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Meetings and Excursions 1973-74

The winter programme of evening meetings opened on October 18th with the Annual General Meeting, at which Mr. H. H. Carter delivered his Presidential Address on The Present Status of Mammals in the Reading Area (attendance 36). Films were shown at one meeting (48) and Members' evenings of Films, Talks and Exhibits were held on December 13th (29) and March 21st (54). The lectures given at the remaining seven meetings were 'Man's Effects upon the Genetics of Wild Plants', by Dr. R. W. Snaydon (32); 'Plants of Tierra del Fuego', by Dr. D. M. Moore (39); 'Bird Flight', by Professor K. Simkiss (36); 'Practical Problems of Nature Reserve Management', by Mrs. J. Buchanan (33); 'The Role of Conservation in Geology and Physiography', by Mr. A. E. Stubbs (29); 'The Insects of British Hedgerows', by Dr. H. F. van Emden (47); and 'Dutch Elm Disease', by Dr. J. N. Gibbs (29).

Winter walks were taken on November 17th, to Chazey Wood (9); December 15th, for birds and lichens (7); January 12th, to Burghfield for birds (18); February 19th, to Checkendon (8); and March 9th, to Cleeve for mosses (8).

The field excursions during the summer were as follows: April 6th, Streatley Hill area (38); April 20th, Ashampstead area (32); May 1st, evening excursion to Stratfield Saye (23); May 4th, Ufton Woods; May 15th, evening excursion to Great Lea Common and local gravel pits (23); May 18th, Thames-side walk from Streatley to Wallingford; May 22nd, evening excursion to woodland in the Marlow area (14); June 1st, Bernwood Reserve and Wick Copse (23); June 12th, evening excursion to Sulham Woods (18); June 15th, coach excursion to Cheddar, the Mendips and Brean Down (40); June 29th, Chinnor Hill Reserve (10); July 6th, disused railway line at Hermitage (26); July 13th, Warren Bank Reserve (14); July 26th, evening excursion to Moor Copse Reserve (17); July 27th, Silchester Common and Pamber Heath (20); August 10th, Thursley Common Reserve, Surrey (10); August 24th, Wargrave Marsh Reserve, (c. 30); September 7th, Chobham Common, (c. 10); September 21st, Savernake Forest (c. 30); October 5th, Fungus Foray in Fence Wood, Hermitage (c. 30); October 19th, Fungus Foray in the Basildon area (c. 25).

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The Present Status of the Mammals of the Reading Area

The Presidential Address

to the Reading and District Natural History Society

18th October 1973

by H. H. Carter

It is now just 40 years since W. A. Smallcombe reviewed the status of the local mammals, reptiles and amphibians in the Society's first publication, Vol. 1 no. 1 of Quaestiones Naturales. Since then many changes have taken place both in the face of the landscape and in the mammal population, and now that the offices of President and Recorder for Vertebrates are for the time being combined in my own person it seems opportune to take a fresh look at the situation.

Smallcombe mentioned 27 mammalian species; I shall mention 32. The difference is made up of two losses and 7 additions. Seven of the changes are real, whereas the other two merely reflect an improvement in our knowledge of the respective species. I decline to believe that in 1933 the mouse-eared bat Myotismyotis Schreber was anything more than a rare vagrant, or that the bank vole Clethrionomys glareolus Schreber could not have been found here by an earnest enquirer armed with half a dozen mouse-traps and a good idea of where to set them. The one genuine loss is the red squirrel Sciurus vulgaris L. which has proved unable to compete on equal terms with its ecological rival the grey squirrel Sciurus carolinensis Gmelin. In return we have gained five species of deer and one carnivore, the mink. In addition, the black rat, musk rat and coypu have all been at large in or around our area but have not proved able to establish themselves.

I have already referred to the mouse-eared bat, which Smallcombe called the great grey, and there is no need (fortunately, because I know little about them and they are seldom reported) to deal in detail with the remaining bats, whose status was admirably summarised by Michael Hardy in 1966 (Reading Naturalist no. 19) and has not changed appreciably since then. The pipistrelle - Pipistrellus pipistrellus (Schreber.) - is the commonest species, usually seen hunting around isolated trees or tall hedges. The noctule - Nyctalus noctula (Schreber) - is also quite common and often seen in the vicinity of water. The long-eared bat - Plecotus auritus (L.) - is perhaps a little less common than the noctule and certainly less gregarious, a specialist in Noctuid moths. The outsize ears are associated with a low-powered echo-location apparatus, enabling it to catch species which are alerted by the powerful locating pulses of other bats. Daubenton's bat - Myotis daubentoni (Kuhl) - is much less common than our other bats and only found over water.

The common shrew - Sorex araneus L- is abundant in areas of tree cover hedgerows and rough pasture wherever there is freedom from disturbance by cultiva

The pygmy shrew - Sorex minutus L. - is a good deal less common than the preceding species, and not recorded at all from the northernmost part of our area. This may well be because observers tend to identify any group of shrews detected in the field by sound as common shrews, and the trapping which would reveal the presence of both species has still to be done. I believe, however, that pygmy shrews are less likely to occur in grassland. The water shrew - Neomys fodiens (Pennant) - is probably less abundant thaneither of the other two shrews. It is of course commonest in the vicinity of water, particularly shallow

gravelly streams with abundant submerged vegetation rich in aquatic invertebrate life, but as Crowcroft (Life of the Shrew, p. 134) observed and the distribution map shows, water shrews can be found in small numbers far from water. They have been taken locally on the dry Berkshire Downs and Chilterns as well as on Burghfield Common where there is water. The mole-Talpa europaea L. - is abundant throughout the area, but most obvious on open grassland, particularly in upland districts and on the flat land bordering the rivers, including wet riverside woodlands. Provided the ground remains undisturbed, the moles' system of tunnels becomes permanent and with the gradual disappearance of the molehills the presence of the animals is difficult to detect. The hedgehog - Erinaceus europaeus L. - is quite common in suburban districts but less frequent in open country, to judge from the distribution of road casualties. Being more nocturnal than other insectivores, and having the habit of hibernation, it is infrequently seen alive, and may be more frequent in woods and scrubland than the reports I receive would indicate.

The brown hare - Lepus capensis Pallas - is common in open country, including many low-lying marshy places, also but less frequently occurring in woodland. The numbers fluctuate from year to year, and in our area at any rate they appear to fluctuate inversely with those of the rabbit, suggesting that the two species compete for food. Both young and adults are frequently killed on roads. The rabbit - Oryctolagus cuniculus (L.) - is now abundant in many parts of the area, but its distribution is still patchy. Rabbits are most numerous in heathland, and the rest are concentrated in areas of woodland fringe and scrub, particularly where hedge banks and abandoned gravel pits make for easy tunnelling. They are frequently found in disused badger setts and on the edge of used ones. They are less often killed by cars than hares. Sporadic local outbreaks of myxomatosis are reported and probably occur in most years, but have little effect on overall numbers.

The brown rat - Rattus norvegicus Berkenhout - is seldom recorded from urban areas, though no doubt it still occurs there. Brown rats are often found dead on roads and then usually near farms. Considerable numbers occur at rubbish tips and along the banks of rivers, especially the Thames; wet rubbish tips in old gravel pits are very attractive to rats. The house mouse - Mus musculus L. - like the brown rat, is underrecorded. It seems to be no longer ubiquitous in built-up areas, though many old buildings such as the Town Hall are still infested. Modern methods of construction which make less use of timber and eliminate joists and skirting boards are much less hospitable to mice. Most records in recent years have come from areas on the fringes of towns, especially where pets and other small livestock are commonly kept, and wooden sheds and spilled food provide shelter and sustenance. The wood mouse - Apodemus sylvaticus (L.) - is very generally distributed, and may be found everywhere except in densely built-up areas, but the main concentrations are in woodland and scrub, particularly where the ground cover is discontinuous. Its long legs and large eyes and ears are associated with the alertness, speed and agility necessary for survival in the open. It is probably the commonest small mammal in the Reading area, and certainly constitutes a majority of those taken in Longworth traps. The yellow-necked mouse - Apodemus flavicollis (Melchior) was regarded by Smallcombe as a race of the preceding species, and this view was widely shared at the time when he wrote, but although both forms breed readily in captivity, many attempts to obtain hybrids between them have been made without success. Although they are morphologically very similar, there is clearly a substantial genetic barrier between them and

they must be considered as full species. The distribution of the yellow-necked mouse is characteristically that of a relict species, scattered in small pockets through the range of its more successful competitor, the wood mouse. There seems to be no evidence in Britain that yellow-necked mice have been better able to survive in any special type of habitat (compare red squirrel in pine woods and black rat in ships and warehouses) although there is some indication of this in continental Europe. The distribution map of this species shows one of these pockets in the Newbury area, extending over a variety of habitat types. The harvest mouse - Micromys minutus (Pallas) - is dependent on dense stands of tall stout grasses among which it climbs and builds its summer nest, but in winter it moves underground, where it is better protected from weather and predators but is not able to breed. In the past this annual movement was completed before the end of the corn harvest and the species was able to breed in cornfields and become quite common. Nowadays the harvesting is completed earlier, owing to the use of rapid mechanical methods and the development of strains of corn which are able to ripen during the average English summer without waiting for the fine spell in September. Consequently the once aptly named harvest mouse is now restricted to reed beds and is most numerous in the valley of the Kennet, though nowhere really common.

There is still doubt as to whether the water vole - Arvicola amphibius (L.) - is a full species confined to Britain or merely a race of the continental A. terrestris (L.), which differs slightly in size and some minor points of structure and is much less aquatic in habit. Non-aquatic populations of water vole have been discovered in Britain but not in our area, where the species is abundant along the larger watercourses and the margins of lakes and gravel pits. The short-tailed vole - Microtus agrestis (L.) - is the common vole of grassland, and also invades young plantations where its numbers may reach plague proportions. This is more usual in the severer climate of the north of Britain but a case was reported this year at Maidenhatch. The bank vole - Clethrionomys glareolus Schreber - is less numerous than the other two voles and occurs chiefly in woodland. In wet riverside woods it is sometimes the predominant small mammal. Living as it does in a more mixed habitat and under less rigorous conditions than the short-tailed vole, its numbers are more stable. The dormouse - Muscardinus avellanarius (L.) - , in this area at least, is dependent on hazel nuts as its staple diet and therefore forms small colonies where there are large stands of hazel - Corylus avellana L. - which are sufficiently exposed to sunlight to fruit freely. In recent years it has been found, though infrequently, in most of the wooded parts (other than acid heathland) of our area.

The grey squirrel - Sciurus carolensis Gmelin - is abundant in all areas of broad-leaved woodland, where it is frequently a pest, and is present but less numerous in coniferous woodland. It is also common in suburban areas and will climb on buildings to obtain food. It is frequently killed on roads.

The badger - Meles meles (L.) - is our commonest large carnivore, but it is selective in its choice of habitat and ranges less widely than the fox. In areas of light dry sandy or gravelly soils, badger setts are found at an average spacing of one per kilometre. Not all setts are occupied all the time, but more than one pair or family will often share a sett. Most setts are in the woodland areas which provide the badgers with the bulk of their food, and the animals are not put off by the proximity of human habitation, provided the density of human

occupation is not so great as to make digging and hunting impossible. The stoat - Mustela erminea L. - is common but less often seen than its numbers would warrant. Its numbers fluctuate, and in recent years have corresponded fairly closely with those of its main prey, the rabbit, but with the peaks and troughs coming a year later in each case; such a delayed response reflects the degree of breeding success in the previous year. In round terms, one stoat is reported for every 30 - 40 rabbits. The weasel - Mustela nivalis L. - being much less dependent on a single prey species than the stoat, is less subject to fluctuation in numbers, and even in years of peak stoat abundance it is almost twice as numerous as the larger species. Both frequent a wide variety of habitat but are probably commonest in wooded areas but harder to see there than in more open country. The mink - Mustela vison Schreber - a semi-aquatic species, has been known for a number of years in the Kennet valley and more recently has crossed into the upper Pang valley. At the moment there is no indication of any further extension of its range.

The Reading area cannot be said to possess a resident population of otters - Lutra lutra (L.) - but it is visited periodically by single animals or small groups, which as they travel across country are sometimes seen far from water. They have been reported in three out of the last eight years. In point of numbers the fox - Vulpes vulpes (L.) - comes close to the badger, being less gregarious but more widespread and adaptable in its choice of habitat. North of the Thames, calling foxes seem to be spaced out at the rate of one every two kilometres, but in some suburban areas such as Tilehurst and Padworth there are denser concentrations of fox population. Numbers appear not to fluctuate, no doubt because of the versatility of the animal. There does seem to have been a slow but steady increase in numbers in the past few years, but the unprecedented quantity of records (70 sightings) received this year is due to an increase in observer activity rather than in the fox population. Something over 20 a year is the usual level.

Finally I come to the deer, which in several ways are the most exciting group of mammals to be studied in our area. They are spectacularly large, gregarious in most cases, and their numbers and distribution have been changing dramatically. Smallcombe omitted even the fallow deer - Cervis dama L. - from his list, probably on the grounds that any fallow deer which came to his notice were escapes from Englefield Park or other captive herds. Whether or not this was true in his day, it is now certain that fallow deer are living wild and breeding freely in most of the large local woods. The species has a long and chequered history in this country and many arguments have raged about its true status, some claiming descent for it from the large extinct Dama clactoniana, now often considered to be only an older race of the same species, others maintaining that if it ever existed here in prehistoric times it must have died out and been reintroduced by man at a later date. However it got here, it is now our most conspicuous and very probably our commonest species of deer in this area, lying up in cover by day and feeding, often on agricultural land or even in gardens, by night. The red deer - Cervus elaphus (L.) - long absent from south-east England as a wild animal, was reported from Padworth this year by an observer well acquainted with deer; he saw two there together. Although often associated with open moorland in this country, the red deer is really a forest animal and never reaches its full development either in stature or in complexity of antlers when obliged to subsist on the meagre diet afforded by heather moorland. The muntjac - Muntiacus reevesi Ogilby - is the most numerous and well-established of the recently introduced deer species, and the only one which is really successful in our area.

It has long been knownin the Chilterns, and can now be found south of the Thames from Cookham to Hermitage. The main line of advance is in a south-westerly direction and still continues. The roe deer - Capreolus capreolus (L.) - has only recently arrived in our area, having first been reported in 1972 at Mortimer, though it had already been noticed some years ago at Virginia Water and in 1971 to the south of Newbury. A number of reports received this year show that roe deer are rapidly spreading northwards between Reading and Newbury, and must already have encountered muntjac. It remains to be seen whether these two species will be able to co-exist as they both do with fallow deer. There are two records of Chinese water deer - Hydropotes inermis (Swinhoe) - from Marsh Benham and Silchester. Although naturally semi-aquatic, it is said to have adapted itself to dry habitats in Britain, as indeed these two records confirm.

The overall picture for mammals as a whole is an encouraging one of an adaptable and aggressive group of animals which are accommodating themselves to a changing habitat and the proximity of man.

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Observations on Molluscs around Reading

by H. J. M. Bowen

Molluscs are a small group of animals which are easily identified but not often studied. Since the launching of the National recording scheme, with its printed list of species, there has been a revival of interest in the distribution of Molluscs in Britain. J. B. Hall (1968) has summarised the current knowledge of distribution east of Reading, but emphasised the many gaps in the records. One purpose of the present note is to stimulate interest in the group, and to encourage recorders to study the region west of Reading, especially the Kennet valley.

Many molluscs are small (roughly half the British species are less than 1 cm in diameter) and are none too easy to collect. In gardens, they can be found usually in damp corners and under stones, or they can be trapped by suitable baits. Grassland species are more easily seen, especially the dead shells, though in marshy places the best finds are made by laboriously searching the matted debris of Phragmites or tussock grasses. Heaths are poor in species, since the soil lacks calcium, but woods, especially old forests, can be extremely rich. The smaller species may be obtained live by taking home a sack of wet litter and placing it in a large funnel over a source of mild heat. Alternatively the litter may be air-dried on newspaper and then sieved; it is far easier to hand-pick small shells from material of homogenous particle size than from unsorted litter. The same method of drying and sieving may be applied to flood debris, which can be very rich in both molluscan and beetle species in the Thames valley. Live freshwater molluscs may be obtained by dredging, or by removing masses of water-weeds in polythene bags and sorting them at leisure.

Identification requires the use of Ellis' book (1926) for most species, together with pamphlets by Quick (1949 and 1961) for slugs, Macan and Cooper (1949) for freshwater univalves and Ellis (1940, 1946), 1947 and 1962) for freshwater bivalves. Quick's paper of 1952 covers the identification of local terrestrial molluscs. There is no adequate substitute for a small reference collection in glass tubes or matchboxes, which need occupy very little space.

Obtainable from the Biological Records Centre at Monkswood, Huntingdon, or from Dr. Kerney, Dept. of Geology, Imperial College, London, S.W.7.

Predominantly woodland species

The following seem to be frequent, though by no means recorded from every square: Cochlicopa lubrica (Müller), C. lubricella Stabile, Ena obscura (Müller), Clausilia bidentata (Strom), Arianta arbustorum (L.), Helix hortensis Müller, H. nemoralis L., Hygromia striolata C. Pfeiffer, H. hispida (L.) and its close ally H. liberta (Westerlund), Discus rotundatus (Müller), Oxychilus alliarius (Müller), O. cellarius (Müller), O. helveticus (Blum), Vitrea crystallina (Müller), Retinella radiatula (Drap.), R. pura (Alder), Vitrina pellucida (Müller) and the slugs Arion intermedius Normand, A. circumscriptus Johnston, A. hortensis Férussac, A. subfuscus Drap., A. ater (L.), A. rufus (L.), Limax maximus L., Lehmannia marginata Müller, Agriolimax reticulatus Müller.

Among the more local species we have:

Pomatias elegans (Müller), Abida secale (Drap.), Marpessa laminata (Montagu) and Euconulus fulvus (Müller); locally frequent in woods on the chalk.

Acicula fusca Montagu, rare: Henley, 1857, J. F. Whiteaves: Bix, 1969, J. Chatfield: Crowell Hill, 1974!

Azeca goodalli (Férussac), rare; Bix, 1969, J. Chatfield.

Columella edentula (Drap.), occasional; Caversham Warren, 1939, L. W. Grensted; Cholsey!

Acanthinula aculeata (Müller) and Punctum pygmaeum (Drap.); probably common in litter but hard to find.

Acanthinula lamellata (Jeffreys), a species of old woods; Theale Lock, 1905, W. Holland.

Ena montana (Drap.), rare; Harpsden Wood, 1907, W. Holland; Bix, 1969, J. Chatfield; River Copse, Inkpen!

Clausilia rolphi Turton, rare; Sulham, 1906, B. B. Woodward.

Balea perversa (L.), apparently absent, though it occurs on willows near Oxford.

Helix pomatia L. (the Roman Snail), extinct?; Great Marlow and Hambleden, 1905, B. B. Woodward.

Hygromia subrufescens (Müller), rare; Fawley Wood, 1905, B. B. Woodward.

Zonitoides excavatus (Alder), confined to woods on acid soils, e.g. Wellington College, 1888, H. W. Monckton; Windsor Forest, 1974!

Vitrea contracta (Westerlund), said to occur in dry woods (Hall), not seen by me.

Predominantly grassland species

In dry grassland on chalk may be found the minute Cecilioides acicula (Müller), often buried in the soil, and the black and white banded Helicellas - H. caperata (Montagu), H. gigaxi (C. Pfeiffer), H. virgata (da Costa) and H. itala (L.), which are local but conspicuous where they occur. Marshes and damp grassland have many common species such as Monacha cantiana (Montagu) (which likes nettles), Succinea pfeifferi Rossmässler (on bur-reed by the canal), the tiny Carychium tridentatum (Risso) and the less common C. minimum Müller, Vallonia excentrica Sterki and the less common V. costata (Müller) and V. pulchella (Müller), Retinella nitidula (Drap.), Zonitoides nitidus (Müller) and Agriolimax laevis (Müller). Rarities are all small brown species with elongated spires:

Pupilla muscorum (L.), occasional; e.g. in flood debris at Cholsey!

Lauria cylindracea (da Costa), scarce; e.g. Silwood Park, E. E. Green.

Vertigo pygmaea (Drap.), occasional; e.g. at Cholsey!

V. antivertigo (Drap.), locally abundant at Cholsey!

V. substriata (Jeffreys), rare; Bucklebury Common, 1939, L. W. Grensted.

V. moulinsiana (Dupuy), rare; Stratfieldsaye, J. B. Hall.

Miscellaneous habitats

Molluscs associated with gardens include the large Helix aspersa Müller, which is often found well away from gardens, as well as the cellar or area snail, Oxychilus draparnaldi (Beck). The slugs Milax sowerbyi (Ferussac) and Limax flavus L. are scarce in gardens (Hall), and the carniverous slugs of the genus Testacella have not been noted. All these probably require a somewhat higher temperature than can be found in open country.

Species of stone walls are absent near Reading. Pyramidula rupestris (Drap.), abundant in the Cotswolds, is not recorded, and the single record of Vertigo pusilla Muller from Hurley is doubtful.

Freshwater species

More or less common species, recorded from the Thames (T), Loddon (L) and Kennet (K), include Theodoxus fluviatilis (L.) (T,K), Viviparus viviparus (L.) (T, K,), Valvata cristata Müller (T), V. piscinalis (Müller) (T, K,), Potamopyrgus jenkinsi (Smith) (T, K, L), Bithynia tentaculata (L.) (T, K, L), B. leachi (Sheppard) (T), Lymnaea stagnalis (L.) (T, K), L. pereger Müller (T, K, L), Acroloxus lacustris (L.) (T, K, L), Ancylus fluviatilis (Müller) (T, L), Planorbis carinatus Müller (T, K, L), P. planorbis (L.) (T), P. vortex (L.) (T, K), P. leucostoma Millet (=spirorbis L.) (T, K, L), P. albus Müller (T, K, L), P. acronicus Férussac (T, L), P. crista (L.) (L), P. contortus (L.) (T, K), Unio pictorum (L.) (T, K), U. tumidus Philipsson (T, K, L), Anodonta anatina (L.) (T, K, L),

Sphaerium rivicola (Lamarck) (T, L), S. corneum (L.) (T, K, L), Pisidium amnicum (Muller) (T, K, L), P. casertanum (Poli) (T, L), P. subtruncatum Malm (T, L), P. supinum Schmidt (T), P. milium Held (T), P. henslowanum (Sheppard) (T, L), P. nitidum Jenyns (T, L), P. moitessierianum Paladilke (T, L) and P. tenuilineatum Stelfox (T, L).

Viviparus contectus appears to be rare, its nearest record being Whitebrook Common. The larger Lymnaea sp., such as L. truncatula (Müller), L. palustris (Müller) and L. auricularia (L.), prefer eutrophic pools and ditches to river habitats. Anodonta complanata Rossmässler is said by Hall to be scarce in both Thames and Loddon, where I have not seen it, while Segmentina complanata (L.) and Pisidium obtusale (Lamarck) are local in weedy ponds. Planorbarius corneus (L.) (the Ramshorn) and Anodonta cygnea (L.) are eutrophic indicators, and both are abundant in Whiteknights Lake. Lymnaea glutinosa Müller and Aplexa hypnorum (L.), rare species of shallow or transient pools, have not been reported since Woodward found them near Reading in 1906. Oligotrophic pools, such as Southlake was until recently, have a distinctive fauna consisting of small, undersized shells of Physa fontinalis (L.), Planorbis albus Müller and P. crista (L.). In the same habitat may be found Sphaerium corneum (L.) and perhaps S. lacustre (Müller), though records for the second, a northern species, need checking. The tiny Pisidium pulchellum Jenyns and P. personatum Malur have only been found in Virginia Water.

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! indicates that I am responsible for the record.

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The Lepidoptera of Moor Copse Nature Reserve, Tidmarsh, Berkshire

by B.R. Baker

It all started with the rain, rain similar in quality and quantity to that which used to fall on me years ago in South-East Asia - or so it seemed to me. To be more precise, I am drawing a parallel with conditions experienced on the very, very wet night of 20th July, 1973 when our Society should have enjoyed an entomological night in Pamber Forest, Hampshire.

As we waited somewhere down in the Forest huddled beneath a dripping oak tree it became all too evident that the night's operations would have to be called off, and it was at this point in time that I let fall a chance remark to Peter and Robert about trying again sometime. It was left for them to give me a reminder during the approaching school holidays when perhaps we could arrange another excursion to compensate for the loss of play at Pamber.

In due course the expected reminder came, but rather than choosing to visit the well-worked Forest we decided to explore the B.B.O.N.T. Reserve of Moor Copse near Tidmarsh, where the owner of the ground, Mr. L.E. Trevers always welcomes Trust members.

This Reserve, encompassing some 60 acres, offers many attractions for field naturalists. It is situated very near to Reading and yet one can wander undisturbed through its woods, across its fields or along the banks of the attractive river Pang. Even if one does chance upon another visitor he, or she, will most likely be a fellow naturalist who, having made a courtesy call at Moor Copse House on arrival, will now be intent on enjoying the peace and quietness of the Reserve.

After dark there is even less chance of meeting other visitors, and it was the thought of this opportunity to be able to work with bright lights in whatsoever area we should choose that made a most attractive proposition.

Our member, Dr. B.G. Levy has already made detailed plant records of some of the habitats offered by the Reserve and it seemed likely that such contrasting areas as damp alder copses, willow swamps, dry brackeny clearings or flowery river banks would hold an interesting moth population.

Our first night operation was undertaken on 24th August, 1973 when we set up the portable generator amongst a dense growth of Pond Sedge. That night we recorded only 20 different species of moths - but in so doing we doubled the number of species listed from Moor Copse. Our enthusiasm was kindled and we devised a plan which we hoped would allow us to work the Reserve on each Friday evening during the 'flying season' extending over a period of one year.

By using a collapsible wheelbarrow to transport the generator we deemed that it should be possible to sample at least two contrasting habitats on each visit. Grafted on to this plan of campaign was Mr. Trever's welcome offer that we might plug in a static moth trap to the electric supply at his office which overlooks the grazing field in the north-east corner of the Reserve.

These plans were put into operation on the following Friday

evening, 31st August when, during the course of a leisurely two-hour supper taken on the banks of the river Pang, the lamp attracted streams of Feathered Gothics and Setaceous Hebrew Characters down on to the sheets spread out as a landing ground. The fish must have been quite confused by such a concourse of 'flies' all 'out of season'. Later that night, the lamp lit up the woodland cross-rides near the bracken patch and finally we ended up by the office at 01.10 hours.

Phillip joined the labour force the Friday following and remained with the team until we completed our tour of duty at the end of the following July.

As the weeks passed, the number of moths recorded on each visit dwindled until a 'low' in late November convinced us that it would be politic to await new awakenings in early Spring. Nevertheless, January 19th brought forth our first Pale Brindled Beauty together with a spate of Early Moths who were braving the chill winter winds which were rustling the spikey, leafless hawthorns along the edge of the 17-Acre.

By late March, we were back in full operation again - the sallows were in full bloom, the woods smelt wonderfully fresh and it was very good to be alive!

A week later, just after 20.45 hours the generator went on strike, and what had seemed to be a promising night's work was suddenly halted. In the event it may have been a blessing in disguise for we took to sampling the large, yellow-headed group of sallows out amongst the bracken, and it was then that we discovered that the White Marked Moth was by no means a rarity at Moor Copse. By crawling under the sallow bushes we were able to cover the ground under the trees with an adequate area of once white sheeting, and then, all that was required was a gentle shaking of the branches overhead so as to dislodge the hordes of feasting moths. Down they came upon the sheets which we had illuminated by our pressure lamps - a bustling throng of Common Quakers, Red Chestnuts, Hebrew Characters, Satellites, Twin-spot Quakers and, the prize of the night - a dozen or so White Marked.

During April, whilst the blue light was left to illuminate the rippling Pang, we would sortie half a mile of river bank guided by the rays of our Tilley lamps. Eyes, sharper than mine, soon discovered quantities of furry little Scarlet Tiger caterpillars feeding amongst the new growths of comfrey leaves. Here and there would also be a handsome Drinker Moth larva, whilst the grasses of the 5-acre field were festooned with many caterpillars of the Square Spot Rustic.

At the end of April a welcome visitor took up residence just across the road from the office and in the early hours of many a spring morning we would be examining the contents of the light-trap to a background of nightingale song.

At dusk on two successive Fridays roding Woodcock flew over the 5-Acre, and much later on one of these nights we stealthily played a torch upon a small hole cut ridiculously low in a birch trunk and were rewarded with a brief close-up of a Lesser-Spotted Woodpecker.

By making Friday a regular visiting night we were not always able to take advantage of those warm, muggy weather conditions which foretell optimum insect activity. Nevertheless, during May we averaged 30

different species of macro-Lepidoptera per visit, rising to 70 in June and dropping to 62 in July.

The highest number recorded on any one visit was 90 on the warm night of 21st/22nd June, but our Society was favoured with equally excellent weather conditions for their nocturnal excursion on 26th July when we were able to stage a concourse comprising 80 different species.

There was an unusual prelude to this night's visit when some of our members became part-time cowboys and gave valuable assistance in rounding up a troublesome herd which had broken through one of the Reserve's fences.

The detailed list of species that follows this introduction is offered merely as a basis for further recording. It has many obvious deficiencies, but in gathering the records of the 286 species it has also shown us that we have some quite notable Lepidoptera breeding on Reading's doorstep.

Of especial interest we would itemise the following species:-

Large Twin-spot Carpet	Regularly recorded during July.
Water Carpet	Many noted; end of March until mid-May.
Lunar Thorn	Two only; both on 21st June.
Four-dotted Footman	Once on 5th July, presumably a wanderer from the nearest heathland.
Scarlet Tiger	Colonial on the banks of the river Pang.
White Marked	A regular visitor to sallow and light in April.
Waved Black	Once only on the occasion of the Society's visit on 26th July. Larva a fungus feeder on fallen trunks - needs further investigation.

Our junior members, Peter Cuss, Philip Hooper and Robert Wood merit my thanks and our final remark must be to offer especial thanks to Mr. Lewis Trevers. Not only has he given every assistance for our work at Moor Copse, but his was the original suggestion that opened the way to the formation of the entire Reserve.

AN INTERIM LIST OF THE LEPIDOPTERA OF MOOR COPSE NATURE RESERVE

Nomenclature as per Kloet and Hincks Check List of British Insects Second Edition (Revised) December, 1972

HEPIALIDAE

Hepialus humuli (L.)	Ghost Swift
H. hecta (L.)	Gold Swift
H. lupulinus (L.)	Common Swift

COSSIDAE

Zeuzera pyrina (L.)	Leopard Moth

HESPERIIDAE

Thymelicus sylvestris (Poda)	Small Skipper
Ochlodes venata (Bremer and Grey)	Large Skipper

PIERIDAE

Gonepteryx rhamni (L.)	Brimstone
Pieris brassicae (L.)	Large White
P. rapae (L.)	Small White
P. napi (L.)	Green-veined White
Anthocharis cardamines (L.)	Orange-tip

LYCAENIDAE

Quercusia quercus (L.)	Purple Hairstreak
Strymonidia w-album (Knoch)	White-letter Hairstreak
Lycaena phlaeas (L.)	Small Copper
Polyommatus icarus (Rott.)	Common Blue

NYMPHALIDAE

Ladoga camilla (L.)	White Admiral
Vanessa atalanta (L.)	Red Admiral
Cynthia cardui (L.)	Painted Lady
Aglais urticae (L.)	Small Tortoiseshell
Inachis io (L.)	Peacock
Polygonia c-album (L.)	Comma

SATYRIDAE

Pararge aegeria (L.)	Speckled Wood
Lasiommata megera (L.)	Wall Brown
Pyronia tithonus (L.)	Gatekeeper
Maniola jurtina (L.)	Meadow Brown
Coenonympha pamphilus (L.)	Small Heath
Aphantopus hyperantus (L.)	Ringlet

LASIOCAMPIDAE

Poecilocampa populi (L.)	December Moth
Malacosoma neustria (L.)	Lackey
Philudoria potatoria (L.)	Drinker

DREPANIDAE

Drepana binaria (Hufn.)	Oak Hook-tip
D. falcataria (L.)	Pebble Hook-tip
Falcaria lacertinaria (L.)	Scalloped Hook-tip
Cilix glaucata (Scop.)	Chinese Character

THYATIRIDAE

Thyatira batis (L.)	Peach Blossom
Habrosyne pyritoides (Hufn.)	Buff Arches
Tethea ocularis (L.)	Figure of Eighty
Cymatophorima diluta (D. & S.)	Lesser Lutestring

GEOMETRIDAE

Alsophila aescularia (D. & S.)	March Moth
Geometra papilionaria (L.)	Large Emerald
Comibaena pustulata (Hufn)	Blotched Emerald
Hemithea aestivaria (Hubn.)	Common Emerald
Jodis lactearia (L.)	Little Emerald
Cyclophora punctaria (L.)	Blood Vein
Scopula floslactata (Haw.)	Cream Wave
Idaea biselata (Hufn.)	Small Fan-footed Wave

Idaea emarginata (L.)	Small Scallop
I. aversata (L.)	Riband Wave
I. straminata (Borkh.)	Plain Wave
Xanthorhoe designata (Hufn.)	Flame Carpet
X. spadicearia (D. & S.)	Red Twin-spot Carpet
X. ferrugata (Clerck)	Dark-barred Twin-spot Carpet
X. quadrifasiata (Clerck)	Large Twin-spot Carpet
X. montanata (D. & S.)	Silver-ground Carpet
X. fluctuata (L.)	Garden Carpet
Scotopteryx chenopodiata (L.)	Shaded Broad-bar
Epirrhoe alternata (Mull., O.F.)	Common Carpet
Camptogramma bilineata (L.)	Yellow Shell
Larentia clavaria (Haw.)	Mallow
Anticlea badiata (D. & S.)	Shoulder Stripe
A. derivata (D. & S.)	Streamer
Mesoleuca albicillata (L.)	Beautiful Carpet
Lampropteryx suffumata (D. & S.)	Water Carpet
Eulithis testata (L.)	Chevron
E. mellinata (Fabr.)	Currant Spinach
E. pyraliata (D. & S.)	Barred Straw
Ecliptopera silaceata (D. & S.)	Small Phoenix
Chloroclysta citrata (L.)	Dark Marbled Carpet
C. truncata (Hufn.)	Common Marbled Carpet
Cidaria fulvata (Forst.)	Barred Yellow
Plemyria rubiginata (D. & S.)	Blue-bordered Carpet
Thera obeliscata (Hubn.)	Grey Pine Carpet
Electrophaes corylata (Thun.)	Broken-barred Carpet
Colostygia pectinataria (Knoch)	Green Carpet
Hydriomena furcata (Thun.)	July Highflyer
H. impluviata (D. & S.)	May Highflyer
Melanthia procellata (D. & S.)	Pretty Chalk Carpet
Philereme vetulata (D. & S.)	Brown Scallop
Epirrita dilutata (D. & S.)	November Moth
E. autumnata (Borkh.)	Autumnal Moth
Operophtera brumata (L.)	Winter Moth
Perizoma alchemillata (L.)	Small Rivulet
P. albulata (D. & S.)	Grass Rivulet
P. didymata (L.)	Twin-spot Carpet
Eupithecia tenuiata (Hubn.)	Slender Pug
E. haworthiata Doubl.	Haworth's Pug
E. pulchellata Steph.	Foxglove Pug
E. exiguata (Hubn.)	Mottled Pug
E. venosata (Fabr.)	Netted Pug
E. satyrata (Hubn.)	Satyr Pug
E. assimilata Doubl.	Currant Pug
E. vulgata (Haw.)	Common Pug
E. subfuscata (Haw.)	Grey Pug
E. abbreviata Steph.	Brindled Pug
E. lariciata (Freyer)	Larch Pug
Chloroclystis v-ata (Haw.)	V Pug
C. rectangulata (L.)	Green Pug
Euchoeca nebulata (Scop.)	Dingy Shell
Asthena albulata (Hufn.)	Small White Wave
Hydrelia flammeolaria (Hufn.)	Small Yellow Wave
Minoa murinata (Scop.)	Drab Looper
Lobophora halterata (Hufn.)	Seraphim
Trichopteryx carpinata (Borkh.)	Early Tooth-striped
Pteraphera pteryx sexalata (Retz.)	Small Seraphim
Abraxas grossulariata (L.)	Magpie

Lomaspilis marginata (L.)	Clouded Border
Ligdia adustata (D. & S.)	Scorched Carpet
Semiothisa liturata (Clerck)	Tawny-barred Angle
S. clathrata (L.)	Latticed Heath
Petrophora chlorosata (Scop.)	Brown Silver-line
Plagodis dolabraria (L.)	Scorched Wing
Opisthograptis luteolata (L.)	Brimstone Moth
Epione repandaria (Hufn.)	Bordered Beauty
Apeira syringaria (L.)	Lilac Beauty
Ennomos alniaria (L.)	Canary-shouldered Thorn
E. fuscantaria (Haw.)	Dusky Thorn
E. erosaria (D. & S.)	September Thorn
Selenia dentaria (Fabr.)	Early Thorn
S. lunularia (Hubn.)	Lunar Thorn
S. tetralunaria (Hufn.)	Purple Thorn
Odontopera bidentata (Clerck)	Scalloped Hazel
Crocallis elinguaria (L.)	Scalloped Oak
Ourapteryx sambucaria (L.)	Swallow-tail Moth
Colotois pennaria (L.)	Feathered Thorn
Apocheima pilosaria (D. & S.)	Pale Brindled Beauty
Lycia hirtaria (Clerck)	Brindled Beauty
Biston strataria (Hufn.)	Oak Beauty
B. betularia (L.)	Peppered Moth
Agriopis leucophaearia (D. & S.)	Spring Usher
A. aurantiaria (Hubn.)	Scarce Umber
A. marginaria (Fabr.)	Dotted Border
Erannis defoliaria (Clerck)	Mottled Umber
Menophra abruptaria (Thun.)	Waved Umber
Peribatodes rhomboidaria (D. & S.)	Willow Beauty
Alcis repandata (L.)	Mottled Beauty
Serraca punctinalis (Scop.)	Pale Oak Beauty
Ectropis bistortata (Goeze)	Engrailed
E. crepuscularia (D. & S.)	Small Engrailed
E. consonaria (Hubn.)	Square Spot
E. extersaria (Hubn.)	Brindled White-spot
Aethalura punctulata (D. & S.)	Grey Birch
Cabera pusaria (L.)	Common White Wave
C. exanthemata (Scop.)	White Wave
Lomographa bimaculata (Fabr.)	White Pinion-spotted
L. temerata (D. & S.)	Clouded Silver
Theria rupicapraria (D. & S.)	Early Moth
Campaea margaritata (L.)	Light Emerald

SPHINGIDAE

Mimas tiliae (L.)	Lime Hawk
Laothoe populi (L.)	Poplar Hawk
Deilephila elpenor (L.)	Large Elephant Hawk

NOTODONTIDAE

Phalera bucephala (L.)	Buff Tip
Cerura vinula (L.)	Puss Moth
Harpyia furcula (Clerck)	Sallow Kitten
Stauropus fagi (L.)	Lobster Moth
Notodonta dromedarius (L.)	Iron Prominent
Eligmodonta ziczac (L)	Pebble Prominent
Pheosia gnoma (Fabr.)	Lesser Swallow Prominent
P. tremula (Clerck)	Swallow Prominent

Ptilodon capucina (L.)	Coxcomb Prominent
Pterostoma palpina (Clerck)	Pale Prominent
Drymonia dodonaea (D. & S.)	Marbled Brown
D. ruficornis (Hufn.)	Lunar Marbled Brown
Clostera curtula (L.)	Chocolate Tip
Diloba caeruleocephala (L.)	Figure of Eight Moth

LYMANTRIIDAE

Dasychira pudibunda (L.)	Pale Tussock
Euproctis similis (Fuessly)	Gold Tail

ARCTIIDAE

Cybosia mesomella (L.)	Four-dotted Footman
Eilema griseola (Hubn.)	Dingy Footman
E. complana (L.)	Scarce Footman
E. lurideola (Zinck.)	Common Footman
Arctia caja (L.)	Garden Tiger
Spilosoma lubricipeda (L.)	White Ermine
S. luteum (Hufn.)	Buff Ermine
Diaphora mendica (Clerck)	Muslin Moth
Phragmatobia fuliginosa (L.)	Ruby Tiger
Callimorpha dominula (L.)	Scarlet Tiger

NOLIDAE

Nola cucullatella (L.)	Short-cloaked Moth

NOCTUIDAE

Agrotis segetum (D. & S.)	Turnip Moth
A. exclamationis (L.)	Heart and Dart
A. puta (Hubn.)	Shuttle-shaped Dart
Axylia putris (L.)	Flame
Ochropleura plecta (L.)	Flame Shoulder
Noctua pronuba (L.)	Large Yellow Underwing
N . comes (Hubn.)	Lesser Yellow Underwing
N. fimbriata (Schreber)	Broad-bordered Yellow Underwing
N. janthina (D. & S.)	Lesser Broad-bordered Yellow Underwing
Graphiphora augur (Fabr.)	Double Dart
Diarsia mendica (Fabr.)	Ingrailed Clay
D. brunnea (D. & S.)	Purple Clay
D. rubi (Vieweg)	Small Square Spot
Xestia c-nigrum (L.)	Setaceous Hebrew Character
X. ditrapezium (D. & S.)	Triple-spotted Clay
X. triangulum (Hufn.)	Double Square-spot
X. baja (D. & S.)	Dotted Clay
X. xanthographa (D. & S.)	Square Spotted Rustic
Naenia typica (L.)	Gothic
Anaplectoides prasina (D. & S.)	Green Arches
Cerastis rubricosa (D. & S.)	Red Chestnut
C. leucographa (D. & S.)	White Marked
Hada nana (Hufn.)	Shears
Polia bombycina (Hufn.)	Pale Shining Brown
Melanchra persicariae (L.)	Dot Moth
Lacanobia thalassina (Hufn.)	Pale-shouldered Brocade
L. oleracea (L.)	Bright-line Brown-eye

Ceramica pisi (L.)	Broom Moth
Hadena bicruris (Hufn.)	Lychnis
Tholera decimalis (Poda)	Feathered Gothic
Orthosia cruda (D. & S.)	Small Quaker
O. populeti (Fabr.)	Lead-coloured Drab
O. stabilis (D. & S.)	Common Quaker
O. incerta (Hufn.)	Clouded Drab
O. munda (D. & S.)	Twin-spotted Quaker
O. gothica (L.)	Hebrew Character
Mythimna conigera (D. & S.)	Brown-line Bright-eye
M. ferrago (Fabr.)	The Clay
M. impura (Hubn.)	Smoky Wainscot
M. pallens (L.)	Common Wainscot
M. comma (L.)	Shoulder-striped Wainscot
Cucullia umbratica (L.)	Shark
Cleoceris viminalis (Fabr.)	Minor Shoulder-knot
Brachionycha sphinx (Hufn.)	Sprawler
Xylocampa areola (Esp.)	Early Grey
Allophyes oxyacanthae (L.)	Green-brindled Crescent
Eupsilia transversa (Hufn.)	Satellite
Conistra vaccinii (L.)	Chestnut
C. ligula (Esp.)	Dark Chestnut
Agrochola circellaris (Hufn.)	Brick
A. lota (Clerck)	Red-line Quaker
A. macilenta (Hubn.)	Yellow-line Quaker
A. litura (L.)	Brown-spot Pinion
A. lychnidis (D. & S.)	Beaded Chestnut
Atethmia centrago (Haw.)	Centre-barred Sallow
Omphaloscelis lunosa (Haw.)	Lunar Underwing
Xanthia togata (Esp.)	Pink-barred Sallow
X. icteritia (Hufn.)	Common Sallow
Acronicta megacephala (D. & S.)	Poplar Grey
A. leporina (L.)	Miller Moth
A. psi (L.)	Grey Dagger
A. rumicis (L.)	Knotgrass
Amphipyra pyramidea (L.)	Copper Underwing
A. tragopoginis (Clerck)	Mouse
Rusina ferruginea (Esp.)	Brown Rustic
Thalpophila matura (Hufn.)	Straw Underwing
Euplexia lucipara (L.)	Small Angle Shades
Phlogophora meticulosa (L.)	Angle Shades
Enargia ypsillon (D. & S.)	Dingy Shears
Cosmia affinis (L.)	Lesser-spotted Pinion
C. trapezina (L.)	Dun-bar
C. pyralina (D. & S.)	Lunar-spotted Pinion
Apamea monoglypha (Hufn.)	Dark Arches
A. lithoxylaea (D. & S.)	Light Arches
A. sublustris (Esp.)	Reddish Light Arches
A. crenata (Hufn.)	Clouded-bordered Brindle
A. remissa (Hubn.)	Dusky Brocade
A. anceps (D. & S.)	Large Nutmeg
A. sordens (Hufn.)	Rustic Shoulder-knot
A. ophiogramma (Esp.)	Double Lobed
Oligia strigilis (L.)	Marbled Minor
O. latruncula (D. & S.)	Tawny Marbled Minor
O. fasciuncula (Haw.)	Middle-barred Minor
Mesapamea secalis (L.)	Common Rustic
Photedes minima (Haw.)	Small Dotted Buff
P. pygmina (Haw.)	Small Wainscot

Luperina testacea (D. & S.)	Flounced Rustic
Hydraecia micacea (Esp.)	Rosy Rustic
Gortyna flavago (D. & S.)	Frosted Orange
Nonagria typhae (Thun.)	Bullrush Wainscot
Charanyca trigrammica (Hufn.)	Treble Lines
Hoplodrina alsines (Brahm)	Uncertain Moth
H. blanda (D. & S.)	The Rustic
Caradrina morpheus (Hufn.)	The Mottled Rustic
Pseudoips fagana (Fabr.)	Green Silver Lines
Colocasia coryli (L.)	Nut-tree Tussock
Diachrysia chrysitis (L.)	Burnished Brass
Autographa gamma (L.)	Silver Y
A. pulchrina (Haw.)	Beautiful Golden Y
A. jota (L.)	Plain Golden Y
Abrostola triplasia (L.)	Spectacle
Lygephila pastinum (Treitschke)	Blackneck
Scoliopteryx libatrix (L.)	Herald Moth
Laspeyria flexula (D. & S.)	Beautiful Hook-tip
Rivula sericealis (Scop.)	Straw Dot
Parascotia fuliginaria (L.)	Waved Black
Hypena proboscidalis (L.)	Snout
Polypogon tarsipennalis (Treitschke)	Fan-foot Snout
P. nemoralis (Fabr.)	Small Fan-foot

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The Vanishing Flora of the Neighbourhood of Reading.

(Reminiscences of a Botany Teacher)

by A. G. Erith

When I came to Reading University over fifty years ago to teach Agricultural Botany I did not have to travel far to find plants for students to study in the practical classes which followed my lectures.

Nor was it difficult to take classes of students, either on foot, or by using bicycles for transport, to interesting areas where they could study the plants growing in their natural habitats.

For instance, when we were studying the Buttercup family, Ranunculaceae, it was possible to find the three commonest species of Ranunculus viz. Bulbous, Meadow and Creeping Buttercups (respectively R. bulbosus, R. acris, and R. repens) on roadsides or in meadows within a very short distance of the London Road and indeed, on the University and other lawns, which were not in those days subjected to the chemical weed control which prevails at the present time. R. ficaria (the Lesser Celandine) was also common, and the less common species, R. auricomus (Goldilocks) grew on the side of a ditch on Shinfield Road near the University "Lane End" Farm. On the farm itself there was a fine old barn with a pond at its side, on the banks of which the poisonous Celery-leaved Buttercup (R. sceleratus) flourished.

In some of the arable fields, the annual Corn Crowfoot (R. arvensis) and some Mouse-tail (Myosurus minimus) could usually be found. Indeed the latter grew so abundantly in one part of the farm lane leading from Cutbush Lane to the River Loddon, that it gave the appearance, from a short distance, of a lawn.

On one side of this farm lane, there was a copse in which the Early Purple Orchid (Orchis mascula) and Moschatel (Adoxa moschatellina) were abundant, while in the meadows by the River Loddon, to which the lane led, one could always find the Green-winged Orchid (Orchis morio) and occasionally Fritillary (Fritillaria meleagris).

Alas! the habitat of these plants has long since been destroyed; Shinfield Road has been widened and the ditches filled in; the barn on the farm has been demolished and the pond has vanished. Herbicides have eradicated R. arvensis and M. minimus from the arable land, and the M 4 motorway cuts through the farm and under Cutbush Lane continuing very close to the farm lane in which the Mousetail once flourished. Several years ago pigs were turned into the copse and they rooted up the orchids and all other plants. The trees have since been cut down. The meadows by the river were drained and used for short leys and other crops, which ousted the Green-winged Orchids and Fritillaries.

Drainage and the clearance of bushes and scrub was also carried out on a meadow on the other side of Cutbush Lane almost opposite the Shinfield Grange Gardens, a meadow in which I once found Thrumwort (Damasonium alisma) and other comparatively rare plants.

Similar alterations to the environment, with the subsequent loss of the flora, are apparent in other localities in the vicinity of Reading. One which comes to mind is the area on either side of the road leading from the Henley Road to Sonning Bridge. In the damp meadows on the left of this road we could always find plenty of Meadow Rue (Thalictrum flavum), Guelder Rose (Viburnum opulus) and Meadow Cranesbill (Geranium pratense) while in the ditch on the right hand side of the road, the Water Violet (Hottonia palustris) was growing.

The meadows have long since been drained and cultivated, resulting in the disappearance of the native species, while gravel digging on the other side of the road has caused changes in the flora and the Water Violet has vanished.

If one continued on the road to Henley instead of taking the turn to Sonning one came to a chalk pit with an interesting flora, which included the uncommon Yellow Vetchling (Lathyrus aphaca), in which the leaves of the mature plants are unusual in possessing well developed stipules and tendrils but no leaflets.

In order to see a typical chalk-down flora we had to go no further than Mapledurham, for if we turned right off the road leading from the B4526 road to the village, we found ourselves on a footpath and cycle track leading to Hardwick, with a down on our right and arable fields on our left. On the downs we could find most of the characteristic Chalk-down plants including the Common Rockrose (Helianthemum chamaecistus), Purging Flax (Linum catharticum), Horseshoe Vetch (Hippocrepis comosa), Yellow wort (Blackstonia perfoliata), Milkwort (Polygala vulgaris), Hound's Tongue (Cynoglossum officinale) (this was in abundance around rabbit burrows), Fly Orchid (Orchis insectifera) and Autumn Lady's Tresses (Spiranthes spiralis), while in

the arable fields Wild Candytuft (Iberis amara) was abundant. Some years ago the down was ploughed up with the resulting disappearance of the native plants, while the arable fields were treated with herbicides which destroyed the Candytuft and many other typical chalk-land weeds.

Included in our curriculum was the study of weeds of arable fields and grassland and forty or fifty years ago a great number of plant species, representing several different Botanical families occurred as weeds of farm land. On the arable fields of the University farm and on other farms within a radius of five miles from Reading the following weeds could be found: Creeping Buttercup, two species of poppy (Papaver), Fumitory (Fumaria officinalis), Charlock (Sinapis arvensis), Wild Radish (Raphanus raphanistrum), Hedge Mustard (Sisymbrium officinale), Shepherd's Purse (Capsella bursa-pastoris), Field Pepperwort (Lepidium campestre), Penny Cress (Thlaspi arvense), Swine-cress (Coronopus squamatus), Heartsease (Viola arvensis), Bladder, White and Red Campions (Silene vulgaris, S. alba and S. dioica), Corn Cockle (Agrostemma githago), Chickweed (Stellaria media), Mouse-eared Chickweed (Cerastium arvense), Spurrey (Spergula arvensis), Annual Knawel (Scleranthus annuus), Dove's Foot (Geranium molle) and other Cranesbills, Silver Weed (Potentilla anserina), Creeping Cinquefoil (P. reptans), Shepherd's Needle (Scandix pecten-veneris), Fool's Parsley (Aethusa cynapium), Cleavers (Galium aparine), Field Madder (Sherardia arvensis), Creeping Thistle (Cirsium arvense), Coltsfoot (Tussilago farfara), Corn Chamomile (Anthemis arvensis), Stinking Mayweed (A. cotula), Corn Marigold (Chrysanthemum segetum), Marsh Cudweed (Gnaphalium uliginosum), Annual and Perennial Sow-Thistles (Sonchus oleraceus and S. arvensis), Field Bindweed (Convolvulus arvensis), Corn Gromwell (Lithospermum arvense), Field Forget-me-not (Myosotis arvensis), Black Nightshade (Solanum nigrum), Wild Antirrhinum (Antirrhinum orontium), Narrow-leaved and Broad-leaved Plantains (Plantago lanceolata and P. major), Corn Mint (Mentha arvensis), Hemp Nettle (Galeopsis tetrahit), Red and White Dead Nettles (Lamium purpureum and L. album), Henbit (L. amplexicaule), Scarlet Pimpernel (Anagallis arvensis), Knotgrass (Polygonum aviculare), Persicaria (P. persicaria), Black Bindweed (P. convolvulus), Fat-Hen or Goosefoot (Chenopodium album), Petty Spurge (Euphorbia peplus), Sun Spurge (E. helioscopia), Dwarf Spurge (E. exigua), Great and Small Stinging Nettles (Urtica dioica and U. urens), Common Horsetail (Equisetum arvense) and various grasses, the most troublesome being Couch Grass (Agropyron repens), Bulbous Oat-grass (Arrhenatherum elatius) and Wild Oat (Avena fatua).

On Grassland, weeds occurring frequently included the three common species of Buttercup mentioned previously, Lesser Celandine, Lady's Smock (Cardamine pratensis), Campions, Ragged Robin (Lychnis flos-cuculi), Mouse-eared Chickweed, Cranesbills, Dyer's Greenweed (Genista tinctoria), Rest Harrow (Ononis repens), Creeping Cinquefoil, Agrimony (Agrimonia eupatoria), Salad Burnet (Poterium sanguisorba), Earthnut (Conopodium majus), Wild Carrot (Daucus carota), Field Scabious (Knautia arvensis), Devil's Bit Scabious (Succisa pratensis), Burdock (Arctium lappa), Knapweed (Centaurea nigra), various Thistles, Coltsfoot, Ox-eye Daisy (Chrysanthemum leucanthemum), Ragwort (Senecio jacobaea), Cat's Ear (Hypochaeris radicata), two or three species pf Hawkbit (Leontodon), Goat's Beard (Tragopogon pratensis), two or three species of Hawkweed (Hieracium), Comfrey (Symphytum officinale), Narrow-leaved and Broad-leaved Plantains, Hoary Plantain (Plantago media), various species of Speedwell (Veronica), Self Heal (Prunella vulgaris), Docks and Sorrels (Rumex spp.), Wild Onion

(Allium vineale), Rushes (Juncus spp.) and Grasses of no agricultural value, e.g. Creeping Soft Grass (Holcus mollis), Quaking Grass (Briza media), Soft Brome Grass (Bromus mollis) and Sterile Brome Grass (Anisantha sterilis).

In order to improve the yield of the crops which they grew, farmers made efforts to eradicate these weeds but until the beginning of this century, only mechanical methods were used to this end, and as these did not effect total eradication it was still possible to find several weed species. Gradually, methods of destruction by chemicals were tried. At first only a very few herbicides were known and in a book entitled 'Common Weeds of the Farm and Garden' by Harold C. Long, published in 1910 it is stated that the sulphates of iron and copper may be regarded as the only materials at present of practical importance for the destruction of weeds among corn and other crops. However, many more were soon discovered, and better and bigger machinery for their application was invented and used more and more widely with the result that during recent years farmland has become almost free from weeds and much less interesting to the botanist!

What has happened to all the native species? Some have taken refuge in the few hedges that still remain and on the narrow verges of fields, but many have disappeared. This summer I searched for plants on stubble remaining after cereals had been harvested but so effective had been the action of the herbicides that I found only a very few plants of Knot-grass, Scarlet Pimpernel and Fat-Hen. These were on the verge of a field near a gateway.

While realising the necessity for increased production of food it is sad to see our native flora diminishing so drastically, and were I still teaching Botany I should have to travel further and further still from Reading to find many of our indigenous plants.

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The destruction of the Carex montana site at Wokingham

by H. J. M. Bowen

The construction of a new roundabout near Wokingham has probably destroyed the only habitat for the rare sedge Carex montana L. in Berkshire. Last November I happened to notice that the site was in danger, and by arrangement with the Site Engineer I was given a week's grace to save what I could before the bulldozers moved in. Unfortunately the plant was quite invisible in the closely grazed turf at that time of year. However, with the help of some enthusiastic third-year Botany students, I moved about 12 square metres of turf to the new Botanic Garden in Whiteknights Park. This June, at least one good clump of the plant flowered there, and it is proposed to send offsets to the Botanic Garden at Cambridge and perhaps elsewhere. It is not impossible that a few clumps may remain at the original site, but more than 90% of the habitat has been bodily removed by bulldozers. Carex montana is now confined to twelve Grid squares in Britain, and the nearest locality is now on the Mendips. Other plants of old grassland, destroyed with the Carex, included Dyers Greenweed (Genista tinctoria),

Devils Bit (Succisa pratensis), Tormentil (Potentilla erecta), Betony (Betonica officinalis), Parsley Piert (Aphanes arvensis), Speedwell (Veronica officinalis), Stitchwort (Stellaria graminea), Sneezewort (Achillea ptarmica), the sedges Carex flacca and C. hirta, and the grass Sieglingia decumbens: the mosses Dicranella heteromalla, Polytrichum formosum, Pottia lanceolata, Pseudoscleropodium purum and Rhytidiadelphus squarrosus: the lichens Lecidea granulosa and L. scalaris (on old wood): and the fungi Mycena fibula and Russula parazurea.

The moral for conservationists would seem to be to maintain constant vigilance in the field, and to liaise with County Planning Authorities so as to avert threats to the local flora in good time. With the projected doubling of the population of the Reading area during the next 25 years, many other local sites are sure to disappear, especially those at the edges of existing towns.

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Fungi found in Savernake Forest, 21.9.74.

by B. A. Bowen

Savernake Forest is one of the few remaining large areas of ancient woodland left in the south of England. The most interesting and characteristic fungal habitat in Savernake is the leaf litter beneath the large and very old beech trees, most of which now only surround Grand Avenue, although there are other very good areas of beech woodland within the Forest.

A widespread variety of fungi, characteristic of the Forest, was found on the Society's excursion in late September. Altogether, about a hundred species were found although the total macromycete flora of Savernake now amounts to some 750 species. A few comparative rarities were found and the most interesting of these are marked with an asterisk in the list. Possibly the best finds of the day were Russula farinipes, Lepiota konradii and Cantharellus infundibuliformis, all of which are new to the Forest.

BASIDIOMYCOTINA

HYMENOMYCETES

Agaricales

Amanita fulva
muscaria
rubescens

Armillaria mellea

Boletus chrysenteron (ss. Watling)
spadiceus (ss. Watling) *

Cantharellus clavipes
dealbata
geotropa
infundibuliformis **
odora

Agaricales (cont.)

Clitocybe infundibuliformis

Collybia butyracea
confluens
dryophila
fusipes
maculata
peronata
tesquorum **

Conocybe tenera s. lat

Coprinus atramentarius
comatus

Agaricales (cont.)

Coprinus hiascens *
micaceus
plicatilis

Cortinarius ? pseudosalor *

Entoloma sinuatum *

Galerina tibiicystis **

Hebeloma crustuliniforme

Hygrophorus cantharellus **
nigrescens

Hypholoma fasciculare

Inocybe geophylla

Laccaria amethystina
laccata
proxima

Lacrymaria velutina

Lactarius blennius
quietus
subdulcis

Leccinum scabrum (ss. Watling)

Lepiota cristata
konradii *

Lyophyllum decastes

Mycena galericulata
galopus
gypsea *
inclinata
swartzii *
vitilis

Oudemansiella mucida
radicata

Panaeolina foenisecii

Paxillus involutus

Pluteus cervinus

Psathyrella hydrophilum

Russula atropurpurea
cyanoxantha
delica

Agaricales (cont.)

Russula farinipes **
fellea
fragilis
heterophylla *
laurocerasi *
lutea *
mairei
nigricans
ochroleuca
parazurea *
vesca
virescens *

Tricholoma argyraceum
carneum *

Tubaria conspersa *
furfuracea

Aphyllophorales

Clavulina cristata

Coriolus versicolor

Daedalea quercina

Ganoderma applanatum

Meripilus giganteus

Phlebia merismoides

Ramaria stricta *

Stereum hirsutum

Dacrymycetales

Dacrymyces stillatus

GASTEROMYCETES

Lycoperdales

Calvatia coelatum *

Lycoperdon perlatum
pyriforme

Vascellum depressum

Phallales

Phallus impudicus

ASCOMYCOTINA

DISCOMYCETES

Pezizales

Helvella crispa
Peziza badia *
vesiculosa

PYRENOMYCETES

Sphaeriales

Diatrype disciformis
Hypoxylon fragiforme

Sphaeriales (cont.)

Nectria cinnabarina
Ustulina deusta
Xylaria hypoxylon

PLECTOMYCETES

Erysiphales

Microsphaera alphitoides

Nomenclature

The authorities followed include

Dennis, R. W. G., Orton, P. D. & Hora, F. B. (1960) New Check List of British Agarics and Boleti, Trans. Br. Mycol. Soc., 43 suppl. (for Agarics).

Watling, R. (1970) Boletaceae: Gomphidiaceae: Paxillaceae, British Fungus Flora I. H.M.S.O., Edinburgh. (for Boleti)

Dennis, R. W. G. (1968) British Ascomycetes, J. Cramer (for Ascomycotina)

Ainsworth, G. C. (1971) Dictionary of the Fungi, 6th ed., C.I.M., Kew. (General).

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Report on Aston Upthorpe - 1974

by M. Sell

1974 has been a year of contrasts, both in respect of the weather, and as far as the Reserve has been concerned. A fairly major job of fencing the outside of the Reserve was carried out by a small team of B.B.O.N.T. members, together with members of the Reading and District Natural History Society, and I am very grateful for their assistance. Two full days were spent on this activity, together with some mowing, although this year the grass has needed very little attention. Previous years' mowing has now kept down the growth of Bromus erectus to such an extent that probably cutting the grass in alternate years only will suffice for conservation purposes. Another factor to be taken into account, however, will be the amount of grazing off-season by cattle allowed into the Reserve for this purpose. I reported last year that about a third of the total area had not been cut, and in fact little extra growth was noted when compared with the rest of the Reserve, which was cut in 1973.

Two or three Short-eared Owls were seen on one of the visits when fencing was carried out, and a Green Woodpecker was also seen flying past. By the end of March, ten plants of Anemone pulsatilla were seen to have buds, and by April 21st, a remarkable display of blooms was to be seen, fifty-one of which were inside the small enclosure, with thirteen further buds to come, but only thirteen flowers and three buds outside the small enclosure, many of the latter having suffered vole or mouse damage. Outside the Reserve, however, the colony above the large enclosure contained a total of ninety-one flowers and thirteen buds, most of which had been left undamaged, and, because of the longer growth of grass, had much longer stalks. Total numbers in both sites were one hundred and eighty-four, compared with ninety-seven in April 1973. At this time, Polygala calcarea was also beginning to come into flower. The colony of Primula veris was not nearly as large as last year. Even at this late date, it was possible to watch a Short-eared Owl hunting in the late afternoon, this one being an extremely pale individual.

By the beginning of May, pulsatilla was probably at its best, with a total of eighty flowers and buds in the small enclosure, forty-eight outside, but these figures were surpassed by the total of one hundred and fifty-five flowers and buds in the colony above the Reserve. The grand total of two hundred and eighty-three exceeds by quite a large margin the previous best I have known from Aston Upthorpe, and many individuals and parties took advantage of the new permit system to visit the Reserve at this time of the year to enjoy the display.

After the extremely dry and warm spring and early summer, the early plants got off to a good start, and by the beginning of June, Senecio campestris was flowering at about a normal level, plants being liberally distributed over the Reserve area. Orchis ustulata seemed to be doing far less well, however, and only nineteen flowering spikes inside the Reserve, with six outside, could be detected, even after a careful count. The prolonged dry spell had had its effect on the growth of grass, however, and cattle, put into Juniper Valley in far larger numbers than normal, had virtually cropped the whole area in record time.

By mid-July, the drought was over, but this had given way to a period of much less settled weather, with temperatures below normal, and the cattle had hardly left a blade of grass in the valley! The flora in the Reserve was also very disappointing - a very few Pyramidal Orchids (Anacamptis pyramidalis) were to be found in outlying spots, but virtually none in the Reserve itself, a very unusual situation, but one which was to prove typical of this year for Orchids in general. Only six flowering spikes of Frog Orchid (Coeloglossum viride) could be found, in two colonies of three each, but usual quantities of Candytuft (Iberis amara) and Pale Toadflax (Linaria repens) were to be seen on the approaches to the Reserve. At this time, the usual pair of Kestrels were to be seen, but no sign of any young birds. Running repairs and tensioning were done to the fencing to prevent particularly robust and frisky young cattle from entering the Reserve!

In August, flora on the Reserve was even more sparse, although there were good displays of Clustered Bellflower (Campanula glomerata) on the approaches, and some on the Reserve itself. A field near the Reserve, where a crop of lucerne was growing, produced some magnificent specimens of Night-scented Catchfly (Silene noctiflora), which had not been seen there before, but generally the flowering season for most

plants from June onwards has been poor. Stone Curlews were heard calling in mid-August, but no sound (or sight) of Quail this year on the Downs.

The Farm Manager has kindly provided some fencing with barbed wire to prevent cattle entering the Reserve from the bottom, where our efforts earlier in the year were not adequate enough to prevent determined and probably hungry cattle from getting in to sample the vegetation. Some reinforcement will be necessary during the winter to prevent these incursions at the height of the flowering season, although the damage done was slight, the weather being so dry at the beginning of the year. We had been warned that grazing this year would be much more intense than hitherto, and the fact that this coincided with reduced grass growth in the spring meant that the whole valley has now been adequately grazed for the first time in many years.

The small enclosure will also have to be re-fenced with vole - and rabbit - proof wire, as this seems to have a restricting effect on the nibbling of the buds of Pulsatilla, and also acts as a curb on over-enthusiastic human intrusion, incidentally!

Overall, apart from the outstanding success of Pulsatilla, a disappointing year, not helped by predominant weather conditions. Orchids in particular, as well as other chalk flora, have had a bad year, but one should not expect success all the time. The mowing commitment is steadily being reduced, and can now be encompassed easily within two days, the balance being carried out the following year. As mentioned last year, a measure of success is being achieved in the return of ants to previously deserted anthills, accompanied by the spread of Horseshoe Vetch (Hippocrepis comosa), the food-plant of the Chalkhill Blue Butterfly.

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Recorder's Report for Vertebrates 1973-1974

by H. H. Carter

AMPHIBIA

Triturus vulgaris (L.) Smooth Newt. A female taken on land, near Tilehurst clay pits 11.4.74.

Bufo bufo (L.) Toad. Several killed crossing road on migration at Leighton Park 23.3.74. (BTP). One dead on road in Emmer Green 27.3.74. Many spawning in a pond at Binfield Heath 5.4.74 (MJC & CW). Spawn in a garden pond at Bradfield had hatched by 20.5.74 (KP).

Rana temporaria L. Frog. Several killed on migration at Leighton Park 23.3.74 (BTP). Two clumps of spawn in the pond at Binfield Heath 5.4.74 (MJC & CW).

Dead Man's Pond, once a good locality for amphibia, has been filled in.

REPTILIA

Lacerta vivipara Jacq. Lizard. One at Aston Upthorpe Reserve 31.3.74 (BRB). One the same day on Peppard Common (KS).

Anguis fragilis L. Slow Worm. One dead on path on Compton Down 24.5.74 (KP).

Natrix natrix (L.) Grass Snake. One at Moor Copse Reserve 30.3.74 (BRB). One in Nuney Green Wood 30.4.74. Three at Woolhampton 10.9.74. A juvenile brought to the Museum 1.10.74 had very pale markings as in some of the Mediterranean races and may have been bred in captivity.

Vipera berus (L.) Adder. One seen on Bucklebury Upper Common 26.5.74 showed a black zigzag marking on a light grey background and was 300 - 400 mm (12 to 16 inches) long. (This was almost certainly a male.)

MAMMALIA

INSECTIVORA

Sorex araneus L. Shrew. One at Kidmore End 18.11.73 and two there 21.4.74. One near Sonning Common 4.5.74. One the same day at Aldermaston Soke (SYT).

Talpa europaea L. Mole. Molehills at Burghfield 29.12.73. One dead at Gallowstree Common 31.3.74. One dead at Manor Farm, hanging in a bush about 1.2 metres (4 feet) from the ground 2.4.74 (KP).

Erinaceus europaeus L. Hedgehog. I have seen more live hedgehogs this year than in the whole of the rest of my career hitherto. Emmer Green, four dead on road on various dates, and one in Caversham. Sonning Common, nine alive and three dead, in every month except February and March (MJC, SR, KS and recorder). One dead, Chalkhouse Green 21.6.74. One at Withy Copse 10.7.74.

CHIROPTERA

Small bats, patrolling tall hedgerows in the manner of Pipistrellus pipistrellus (Schr.) and considered to be of this species, seen as follows: Three at Kidmore End 29.4.74. Two at Blackmore Lane, Sonning Common 16.5.74. One at Withy Copse 17.5.74.

CARNIVORA

Vulpes vulpes (L.) Fox. Eighteen records from the Bradfield, Padworth and Sonning Common areas (these being the habitats of those observers who report foxes, viz. KP, MJH and the Recorder). Also one shot on the Palmer estate, thirteen on a keeper's gibbet at Bradfield and thirty-two on a gibbet at Yattendon (RG).

Meles meles (L.) Badger. Tracks at a cattle trough near Old Rectory, and in woods north of Bottomhouse Farm, Bradfield (KP). Corpses at Woodcote 5.9.74 (HJMB) and Caversham 20.8.74. One heard calling in Withy Copse 17.6.74.

Mustela erminea L. Stoat. One at Lowbury Hill 20.4.74, mobbed by lapwings (KP).

M. nivalis L. Weasel. One killed in Caversham 22.1.74. One on the Fairmile near Aston Upthorpe 8.12.73, one at Burghfield Gravel

Pit carrying a screaming but unresisting water vole with remarkable ease 13.1.74, one at Manor Farm 29.7.74 (KP).

ARTIODACTYLA

Cervus dama L. Fallow Deer. Numbers much reduced at Padworth (MJH). Five in Crowsley Park Woods near Harpsden, 1.5.74, and a mother and fawn there later in the year. About seven at Hook End 17.5.74. Other activity in May evidenced by slots at Binfield Heath, Woolhampton and Knowl Hill. Slots in Chickory Plantation, Buckhold near Bradfield 13.10.74 may have been of either this or the next species.

Capreolus capreolus (L.) Roe Deer. Tracks in dense copse at Greathouse Woods, Bradfield 17.3.74; species said to be present in Captain's Gorse, Upper Basildon 14.7.74; one in Bramshill Forest, a male at close range, 19.7.74 and one there 2.8.74 (KP).

The Upper Basildon record, if correct, represents a further northward extension of the range of this species in our area.

Muntiacus reevesi Ogilby. Muntjac. Eight records from the Sonning Common area, five from the Bradfield area (KP), one from Richfield Road (RL) and two from Knowl Hill indicate that the distribution of this species remains unchanged. One heard at Bradfield at 12.10 a.m. repeatedly uttered three to six barks in quick succession followed by an interval of about half a minute and maintained this cycle for about an hour (KP). Those which I have heard in the Chilterns show a similar cycle but less persistence.

LAGOMORPHA

Lepus capensis Pallas Hare. One at Sonning Common 29.3.74. Three at Kidmore End 1.4.74 (EMC) and two there 13.4.74. One at Bishopsland Farm 25.6.74 and 9.7.74. Six in one field, and others nearby at Lowbury 20.4.74, three or more on Haw Airfield, Ashampstea 11.5.74 (KP). One at Twyford 3.4.74.

Oryctolagus cuniculus (L.) Rabbit. Thirty-eight records from the Sonning Common area (EMC, KS and the Recorder), Burghfield and Gorin mainly in April and May.

RODENTIA

Rattus norvegicus Berk. Brown Rat. One at Bradfield, not recorded there before, 22.3.74, and a colony of abour twenty seen at dawn near their holes in a hedge at Lowbury Hill 20.4.74 (KP). Seen dead on road at Coppid Hall, Binfield Heath 4.5.74, Rotherfield Greys 19.6.7 and Chalkhouse Green 12.9.74. One at Bishopsland Farm, Sonning Common 17.5.74. One at Crowmarsh 19.5.74. One at Caversham Lock 13.9.74.

Apodemus flavicollis (Melchior). Yellow-necked Mouse. A mouse trapped indoors at Buscot Copse, Bradfield displayed the typical colour pattern of this species and although rather small (head and body 99 mm, tail 106 mm, hind foot 22 mm) was most probably flavicoll (April 74). The observer records the colour of the upper parts as sandy yellow with a darker vertebral stripe, which suggests that it may have been a juvenile. Another example was taken here later in th year but no details were recorded (KP).

Arvicola amphibius (L.) Water Vole. Prey of weasel at Burghfield

Gravel Pit 13.1.74 (KP). One on the Kennet at Woolhampton 7.5.74, two there 10.9.74 and again on 17.9.74.

Microtus agrestis (L.) Short-tailed Vole. One at Sonning Common 4.3.74. One dead in Vastern Road, Reading 19.7.74. Two feeding on small weeds on a gravel drive at Bradfield were so tame that the observer was able to approach to within 300 mm (one foot) 3.8.74 (KP).

Sciurus carolinensis Gmelin. Grey Squirrel. Sixteen records from the Sonning Common area (Recorder and MJC). Dead on road in Emmer Green 28.12.73, 3.1.74 and 5.8.74. Female dead at Midgham 4.6.74 (DGB).

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by B. R. Baker

Order Odonata (Dragonflies)

Agrion splendens (Harris) Banded Agrion

Sulhamstead Lock, 18th May; River Pang, Park Wood, Moor Copse Nature Reserve, 6th July. (KIT)

Lestes sponsa (Hansemann) Green Lestes

Park Wood, Moor Copse Nature Reserve (away from River Pang), 6th July. (KIT)

Enallagma cyathigerum Charp. Common Blue Damsel-fly

In the Water Garden, Moor Copse Nature Reserve, 6th and 19th July. (KIT)

Cordulegaster boltoni (Donovan) Golden-ringed Dragon-fly

Padworth, 6th July.

Aeshna cyanea (Muell.) Southern Aeshna

Padworth, 6th July.

Aeshna grandis (L.) Brown Aeshna

Padworth, 6th July.

Libellula depressa L. Broad-bodied Libellula

Padworth, 6th July.

Sympetrum striolatum (Charp.) Common Sympetrum

In the Water Garden, Moor Copse Nature Reserve, 24th August. (KIT)

Order Hemiptera (Plant-bugs, Leaf-hoppers, Aphids, etc.)

Himacerus apterus (Fabr.) Moor Copse Nature Reserve, 20th August. (HHC)

Cyllecoris histrionicus (L.) Goring Heath, 25th June. (HHC)

Acampocoris pygmaeus (Fallen) Pullen's Pond, Burghfield, 16th. April. (HHC)

Orius minutus (L.) Goring Heath, 20th July. (EB)

Order Hymenoptera (Bees, Ants, Wasps, Saw-flies and Ichneumon-flies)

Xyelidae

Xyela julii (Brébisson). Wokefield Common, 10th April. (HHC)

Cephidae

Calameuta filiformis (von Eversmann). Woolhampton, 11th June. (HHC)

Tenthredinidae

Macrophya albipuncta (Fallen). Woolhampton, 7th May. (HHC)

Pristiphora abietina (Christ). Goring Heath, 30th April. (HHC)

Allantus cinctus (L.) Reading, 26th May. (EB)

Sphecidae

Cemonus wesmaeli Morawitz Woolhampton, 11th June. (HHC)

Trypoxylon attenuatum Smith, F. Aldermaston, 24th August. (HHC) Reading, 6th September. (EB)

Coelocrabro leucostomus (L.) Reading, 25th July. (EB)

Crossocerus varus Lepeletier & Brullé. Reading, 19th August. (EB)

Vespidae

Symmorphus sinuatissimus Richards Woolhampton, 3rd September. (HHC)

Ichneumonidae

Aoplus virginalis (Wesmael). Reading, 19th July. (EB)

Asthenolabus intratorius (Gravenhorst). Woolhampton, 10th September. (HHC)

Barichneumon deceptor Gravenhorst. Woolhampton, 10th September. (HHC)

Cratichneumon varipes (Gravenhorst). Goring Heath, 16th July. (HHC)

Exephanes ulbrichti Hinz. Woolhampton, 10th September. (HHC)

Cynipidae

Andricus glandulae (Schenck). Goring Heath, 30th March. (EB)

Order Siphonaptera (Fleas)

Ceratophyllus rossittensis Dampf. Wokingham, 4th April. (BP)

Archaeopsylla erinacei (Bouché). Sonning Common, 2nd September. (HHC)

Order Lepidoptera (Butterflies and Moths)

Early Appearance of Hibernators

Gonepteryx rhamni (L.) Brimstone. Purley, 7th March. (KIT) Reading Town Centre, 25th March.

Aglais urticae (L.) Small Tortoiseshell. Purley, 31st March. (KIT)

Inachis io (L.) Peacock. Purley, 31st March. (KIT) Moor Copse, 30th March. (KIT)

Notes on Immigrants

Vanessa atalanta (L.) Red Admiral
First record of year, 1st July, Tilehurst. Subsequent records: Pamber Forest, 12th July. (PS). Purley, 17th, 19th, 20th and 26th August. (KIT). Burghfield, 21st October. (DCFC).

Cynthia cardui (L.) Painted Lady. Only one record: Padworth, 14th July.

Agrius convolvuli (L.) Convolvulus Hawkmoth Copse Avenue, Caversham, 30th August. (PC).

Notes on Resident Species

Anthocharis cardamines (L.) Orange Tip
Bozedown, Whitchurch Hill, 15th May. (RGB). Theale, 12th May. (DGFC). Purley, 17th, 18th, 30th May, 4th June. Moor Copse, 18th, 26th May. Sulham Woods, 30th May, 4th June. Mapledurham, 25th May, 1st June. Kidmore End, 15th, 17th May. (KIT).

Strymonidia w-album (Knoch). White Letter Hairstreak
Moor Copse Nature Reserve, 5th May (Larvae). 7th August. (RW). Whitchurch Hill, 7th August. (RGB).

Celastrina argiolus (L.) Holly Blue
Caversham, 19th May, Emmer Green, 21st July. (PS). Caversham, 2nd August.

Apatura iris (L.) Purple Emperor
Pamber Forest, 24th July, a male caught and released. (PC & RW).

Boloria selene (D. & S.) Small Pearl-bordered Fritillary
Padworth, several noted on 29th June and 6th July. Pamber Forest, numerous during June. (PS).

Argynnis aglaja (L.) Dark Green Fritillary
Padworth, 29th June and 6th July, a few seen on each occasion. The last definite record of Dark Green Fritillary at Padworth was 6th July, 1941. Bozedown, Whitchurch Hill, 11th August. (RGB).

Argynnis paphia (L.) Silver-washed Fritillary
Pamber Forest is a stronghold of this fine species; in 1974 it was recorded on the very early date of 24th June. (PS).

Pararge aegeria (L.) Speckled Wood
Lower Earley, 16th March. (BIP). Tadley, 24th April. (PS). Moor Copse, 20th, 21st, April, 18th, 26th May, 22nd June, 6th, 19th July, 24th August. Sulham Woods, 30th May, 4th June. Mapledurham, 14th September. (KIT). Bozedown, Whitchurch Hill, 20th May, 13th June,

20th, 23rd, 28th, 29th August, 3rd, 12th September. (RGB). (Extended dates have been given for this species to illustrate the lengthy period when it may be seen on the wing; in some years it is still to be seen in October.)

Melanargia galathea (L.) Marbled White
Purley, 7th, 23rd July. (KIT). Mapledurham, 14th July (PS). Bozedown, Whitchurch Hill, earliest date 18th June, common during July. (RGB).

Notes on Resident Species (Moths)

Sesia apiformis (Clerck) Hornet Clearwing Moth
It is encouraging to be able to report that the colony of this clearwing still exists at Battle Hospital despite the felling of the row of Black Poplars in 1973. Recorded emergences were: 18 by 16th June; a further 23 by 23rd June; a further 4 by 30th June; and finally 2 more by 7th July; total 47 (Cf. 9 in 1973 and 25 in 1972).

Conopia myopaeformis (Borkh.) Red-belted Clearwing
A colony of this clearwing existed in an apple trunk in a garden at Lydford Road and had been under annual observation since 1968 when it had first been reported to the Recorder by our member Arthur Price. In the winter of early 1974 the owner of the garden, Mr. Sims, thoughtfully notified the Recorder that the tree was to be felled and offered the trunk if it could be of use. The offer was gladly accepted and the piece of timber was placed in a shaded corner of a Caversham garden. During the following June about 30 Red-belted Clearwings successfully emerged, founders we hope of a new colony in new surroundings.

Xanthorhoe quadrifasiata (Clerck). Large Twin-spot Carpet
Moor Copse, 5th, 12th, 19th, 26th July. (PC; PH; RW).

Lampropteryx suffumata (D. & S.) Water Carpet
Moor Copse, 30th March, 5th, 12th, 19th April, 3rd May. (PC; PH; RW).

Colostygia multistrigaria (Haw.) Mottled Grey
Aston Upthorpe Nature Reserve, 31st March; several specimens flushed from grasses during daytime.

Selenia lunularia (Hübn.) Lunar Thorn
Moor Copse, 21st June, 2 specimens at light. (PC; PH; RW).

Deilephila porcellus (L.) Small Elephant Hawkmoth
Whiteknights Park, -June. (PJM). Fairmile, Kingstanding Hill, 6th June, many examples to mercury vapour light.

Cybosia mesomella (L.) Four Dot Footman
Moor Copse, 5th July. One specimen only in an atypical habitat. (PC; PH; RW).

Callimorpha dominula (L.) Scarlet Tiger
Moor Copse, larvae found at night on banks of River Pang, April and May. (PC; PH; RW).

Cerastis leucographa (D. & S.) White Marked Moth
Moor Copse, regularly recorded at light and sallow blossom, 22nd March to 12th April. (PC; PH; RW).

Parascotia fuliginaria (L.) Waved Black Moth
Moor Copse, 26th July, a single example. (PC; PH; RW).

Order Coleoptera (Beetles)

Lampyris noctiluca (L.) Glow-worm
3 examples seen at Crowsley. (HHC).

Order Diptera (True Flies)

Ptychopteridae

Ptychoptera scutellaris (Meigen)
Woolhampton, 3rd September. (HHC).

Chaoboridae

Chaoborus crystallinus (Degeer)
Binfield Heath, 3rd May. (HHC).

C. flavicans (Meigen)
Reading, 29th July. (EB).

Chironomidae

Anatopynia notata (Meigen)
Reading, 2nd April. (EB).

Chironomus pedellus (Degeer)
Woolhampton, 16th April. (HHC).

Phoridae

Phora opaca (Meigen)
Goring Heath, 17th March, pair in cop. (EB).

Pipunculidae

Chalarus fimbriatus Coe
Coxsetters Wood, 25th June. (HHC).

Eudorylas obliquus Coe
Substitute above for E. jenkinsoni Coe, reported in 1972. (EB).

E. subterminalis Collin
Woolhampton, 7th May. (HHC).

Syrphidae

Platycheirus fulviventris (Macquart).
Wokefield Common, 1968. (EB). This specimen was considered doubtful at the time, but the subsequent capture of both sexes at Woolhampton this year by EB and HHC has vindicated it.

Myolepta luteola (Gmelin)
Goring Heath, 18th June. (HHC).

Neoascia dispar (Meigen)
Woolhampton, 7th May. (HHC).

N. obliqua Coe
Woolhampton, 7th May. (HHC).

Cheilosia nasutula Becker
Goring Heath, 22nd June. (HHC)

Agromyzidae

Phytomyza syngenesiae (Hardy)
Reading, 6th July, 1972. Both sexes bred from Sonchus oleracea. (HHC).

P. horticola Goureau
Reading, 31st July, 1972. Both sexes bred from Heracleum sphondylium. (HHC).

Melanagromyza eupatorii Spencer
Woolhampton, 11th June. (HHC).

Paraphytomyza langei (Hering)
Reading, 14th August. (EB).

Tachinidae

Tachina larvarum L.
Woolhampton, 2nd September. (HHC).

T. nigricans Egger
Goring Heath, 9th July. (HHC).

Zenillia latilobata Wainwright
Caversham Park, 15th August. (HHC).

Calliphoridae

Helicobosca distinguenda Villeneuve
Moor Copse, 20th August. (HHC)

Sarcophaga laciniata Pandellé
Chalkhouse Green, 21st August. (HHC).

Muscidae

Phaonia trigonalis Meigen
Chalkhouse Green, 21st August. (HHC).

Hydrotaea albipuncta (Zett.)
Chalkhouse Green, 30th August. (HHC).

Helina lasiophthalma (Macquart)
Reading, 21st February. (EB).

Hebecnema fumosa (Meigen)
Reading, 21st October to 14th November, 1973. (EB).

Fannia incisurata (Zett.)
Woolhampton, 14th May. (HHC).

F. sociella (Zett.)
Woolhampton, 11th June. (HHC).

F. fuscula (Fallen).
Goring Heath, 16th July. (HHC).

Lyperosia irritans L.
Sindlesham, 20th September, on heifer's back. (DCFC).

This Report has been made possible through the kindness of many workers who have sent in their records. We once again acknowledge our indebtedness to the Director of Reading Museum & Art Gallery for allowing inclusion of the relevant records of specimens which are housed in the Museums collections. We also express our best thanks to the following contributors:- Dr. Eric Burtt, R. G. Bertera, H. H. Carter, D. C. F. Cotton, Peter Cuss, Philip Hooper, P. J. Merrett, B. T. Parsons, P. Silver, K. I. Thomas and Robert Wood.

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The Recorder's Report for Botany 1973 - 74

by B. M. Newman

Records sent in by the following members are gratefully acknowledged:- Mr. P. Andrews (PA); Dr. H. J. M. Bowen (HJMB); Miss L. E. Cobb (LEC); Dr. J. Toothill (JT); Mrs. E. M. Trembath (EMT). Unfortunately, some records were received too late for inclusion.

The nomenclature and order are according to the "Flora of the British Isles" by Clapham, Tutin and Warburg. An alien taxon is indicated by an asterisk (*). This year the English names are from "English Names of Wild Flowers", the recommended list of the Botanical Society of the British Isles.

List of Members' Records

Phyllitis scolopendrium (L.) Newm. — Hart's-tongue
Retaining wall of ditch near Thames, Henley. (JT)

Ophioglossum vulgatum L. — Adder's-tongue
Stanford End Mill (LEC)

Ranunculus repens L. — Creeping Buttercup
Multipetaloid form on M4 bank near Hermitage. (HJMB)

Ranunculus hederaceus L. — Ivy-leaved Crowfoot
Woods near Beech Hill. (JT)

Thalictrum flavum L. — Common Meadow-rue
Thames Meadow, Pangbourne. (EMT)

Erophila verna (L.) Chevall. — Common Whitlowgrass
Widespread, Pang Meadow. (EMT)

Hypericum hirsutum L. — Hairy St. John's-wort
Warren Bank, Ipsden, 13th July. (LEC)

Hypericum montanum L. — Pale St. John's-wort
Warren Bank, Ipsden, 13th July. (LEC)

Silene dioica (L.) Clairv. — Red Campion
Bridle path south of Ashampstead Common. (EMT)

Myosoton aquaticum (L.) Moench. — Water Chickweed
Wargrave Marsh. 24th August. (LEC)

Geranium robertianum L. — Herb-Robert
White form of Herb-Robert, Pangbourne car-park, Scratch face Lane, Bradfield. (EMT)

Oxalis corniculata L.
In gardens, Wallingford. (HJMB)

Impatiens capensis Meerburgh — Orange Balsam
Wargrave Marsh, 24th August. (LEC)

Buxus sempervirens L. — Box
Dominant and spreading over a large part of Shirburn Hill, Oxon. Possibly native here with Juniperus and Calluna (HJMB)

Anthyllis vulneraria L. — Kidney Vetch
Lowbury Hill (EMT)

Filipendula vulgaris Moench — Dropwort
Warren Bank, Ipsden, 13th July. (LEC)

Poterium polygamum Waldst. & Kit. Fodder Burnet
On railway bank north of Hermitage, July 6th. (HJMB)

Cotoneaster simonsii Baker Himalayan Cotoneaster
Scrubland at Warren Bank, July 12th. (HJMB)

Viscum album L. Mistletoe
West bank of Thames near Temple Island, Henley, on Populus. (JT)

Polygonum amplexicaule D. Don Red Bistort
Roadside near Three Firs pond. (HJMB)

Primula veris L. x vulgaris Huds.
Grass clearing in Greenaways Copse, Ashampstead. NHS walk. (EMT)

Lysimachia punctata L. Dotted Loosestrife
On railway bank north of Hermitage, July 6th. (HJMB)

Trachystemon orientalis (L.) G. Don Abraham-Isaac-Jacob
Wood, Bere Court Farm, Pangbourne. (EMT)

Lithospermum arvense L. Field Gromwell
Cornfield, Halfpenny Lane, Moulsford. (EMT)

Atropa bella-donna L. Deadly Nightshade
Warren Bank, Ipsden, 13th July.
Persisting in Redlands Road, Reading, 14th July. (LEC)

Antirrhinum orontium L. Lesser Snapdragon
Cornfield, Arborfield Hall Farm, Arborfield. (JT)

Veronica longifolia L.
Roadside near Three Firs pond. (HJMB)

Melampyrum pratense L. Common Cow-wheat
Warren Bank, Ipsden, 13th July. (LEC)

Lathraea squamaria L. Toothwort
On Hazel, Leyfields, Ashampstead. NHS walk. (EMT)

Orobanche minor Sm. Common Broomrape
Disused railway line, Hermitage, 6th July. (LEC)
Roadside between Basildon and Streatley. (JT)

Verbena officinalis L. Vervain
Warren Bank, Ipsden, 13th July. (LEC)

Acinos arvensis (Lam.) Dandy Basil Thyme
Hermitage disused railway line, 6th July. (LEC)

Lamium amplexicaule L. Henbit Dead-nettle
Ashampstead. (EMT)

Galeopsis speciosa Mill. Large-flowered Hemp-nettle
One plant near Smallmead old tip. (HJMB)

Succisa pratensis Moench Devil's-bit Scabious
Warren Bank, Ipsden, 13th July. (LEC)

Gaillardia aristata form grandiflora
Cinder bed near railway, Salisbury Road, Reading. Perennating well. (HJMB)

Inula conyza DC. Ploughman's-spikenard
Railway bank north of Hampstead Norris, 6th July. (HJMB)

Echinops sphaerocephalus L.
Railway bank north of Hampstead Norris, 6th July. (HJMB)

Tragopogon pratensis L. Goat's-beard
Disused railway line, Hermitage, 6th July. (LEC)

Butomus umbellatus L. Flowering-rush
River Thames, Purley. (EMT)

Fritillaria meleagris L. Fritillary
One plant in Whiteknights Park, not obviously planted. (HJMB)

Juncus tenuis Willd. Slender Rush
Along heathy tracks, Burghfield Common. (HJMB)

Epipactis helleborine (L.) Crantz. Broad-leaved Helleborine
Roadside, Woodley.
Reported by Mr. B. Brooker. (PA)

Epipactis leptochila (Godf.) Godf. Narrow-lipped Helleborine
One flowering plant, Stoneycroft Plantation, Whitchurch. (EMT)

Ophrys apifera Huds. Bee Orchid
Warren Bank, Ipsden, 13th July. (LEC)

Orchis mascula (L.) L. Early-purple Orchid
A fair colony in flower following light coppicing, Herridge's Wood, Pangbourne. (All except one were taken.) (EMT)

Dactylorchis fuchsii (Druce) Vermeul. Common Spotted-orchid
Chalk slope on roadside between Basildon and Streatley. (JT)

Anacamptis pyramidalis (L.) Rich. Pyramidal Orchid
Warren Bank, Ipsden, 13th July. (LEC)

Catapodium rigidum (L.) C. E. Hubbard Fern-grass
Edge of cornfield, Sulham. (EMT)
On railway bank north of Hermitage, 6th July. (HJMB)

Poa compressa L. Flattened Meadow-grass
On old walls, Wallingford. (HJMB)

Poa chaixii Vill. Broad-leaved Meadow-grass
A few clumps in an old plantation, Whiteknights Park. (HJMB)

Hordelymus europaeus (L.) Harz Wood Barley
In summit woodland, Shirburn Hill, Oxon. (HJMB)

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WEATHER RECORDS IN 1974

by A. E. Moon

The data refer to Reading University Meteorological Station. Since this is a new site, as mentioned in the summary for 1971, no comparison with an average is yet possible. All temperature readings are in Celsius degrees and rainfall measurements in millimetres which is now standard practice. A "rain day" is a day on which rainfall equals or exceeds 0.2 mm. For the designation of frost and ground frost days see Weather Records in 1961, but using all values below 0.0°Celsius.

STATION - READING UNIVERSITY. HEIGHT ABOVE MEAN SEA LEVEL - 215 feet.

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEAR
MEAN DAILY TEMPERATURES	MAX.	9.1	8.7	9.3	13.4	16.1	18.9	19.5	20.2	16.3	10.6	10.2	10.4	13.6
	MIN.	3.3	2.7	2.3	4.1	6.4	9.6	11.8	10.8	8.8	4.7	4.7	5.7	6.3
	MEAN	6.2	5.7	5.8	8.7	11.3	14.3	15.7	15.5	12.5	7.7	7.5	8.1	9.9
	RANGE	5.8	6.0	7.0	9.3	9.7	9.3	7.7	9.4	7.5	5.9	5.5	4.7	7.3
	GRASS MIN.	-0.7	-1.5	-1.9	-0.8	0.7	5.8	8.0	6.7	5.3	1.4	1.1	2.7	2.3
EXTREME TEMPERATURES	E. MAX	13.0	12.4	16.9	19.0	20.7	25.0	23.5	23.5	21.7	12.9	13.4	14.0	25.0
	DATE	15	11	30	10	18	16	21	15	12	14	9	27, 28	June 16
	E. MIN	-3.3	-1.9	-2.6	0.5	-0.3	5.0	7.4	4.8	3.0	-0.6	0.6	-0.4	-3.3
	DATE	1	24	6	29	7	7, 9	25	28	30	13	27	10	Jan. 1
	E. GRASS MIN.	-8.3	-8.5	-9.6	-7.2	-8.4	-3.2	0.6	-1.0	-1.7	-4.4	-4.1	-4.5	-9.6
	DATE	1	8	6	23	7	9	25	28	30	13,31	27	10	March 6
DAYS WITH FROST		3	5	7	0	1	0	0	0	0	2	0	1	19
" "	GROUND FROST	17	17	19	17	13	6	0	2	5	9	12	11	128
SUNSHINE HOURS	SUM.	48.4	66.9	106.6	167.4	211.0	219.9	195.9	204.5	165.5	107.9	56.4	52.5	1602.9
	% POSS.	19	24	29	41	44	45	39	45	44	33	21	21	36
	DAILY MEAN	1.56	2.39	3.44	5.58	6.81	7.33	6.32	6.60	5.52	3.48	1.88	1.69	4.39
PRECIPITATION m.m.	AMOUNT	84.0	81.4	29.7	12.6	12.5	76.1	35.5	82.4	145.7	63.0	143.5	30.5	796.9
	RAIN DAYS	22	16	10	6	10	13	12	16	21	17	23	15	181
	MAX. RAIN IN 1 DAY	12.8	17.4	14.3	5.0	3.7	20.1	8.4	19.2	28.5	8.7	30.0	8.4	30.0
	DATE	12	10	9	12	9	26	16	25	4	7	17	26	Nov. 17
LONGEST RUN OF CONSECUTIVE RAIN DAYS		14	6	4	3	3	6	6	9	9	7	13	8	-
LONGEST RUN OF CONSECUTIVE DRY DAYS		3	5	7	12	8	8	7	6	3	8	2	9	-
SNOW OR SLEET DAYS		0	3	3	0	0	0	0	0	0	0	0	1	7
DAYS SNOW LYING		0	1	1	0	0	0	0	0	0	0	0	0	2
VISIBILITY	FOG AT 0900 G.M.T.	1	1	2	1	0	0	0	0	0	0	1	0	6
THUNDERSTORM ACTIVITY	DAYS OF THUNDER	3	0	1	1	2	4	1	2	5	1	2	1	23
	DAYS OF HAIL	2	0	1	0	0	1	0	0	1	0	1	1	7

MONTHLY WEATHER NOTES, 1974

January — A very mild month being the warmest January since 1938 and the sunniest since 1967. 1961 was the last January in which no snow or sleet was recorded.

February — The warmest February since 1967 and wettest since 1966. One inch of snow lying at 09h. on 6th was the first time snow has been present at that hour since 2nd March 1971.

March — The dullest March since 1969. 5.2cm. (2 inches) of melting snow was lying at 09h. on 10th. One millimetre of rain and soft hail fell in 2 minutes at 13h.45m. during a roaring squall and thunderstorm on 19th. Temperature reached 15.56°C (60°F) for the first time this year on 25th (16.5°C).

April — This was the driest April since 1960. A drought period of 16 days ended on 11th.

May — Cooler than normal month, but the driest since 1959.

June — Another cooler than normal month with both rainfall and sunshine above normal.

July — The windiest July since anemometer records were started at this station in 1961. Coolest July since 1965 with the lowest maximum July temperature (23.5°C) since that year.

August — Coolest August since 1963. The maximum day temperature on 15th was the lowest in August since 1st, 1962. It was the wettest August since 1966 but the sunniest since 1964. Six millimetres of rain fell in 15 minutes at 14h.12m. during a thunderstorm on 4th.

September — Wettest September since reliable records commenced in 1920, only 1968 approaching this month's total with 137.2mm. The mean maximum day temperature was the lowest in September since 30th, 1957. 7.2mm. of rain fell in 15 minutes at 13h.15m. during a thunderstorm on 23rd.

October — Coldest October since reliable records commenced in 1920, the 30th being the coldest October day since 31st, 1934. Wettest October since 1967; 2mm. of rain fell in 3 minutes at 17h. during very heavy rain on 6th. The first autumn air frost occurred on 13th.

November — Dullest November since 1968. Although a very wet month the rainfall total did not reach the 152mm. plus amounts attained in 1929, 1940, 1951 and 1970.

December — Warmest December since 1934; the ½ Max. + Min. temperature was as much as +0.4°C and +0.6°C above that of October and November respectively. It was a much windier month than normal.

ATMOSPHERIC POLLUTION

1974

Measurements of smoke concentration and sulphur dioxide (SO_2) are summarised in the following table. They constitute the results of daily measurements of smoke and SO_2 pollution by air filter and volumetric method respectively from apparatus installed in the Geography Department, Reading University, at Whiteknights.

Smoke Concentration Micrograms per cu. m.						Sulphur Dioxide (SO_2) Concentration Micrograms per cu. m.				
Month	Mean	Highest		Lowest		Mean	Highest		Lowest	
January	9	102	9th	2		36	125	9th	13	14th, 27th
February	16	63	25th	0	9th, 10th	47	110	25th	13	1st
March	30	80	11th	1	16th	80	188	11th	25	17th
April	17	59	3rd	3	13th	55	132	1st	20	13th, 27th
May	7	17	3rd, 7th, 16th	0	10th	49	106	16th	26	11th
June	7	17	21st, 25th	1	1st	36	73	21st	13	27th
July	2	8	18th	0		28	40	17th	7	4th
August	8	32	29th	0	25th	49	113	29th	27	5th
September	8	31	11th, 18th	0	7th	30	59	18th	13	3rd, 4th, 22nd
October	17	63	14th	0	27th	53	89	15th	20	18th 19th
November	17	68	5th	0	10th, 13th	53	94	25th	27	2nd
December	6	13	9th, 14th, 30th	0	25th, 27th, 28th	37	74	14th	6	28th
Year	12	102	9th Jan.	0	See below	46	188	11th March	6	28th Dec.

* 5th, 10th, 14th, 16th, 19th, 26th, 27th, 29th

** 3rd, 5th, 14th, 15th, 21st, 22nd, 27th, 28th, 30th