there 21.1.87, 23.3.87, 5 dates in August 1987, 15.9.87, 11.10.87.
Dead ones on other roads in and around Sonning Common 23.9.87, 2.11.87,
31.12.87. 1 at Caversham Marina 26.2.87. One crossing road at Benson
11.10.87.

Mus musculus L. House Mouse
Rubbish bags in Old Town Hall several dates in January 1987.

Sciurus carolinensis Gmelin Grey Squirrel
1 Peppard 2.2.87 (HJMB). 1 dead on road, Emmer Green 28.5.87, 5.6.87.
1 Highmoor Road, Caversham Heights 14.6.87 (EMC). Female carrying young,
Highmoor Road 16.9.87; the juvenile was riding upside down under the
mother's abdomen, clasping her body with all four feet (the Ulysses
position) (BRB). 1 Coppid Hall, Binfield Heath 13.12.87, 1 north of Stonor
25,12.87 (MJC). 1 Kennylands Paddock, Sonning Common 30.6.87. 1 Reades
Lane, Sonning Common, 1 Whitchurch Hill 28.12.87. Dead ones on road
Binfield Heath Lane 20.9.87, Sonning Eye 26.9.87, Peppard Road near
Chalkhouse Green 30.10.87.

My thanks are due to the following contributors:-

Dr Joyce Andrews (JA); Brian Baker (BRB); Humphry Bowen (HJB);
Dr Alan Brickstock (AB); Elizabeth Carter (EMC); Lary Carter (MJC);
Neville and Lary Diserens (NLD); Patricia Fermour (PF); Ian Francis (IF);
Katharine Hardy (KH).

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The Weather at Reading during 1987

by

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1987 made a mockery of climatic means because, despite all the recorded weather extremes (like the severe January cold, the dismal June coolness and rains and the October gales and floods), the year ended up pretty close to normal. As far as rainfall is concerned, the very wet June and October (which together recorded almost 40% of the year's aggregate) were completely counteracted by the very dry months of January, August, September and December. Even the devastating gales of October had little effect on the mean annual windspeed which was the lowest for 26 years, to confirm the view that all means are meaningless since they conceal such vital extremes!! The major weather deviant was again sunshine since, for the third year running, the hours of sunshine were well below normal. In fact, these values were a miserable 14% below and 222 hours of sunshine "lost" over the year gave us the third dullest year since 1956.

The following monthly weather summaries are based on the table of Weather Records provided:-

January continued the winter-less conditions until about the 7th when the infamous blocking high began to dominate our weather to give bitterly cold conditions for the next two weeks, with freezing easterly winds from the continent. Consequently, we had the third consecutive "big freeze" with 317 hours below 0°C, which turned out to be the ninth coldest month since 1940. However, this was only about half as bad as the 567 hours recorded in the No.1 "big freeze" of January 1963, which was then followed by another 344 hours in February. Overall, the mean temperature for the month was 3°C below normal (compared with 6°C below in February 1986) and on the 12th, the daily mean temperature (-8.3°C) was the lowest recorded since observations began in 1921. The dominant anticyclone gave very dry conditions (despite 6 days of snow) with the aggregate precipitation some 85% below normal. In spite of the high pressure and dryness, the weather was also dull with 14 consecutive sunless days, the most for 30 years.

February recorded overall average temperatures with marked variations from above average early on, to a cold 10-day spell which was followed by very mild weather, with the warmest day (14.4°C) and night (10°C) on the 28th the highest temperatures for 12 years and 27 years respectively. The month remained dry (27% below normal) and, coupled with January, made the winter the fourth driest since 1921 (after 1963, 1964 and 1973). Sunshine was about average but was still only 23% of the maximum hours possible.

March took us back to winter with temperatures about 1°C below normal, the extreme maximum temperature the lowest recorded for 27 years and the number of air frosts (14) the highest for 17 years. The month was also windy and dull (sunshine some 9% below average) but precipitation was about average overall, despite very wet weather early and late in the month.

April started cool and wet but ended up very warm, dry and sunny to give us the best spring weather since the early 1950's. Overall, the temperatures averaged 2.5°C above normal and the second half of the month recorded seven days with maximum temperatures in excess of 20°C. Indeed, the 22.6°C

maximum on the 28th was the highest for any April day since 1952. Precipitation was most variable and although the monthly aggregate was 34% above normal, most of this was recorded in the first 10 days since an absolute drought (ie. 15 consecutive days with less than 0.2mm precipitation) occurred between the 11th and 27th. Sunshine was a little above average and was some 38% of maximum possible, which turned out to be the best of the year.

May was a disappointingly cool month, especially early on with a minimum temperature of -1.4°C on the 4th and 12 ground frosts recorded in the first three weeks (the highest number since 1980). Precipitation was very close to normal, following a very dry first half, mainly because 36% of the monthly aggregate (18.5mm) was recorded on one day (30th). It was a dull month since sunshine was 13% below normal which meant a daily "loss" of almost an hour.

June turned out to be a disaster weather-wise and was cool, very wet and very dull. Temperatures were well below normal and indeed only recovered in the last five days with a maximum of 27.1°C recorded on the 29th (the warmest day of the year so far). Rainfall was 47% above normal and the number of rain days/wet days was the highest since 1921. Sunshine totals were 33% below average, the lowest since 1956, and the amount received was a pathetic 27% of the maximum possible, so that we "lost" about 2 hours per day.

July gave us summer weather at long last, particularly during the first half of the month which was hot, dry and sunny. The warmest day of the year (so far) was experienced on the 6th (27.9°C) during a short-lived "heat wave" and indeed the maximum temperatures exceeded 22°C on ten occasions during the first two weeks. The second half of the month saw a rapid change to cool weather and a minimum temperature of only 7°C on the 26th, with 3°C recorded on the grass. The rainfall patterns were similar, with a very dry first half (and an absolute drought ending on the 14th) then very wet, with nine consecutive rain days. Overall, the rainfall aggregate was very close to normal which completely masked the extremes. Sunshine totals were disappointing and despite a sunny first half (averaging 15 hours per day between the 3rd and 5th), ended up 17% below normal due to a very dull second half of the month (with the highest number of sunless days for 10 years).

August was a reasonable month with average temperatures, apart from a hot spell mid-month when the warmest day of the year (28.4°C) was recorded on the 21st. The month was very dry with rainfall an incredible 60% below normal, although there were only 6 consecutive dry days observed. It was also calm and very dull (again) with sunshine totals some 15% below average.

September was also quite reasonable with temperatures well above average for the first three weeks (with 17 days recording maxima over 19°C). However, the weather turned cold during the last week and the 1.2°C minimum on the 29th was the lowest for 18 years. The aggregate rainfall was again small, some 40% below normal but ironically, the number of rain days was the highest for 11 years despite the generally dry conditions experienced. The month was dull again (for the fifth month running) being 10% below normal.

October was an exceptional weather month to remember with over 3 times the normal rainfall (making it the third wettest October since 1921 or even 1727 according to the Met. Office) and the infamous hurricane-like storm on the 16th. Temperatures were close to normal, apart from cold conditions in the last week when ground frosts were common. The month was very wet with a record-number of rain days and with the daily totals both on the 9th (31.7mm) and 15th (31.3mm) not far short of the monthly mean aggregate. They were also the 3rd and 4th highest rainfall totals (respectively) recorded on any October day since 1921. The storm of the 16th with gusts

up to 77 m.p.h., caused widespread damage to buildings and trees, and the lowest pressure recorded was 952mb, which equalled that of a modest hurricane. As the deep depression quickly passed eastwards, the associated warm and cold fronts caused spectacular temperature changes from 7.2°C at 1800 hrs on the 15th up to 16.2°C by 2300 hrs and back down to 7°C by 0400 hours on the 16th. Despite all the cloud and rain during the month, sunshine hours were slightly above average and indeed were very close to the mid-summer (June) total.

November was reasonable on the whole in terms of temperature and precipitation, but was again very dull. Indeed, temperatures were generally above average for the first three weeks or so, with the extreme maximum (13.1°C) on the 16th the highest for a decade. The last week or so was much colder than normal with a minimum temperature of -4°C on the 29th, and 3 air frosts/7 ground frosts recorded in the last ten days. The month was dry with the aggregate precipitation some 16% below normal and most (64%) of this rainfall was recorded on two days, namely the 8th (14.5mm) and 11th (17.6mm). Sunshine was a rare event, about half of the normal expected and a pathetic 15% of the maximum possible. To aggravate the dullness, it was the foggiest November since 1961.

December continued dull, dry early winter weather with sunshine only 23% of normal and precipitation some 67% below normal, the lowest aggregate for 24 years and the sixth lowest since 1921. Temperatures were generally above average, especially in the second half of the month when no air frosts were recorded, only 2 ground frosts occurred and the maximum temperature exceeded 11.9°C between the 27th and 30th. Conversely, the first half of the month had temperatures well below normal, with 7 air frosts, 10 ground frosts and a minimum of -4.6°C on the 11th. The first snow of the winter fell on the 9th, which survived until late morning.

Overview. The extreme weather events of 1987 in the Reading area appear to be simply a symptom of a world-wide change in climate. The global weather really has become more extreme and variable over the last two decades or so in particular, with record droughts, floods, storms, heat and cold. Some weather experts consider these extremes to be well within the boundaries of expected random fluctuations, with no cause for alarm. However, others consider them as indicators of a dramatic change of climate in the future, which could go either way and produce a hot time ahead (with melting ice sheets/rising sea levels) or another ice age. The former trend is currently the most popular one (and is explained in terms of increasing carbon dioxide and the so-called "greenhouse effect") but there is still considerable debate about the timing of this devastating event. However, the U.S. Environmental Protection Agency predicts the changes by the year 2100 which is rather too close for comfort, even if the Chilterns will remain high and dry at that time!

WEATHER RECORDS: 19 87

STATION: READING UNIVERSITY (MIDNIGHTS)

		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Mean Daily Temperatures °C	Max.	3.2	7.3	8.1	14.9	15.3	17.8	20.8	21.1	18.7	14.3	9.2	8.3	13.3
	Min.	-1.3	1.1	1.4	6.1	6.6	9.9	12.2	11.7	10.5	6.5	4.2	3.3	6.0
	Mean	1.0	4.2	4.8	10.5	11.0	13.9	16.6	16.4	14.6	10.4	6.7	5.8	9.7
	Range	4.5	6.2	6.7	8.8	8.7	7.9	8.7	9.4	8.7	7.8	5.0	5.0	7.3
Extreme Temperatures °C	Extreme Max. Date	10.4 1st	14.4 28th	12.0 17th	22.6 24th	22.0 9th	27.1 29th	27.9 6th	28.8 21st	24.1 1st	19.7 4th	13.1 16th	13.9 17th	28.8 21/8
	Extreme Min. Date	-9.8 12th	-6.4 1st	-3.8 13th	1.0 2nd	-1.4 4th	3.9 10th	-7.1 26th	7.0 5/10th	1.2 29th	-1.7 25th	-3.8 29th	-4.6 11th	-9.8 12/1
	Extreme Grass Min. Date	-14.0 12th	-11.0 1st	-9.9 13th	-2.5 2nd	-4.4 8th	-0.6 16th	2.9 26th	1.1 11th	-3.5 29th	-4.7 25th	-6.9 29th	-7.0 10th	-14.0 12/1
Days with air frost		19	13	14	0	1	0	0	0	0	1	3	7	58
Days with ground frost		24	17	21	11	12	2	0	0	5	10	12	12	126
Hours at or below 0.0°C		317.5	93.5	87.0	0	1.0	0	0	0	0	1.0	37.0	63.5	599
Sunshine Hours	Sum	61.2	64.0	103.2	156.6	176.5	135.6	171.2	164.7	137.1	115.3	41.6	39.3	1366
	% of possible Daily Mean	23 1.97	23 2.29	28 3.32	38 5.22	37 5.66	27 4.52	34 5.52	37 5.31	36 4.57	35 3.72	15 1.39	16 1.28	30 3.74
Precipitation	Amount in mm	8.7	33.8	59.7	51.9	50.9	81.1	44.9	23.9	33.0	154.5	49.9	20.4	613
	Rain Days	8	12	17	11	15	17	13	11	15	22	11	12	164
Maximum rain in one day "	Date	3.8 4th	8.9 13th	11.9 26th	14.0 4th	18.5 30th	12.0 8th	17.0 18th	5.8 25th	8.9 12th	31.7 9th	17.6 11th	8.3 15th	31.7 9/10
Longest run of consecutive rain days		2	3	8	8	5	5	9	3	7	12	6	3	12 Oct.
Longest run of consecutive dry days		7	8	9	17	7	4	13	6	7	4	8	8	17 Apr
Snow or sleet days		6	4	5	0	0	0	0	0	0	0	0	1	16
Days with snow lying		4	0	5	0	0	0	0	0	0	0	0	0	9
Visibility	Days with fog at 0900 GMT	2	3	1	1	0	0	0	0	0	3	6	2	18
Thunderstorm Activity	Days of thunder	0	0	1	1	1	1	0	2	0	0	0	0	6
	Days of hail	0	0	1	0	1	0	0	0	0	0	0	0	2
Barometric Pressure mb	Mean	1024	1016	1016	1016	1019	1014	1017	1016	1015	1009	1017	1020	1017
	Highest Date	1040 24th	1029 23rd	1034 12th	1033 15th	1034 5th	1024 25th	1027 3rd	1025 28th	1031 29th	1029 25th	1038 5th	1036 22nd	1040 24/1
	Lowest	1004	997	981	993	1000	997	997	1007	1006	987	988	998	987
	Date	1st	11th	27th	4th	12th	19th	17th	23rd	12th	15th	13th	16th	15/10



