

The Reading Naturalist

No. 17



Published by the Reading and District
Natural History Society
1965

**Price to Non-Members
Two Shillings and Sixpence**



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THE READING NATURALIST

No. 17 for the Year 1963-64

The Journal of
The Reading and District Natural History
Society



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Sir Arthur Russell

Sir Arthur Russell, Bt., who died at his home, Swallowfield Park, on 23rd February, 1964, at the age of 85, was an old and valued patron of this Society. For many years we had enjoyed an annual visit to the grounds at Swallowfield where the many fine and rare trees were a source of pleasure to our Members, as was the peace and tranquillity of the surroundings. On all of these occasions until ill-health prevented him, Sir Arthur personally escorted the party, and many of us can testify to his kindness and interest in all our doings. We shall all miss him very much, one of a generation of English landowners which is fast disappearing.

The Editorial

Human activities and numbers today encroach intolerably on the lives and homes of the animals and plants of this country, and the stresses that they impose, with natural hazards, form a theme that is developed in two of our contributions and echoed at intervals throughout the Journal, notably in the entomological and ornithological reports, with their appeals for records of species that have recently declined. Through its membership of the Berks, Bucks and Oxon Naturalists' Trust, the Society as a whole is attempting to avert or minimise some of the man-made threats, but the work is urgent and the need for support, both financial and by weight of opinion, is great, and we should not be satisfied until each member of the Society is also one of the Trust in his own right.

If our wild life is declining, our knowledge of it continues to increase, and discoveries of species new to the area (in one instance to the country) re-discoveries, and extensions to the range of species within the area are well scattered through our pages.

It is a pleasure to thank our contributors and production team for their painstaking work, and also the Director of the Museum and Art Gallery, Mr. T. L. Gwatkin, who has again kindly provided the facilities.

Presentation to Mrs. Fishlock

During the Members' Evening on 3rd December, a presentation was made to Mrs. A. Fishlock as a mark of members' esteem and gratitude for her great service to the Society during the eleven years of her Secretaryship. Mr. Newman, making the presentation, referred to the efficiency with which Mrs. Fishlock had discharged her duties and to the kind way in which she had welcomed him to membership when he joined the Society nine years ago.

Meetings, Excursions and Attendances, 1963-64

The first meeting of the winter season was the Annual General Meeting, at which Dr. E. V. Watson gave his Presidential Address, on "Change, progressive and regressive", (58). Two evenings were devoted to members' exhibits and communications (48 and 49) and one to a programme of nature films (50), and at another meeting, held jointly with and by invitation of, the Geology Club, the film "Eruption of Kilauea" was shown (about 65). The lectures given at the remaining meetings were "Some Malayan Reptiles", by M. V. Tweedie (51); "The Use of Toxic Chemicals in Agriculture", by Sir H. G. Saunders (55); "Flowering Succulents", by G. Rowley (44); "Microfossils and their Uses", by Dr. P. Kaye (46) and "Volcanic Eruption of Tristan da Cunha", by D. E. Baird (76).

Winter walks and meetings were held on 19th October, when the Forbury Gardens, Eldon Square Gardens and Mrs. Fishlock's Vinery at Clarence Lodge were visited (20); November 2nd, Goring Heath to Pangbourne (about 20); 7th December, Stoke Row; 4th January, Bear wood (8); 1st February, Finchampstead (24); and 7th March, College Wood and Green Dean Wood (25).

The summer field meetings were as follows: 4th April, Beenham, for plants, etc. (12); 18th April, Ashton Upthorpe, for pasque flowers (50); 9th May, Arborfield, for bluebell woods (19); 11th May, the Freshwater Biological Station of Reading University, by invitation of the Reading Microscopical Society (a total of about 24); 16th May, Arborfield to Winnersh, for rhododendrons, etc. (11); 27th May, Purley to Pangbourne, riverside walk (8); 6th June, Cleeve, for chalk woodlands (19); 17th June, Watlington Hill, plants and birds (cancelled owing to rain); 27th June, Medmenham (18); 8th July, Reading University Agricultural Botanical Gardens (20); 18th July, Thatcham reed beds, for insects, etc. (17); 22nd July, Folley's gravel pits, Sonning, for birds (14); 1st August, Stanford Dingley, Jennetts Hill and Blue Pool, for plants and geology (34); 12th August, Peppard woodland and common (23); 22nd August, Wargrave to Sonning, riverside (27); 2nd September, Burghfield gravel pits, for birds (20); 12th September Hazeley Heath, for plant galls and plants (24); 26th September, Kingwood Common, fungus foray (40); 10th October, I.C.I. Research Station, Jeallott's Hill, for a demonstration of the collection and extraction of soil fauna (27).

The Young Naturalists' Evening held in the Town Hall on 4th March was attended by about 600 children. Nearly 700 questions were submitted by pupils from Reading schools, and a selection from them was presented by the Questionmaster, Mr. W. A. Smallcombe, to a panel consisting of Professor T.M. Harris, Dr. K.H. Mann, Dr. L.B. Tarlo, Mr. Robert Gillmor and Mr. H.H. Carter. Ten prizes, of which eight were given by the Natural History Society, one by Mr. Smallcombe and one by Mr. T.L. Gwatkin, were presented by the Right Worshipful the Mayor of Reading, Councillor J.C.H. Butcher to Christine Johnson, New Town Junior School, 11 yrs; M.B. Nathan Stoneham Grammar School, 15½ yrs; Michael Seymour, Whitley Park Junior School, 10 yrs; David Franklin, Cintra Secondary School, 13 yrs; Corinna Furse, St. Joseph's Convent Preparatory School, 9½ yrs; Colin Bliss, Norcot Primary School,

10 yrs; Katherine Mann, Abbey Junior School, 10 yrs; David Cooke, St. James's R. C. Primary School, 10 yrs; Louise Brown, St. Joseph's Convent Preparatory School, 10 yrs; Stephen Coleman, Redlands Primary School, 11 yrs.

On the afternoon of 24th May, the Society again laid a Nature Trail at Finchampstead Ridges, by kind permission of the National Trust. The number of visitors could not be counted, but was of the order of 300.

New Flora of Buckinghamshire

Mr. P. R. Knipe of 'Charnwood', Marsham Way, Gerrards Cross, Bucks, is hoping to compile a Flora of Buckinghamshire to replace Druce's Flora of 1926 and would be grateful for help from our Members. Will anyone who would like to assist please write to him at the above address.

Publications Received

Journal of the North Gloucestershire Naturalists' Society
Bird Report of the North Gloucestershire Naturalists' Society
South-eastern Naturalist
Middle-Thames Naturalist
Annual Report of the Southampton Natural History Society

Congress of the South-eastern Union

of Scientific Societies, 1965

The Congress for 1965 will be held at Folkestone, by kind invitation of the Folkestone Natural History Society and the Corporation of Folkestone, from 7th May to 9th May inclusive. There will be lectures and excursions, and a Conversazione on the afternoon of 8th May.

Further particulars from our Society's Representative, Mrs. A. Fishlock, Clarence Lodge, 93 London Road, Reading.

Change, progressive and regressive

Presidential Address to Reading
Natural History Society, October, 1963

By E. V. Watson, B.Sc., Ph.D., F.L.S.

Change, progressive and regressive, what have I in mind, you may be wondering. Progressive change you may feel is what happens when your favourite political party comes to power. Regressive change you associate with something that you find has happened to your garden while you were away on holiday. Again, are we not fond of reading, in our children's school reports, "has made good progress", whereas we should be disturbed indeed if we were to read instead "his regress (or regression) has been steady". Medical literature of course refers to the progress of a particular disease (meaning that the disease is getting on better and better, but without making reference to what is happening to the patient); whilst something known as regression is a feature of certain kinds of psychological illness; and this time it does refer to the patient.

We, as naturalists, must assuredly narrow the field of our interest this evening and I shall, of course, be concerned wholly with change - of both these kinds - in Nature, in communities, if you like to put it that way, of plants and animals. In short, this is an ecological topic and mine will be the address of one interested in ecology. Do we know what we mean by ecology? It is certainly a very wide subject - one might say an all-embracing subject - for in a certain sense everything that happens to a plant or animal in a state of nature - in the home where it lives, is a part of ecology. Literally, it is the science of living things in their homes, and this includes nowadays a most rigorous study and analysis of the environment. A treatise on ecology to-day is apt to be full of tables, graphs, histograms and other intimidating things, although let me hasten to admit that they seemed far less intimidating after Mr. Newman's lucid discourse on them a year ago.

If ecology includes so much as to be almost without limits, my talk, quite plainly, is going to be limited - both by the clock and by the fact that I am going to ask you to think, during the next half hour or so, exclusively about certain kinds of change that go on in Nature. And it is my hope that a few facts, a few ideas, of interest may emerge. If they do not, the fault will be mine; and I shall have failed you. Like the concerto my composition is divided into three movements (though it resembles a concerto in nothing else). The first movement concerns change in vegetation - in plant communities in fact. The second has as its theme changes of status in certain bird species. The third, into which the second merges, takes all Nature as its theme.

I suppose the man who laid the foundations of our knowledge and ideas regarding progressive change in vegetation was the celebrated American botanist,

F. E. Clements, in his great book "Plant Succession", which was published in 1916. It would be quite inaccurate to call him the first plant ecologist, but he was in a sense the first person to 'explain the rules of the game', the game, that is, that plant life all over the world is playing. Clements believed that great communities of plants were almost like individual living organisms. They had a beginning, they grew to maturity and in time they were destined to grow old and to die. But in any particular climatic region a particular community which he called the "climax" would be capable of flourishing for a long period of time, in some kind of equilibrium, provided it were not exposed to some extraneous influence, natural or man-made, which could bring it to an untimely end. When Clements spoke of Plant Succession he meant the tendency of all vegetation, everywhere, to progress inexorably towards the climax. In a word, the vegetation cover was never static, it was always changing, until such time as the climax community had become established and some kind of stability, or equilibrium had set in.

Now when man first began to exploit the natural resources - the plant resources - of the earth, great tracts of every land were covered by this appropriate climax community. One thinks of the coniferous forests of northern latitudes in both east and west hemispheres; of the climax deciduous forest that once covered so much of Britain, temperate Eurasia and North America, of the tropical rain forest that is climax for so many equatorial high rainfall areas; or, by contrast, the sparse thorny vegetation that is climax for vast areas of semi-desert, in Arizona and adjoining states of the U.S.A., in the low-rainfall areas of Africa and so on. Along the narrow strip of coast in northern California the giant Redwood trees were a climax community in which individual members had stood, slowly growing, for 2,000 years. Another, equally impressive, would be the gum (or Eucalypt) forest that from time immemorial must have fringed the coastal strip of Western Australia.

In these and many other instances then, we have scenes of apparent stability, where often enough the vegetation is dominated by plants of great size (and sometimes of great antiquity too), but where every component, plant and animal, is playing a part in a mysterious whole that has a certain stability. I say "mysterious" because we can but guess, in many cases, at the precise part played by all the diverse kinds of living organisms that make a home there. We are right, moreover, to approach such a community with awe, for it has endured for a very long time. Change, of course, there has always been, but immeasurably slow change, on the time-scale of the geologist. And every piece of climax vegetation had first to grow out of something less impressive, by the slow, progressive change which Clements called Plant Succession.

Now we may turn to our own country and examine quickly a few examples of vegetation change that are in fact illustrations of plant succession. Cut down the forest, destroy the climax, fire the land, rip off earth's green mantle how you will, and you force Nature to start all over again. Sometimes a volcanic eruption or a fire brought about by natural causes will do this; more

often it is the work of man. I refer to sudden, catastrophic regressive changes. Afterwards, just as night follows day, the slow process of succession begins again; first re-colonisation by tiny algae, lichens, mosses perhaps; soon annual herbaceous plants are conspicuous and quick-starting perennials like 'fireweed', and then, more gradually, woody vegetation supervenes. At least this is the familiar picture of events on fired land in the deciduous forest zone in which we live. Green Dean wood, near Cane End, felled just two years ago, was a sheet of magenta fireweed in bloom this summer. Ecologists have technical names for the different stages and the different kinds of event, but in truth all are examples of plant succession, or of progressive changes that lead one back towards the climax.

When grazing is withdrawn from chalk downland the well-known and diversified 'scrub' of hawthorn, privet, dogwood and others will take hold, and if we wait long enough and there is sufficient shelter and depth of soil we shall see forest trees taking their place amid the untidy thickets so formed. Perhaps ash will come first, followed in time by beech. Very often a long-term succession of this kind is not completed and in any event where potential forest land is concerned the planned management of the forester imposes a pattern rather different from what we should find in natural conditions. Most successions these days are not left long before man interferes with them. On the northern slopes of Box hill in Surrey, dogwood scrub has been spreading so successfully that the Conservation Corps have been called in to halt it. And so the progressive change of Nature is set into reverse in the interests of preservation of open grassland.

From this single example we can observe two rather interesting points. The first is that the conservator can never just conserve in the sense of passively maintaining what exists already. He has to be constantly taking steps to prevent a successional sequence which, were it allowed to go forward, would overthrow the regime he is setting out to preserve. We are told of a case some years ago when some well-intentioned naturalists (belonging I fancy to Nature Conservancy staff, but I may be wrong in this), intent upon preserving a rare plant, put a wire fence round it. Next year the rare plant was still to be found - outside the fence, but within the enclosure nothing but tall grasses could be seen, grasses whose vigorous growth had outstripped and overwhelmed the less thrustful rarity. Very much the same sort of thing indeed happened, on a much larger scale, on the Nature Reserve at Old Winchester Hill, in Hampshire, where interesting species were fast diminishing in numbers because of intense competition from grasses and shrubs, the whole area having been protected from grazing, whilst outside, where the farmer's livestock grazed in a controlled manner, the desirable short turf was maintained, with its fascinating and diverse flora. This at least was the position about 1959. By now I have no doubt steps have been taken to reverse it, and I mention it merely to illustrate how complicated this whole business of conservation can be.

The second point is of less importance, but is worth mentioning because

it bears directly on my title. It is the inescapable fact that what is progressive change in the natural or plant successional sense is often regression so far as our own immediate interests are concerned. Look again at your herbaceous border after you have come back from your summer holiday. You are not going to tell me you would describe it as having progressed. Yet it has in Nature's sense. Go away for three or four years; then come back and you will find a strip of flourishing scrubland. Go away for twelve or fifteen years and maybe a young forest will greet you on your return. 'Oh dear', you will say, 'whatever has happened to my phlox and my lupine and that dear little Geum that cousin Agatha gave me?', and as you look sorrowfully for your lost favourites amid Nature's rightful heirs to that land you will be thinking how your once lovely border has 'reverted' or 'regressed' to a wild thicket. Not at all! In the great sweep of the plant ecologist's definition this is just one more instance of progressive change in vegetation,, surging onwards all the while towards the natural climatic climax. Tropical gardeners who go off for a short holiday witness the same sort of sequence of events going on at a much accelerated rate. Only now and again the monotony is varied by Nature taking a hand in the other direction, as when a tropical storm literally washes the garden away. Then owner and ecologist can chant in unison "This is indeed regressive change".

When the march of events involves the drying up of places that were once wet the ecologist speaks of a hydrosere, and in most such systems there is a long-term tendency for open water to give place to reed swamp, for reed swamp to be succeeded by marshland, and for this in turn to change into a swampy woodland - with alders and willows and birches - to which ecologists give the name of carr. Pearsall, by carefully mapping the extent of the different plant communities at Esthwaite Water, and doing so again after the lapse of fifteen years, was able to point to significant changes of the kind I have indicated. In short, lakes left alone will tend to fill.

How different though is the situation in the Reading area, where we are all familiar with the numerous gravel pits. Here the sequence of events is rapid and wholly artificial, governed as it is entirely by the speed and pattern of excavation and dredging for gravel. Within a season or two of the field being taken over by the gravel company a whole new habitat is created - many new habitats in fact - a sheet of open water, enticing spits of sand and silt and gravel for waders to alight upon and be seen by enthusiastic bird-watchers; wet muddy places where nice liverworts establish their modest rosettes; then quickly in their wake a full-scale willow carr. Great crested grebe, coot, moorhen an assortment of winter duck, sedge warblers, reed bunting, feeding herons and passage waders, all these and many more make the new habitats their home, because where the deep water and the sand spits and the willow thickets are, there too the right foods and (for many) the appropriate nesting places will be found. They little know that this is a spurious and fickle kind of plant succession, set in motion at the whim of a gravel prospector and leading to a climax consisting of the tall masts of

yachts varied by careering speed boats towing bronzed beauties on water skis. Progressive or regressive? A 'Hit' or a 'Miss' as they say on Juke Box Jury? Change it certainly is, and too rapid to be natural. And so far as my flippant interjection goes I can only testify that for an unfortunate black term that I watched a year or two ago, skimming in characteristic fashion the water of Sonning Eye gravel pit when the speed boat sped by, it was a very near 'miss' indeed!

As naturalists we do well to be wary of the gradual encroachment on our cherished gravel pits by the great sporting fraternities like the yachtsmen and the water-skiers. I would submit that, worthy and perfectly defensible though the interests of these people may be, where the life of a large and once peaceful gravel-pit is concerned they are almost wholly in conflict with our own.

If I may, I will now turn to quite another matter; to progressive and regressive changes which befall the populations of particular species of bird. Thus, for the next few minutes we shall be viewing things from the standpoint of certain bird species and not of whole communities of plants. One can hardly be an ornithologist and fail to be interested in these changes - changes of status they are often called - because in many instances they are so rapid, and they may be very hard indeed to explain. I shall draw my main examples from experience in two quite distinct and quite limited areas, the one in Surrey between the Hascombe and Coneyhurst hills, and the other on the Isle of May, in the Firth of Forth.

Turning to the first area, I may say that I was pretty familiar with the bird life of that part of rural Surrey thirty-five years ago. In those far-off days the woodland bird communities were doubtless in many respects much as they are today. One could see jays and nuthatches, tree creepers and blackcaps, green and greater spotted woodpeckers, and other favourite kinds of bird, and in favoured coppices and spinneys we could hear the nightingale of an evening in early summer. Visitors were dragged, unwillingly at times I now suspect, to hear him too. I thought how lucky they were, but now I am not quite sure that they always thought so. If one were to go back and walk those old walks again, all this might well be much as it used to be. A few more carrion crows and magpies, I daresay, and subtle season-by-season fluctuations in the numbers of some of the others.

But those wonderful stretches of open common, with their gorse and bramble and bracken, those little fringes of rough grass and rushes, and the bramble thicket that lay beside the railway of the Guildford-Horsham line - how different would they seem today. For gone would be the red-backed shrike that stood sentinel - in all his proud beauty of chestnut, lavender-grey, delicate rose-pink and black plumage. Where once we could see perhaps three or four in a mile or so of rough railway embankment, now we should see them no

more. For the famed "butcher bird", well-known to our forbears, has become quite a rare British species today. Again, the stonechats, perhaps the most captivating of all the species that dwelt upon the commons, and of which one could find a pair or two on even quite insignificant little stretches of rough ground, they too have vanished from many of their old haunts and I very much doubt if you would find any on Cranleigh Common, Smithwood Common, Run Common or Rushett Common today.

In spring we used to hear the strangely hollow, haunting sound of the wryneck, although I will admit that even then it was not plentiful in that part of Surrey. The latest available reports suggest that this remarkable bird which has fascinated bird watchers from the earliest times, this unobtrusive, ventriloquist snake-bird (or cuckoo's mate), has so dwindled in numbers that probably less than a score of pairs will have bred successfully last season in the whole of Britain - and almost all of these in one small district on or near the Kent-Surrey border. When I first came to Reading, seventeen years ago, there were several places where it bred, but one by one it has vanished from them all.

We do not know the causes of these regressive changes in the status of species, formerly well-known and widespread. We do know, however, that in a case like the wryneck the retrenchment began far back in the mid-nineteenth century and that what we have seen in recent years has been merely an acceleration of the process.

Perhaps a little artistic licence may have entered into my description of these changes in Surrey birds for although I knew the ground well many years ago it cannot be claimed that I know it very well today. Lest you hasten to point an accusing finger in my direction, let me hurry on to deal with the Isle of May where the whole sequence of events is thoroughly well documented. I am not now considering the fame of this Island (nine miles from East Lothian and five from the Fife coast) as a place for migrants to visit, but merely as an example of a rapidly changing population of breeding species. What is after all a rather limited period of time - thirty years - has seen quite remarkable changes. Let us examine a few of these.

The nesting terns (or sea-swallows) have undergone strange vicissitudes in that time. It seems that during the nineteen-thirties, and certainly in the early 'forties all four species were on the increase and by 1946 truly astonishing breeding populations had been achieved. In that first full post-war summer a most careful nest-by-nest survey was carried out by reliable observers. They returned figures as follows: 5,000 to 6,000 pairs of common and arctic terns combined, mostly the former; 1,700 pairs of sandwich terns and, if I remember aright, around ten to a dozen pairs of roseate terns. I should add that there was no suitable breeding terrain for the little tern, the great mixed colony to which I have just referred making their nests on rough rocky ground very adequately covered and cushioned by thrift, sorrel, chick-weed

and other vegetation. I was on the island myself in June, 1946 and the sight, I can assure you, was one to be remembered. So was the almost ceaseless clamour of some 12,000 tern voices a sound to be held in the memory for a very long time.

Go back to the island now - in the height of the nesting season - and how many pairs of terns do you see? Perhaps a few pairs of common terns may settle and attempt to breed, but of successful tern breeding on the Isle of May in the last few seasons there has been none. Even by 1956, only ten years after the peak, the colony had dwindled to a few hundred pairs of the common species, all the sandwich and roseate terns having gone. Why should this be? Well, in this particular instance, we can point to a highly likely cause; for the period of regression for one kind of bird has been the time of unexampled increase for another kind of bird - larger, more powerful, more aggressive. I refer to the dramatic rise in numbers of nesting herring and lesser black-backed gulls, and this despite repeated attempts to put some check upon them by a variety of means including a systematic destruction of their eggs. They just refuse to be kept down. Since they harry the terns and prey upon their eggs and young, it seems that here lies the chief explanation of the terns' decline.

There have been other changes too over this 30-year period. For example the shag, from being a sparse breeder on the cliffs of the Isle of May has built up its numbers to a population which is now probably well in excess of six hundred breeding pairs. Almost anywhere on the cliff-girt parts of the island coastline where you care to lie flat on the ground and peer over the edge you will be greeted by the shag in attendance upon its massive nest, looking rather resplendent as the sun catches its polished bottle-green or bronze-green plumage, whilst it twists its sinuous neck and cocks a sea-green eye at you to make sure you intend no harm. Of course, it is unscientific of me to assume that this is what it is doing, after Mrs. Snow's brilliantly penetrating studies of shag behaviour, which have appeared in recent numbers of "British Birds". According to this authority, who worked for years upon the shags of Lundy Island, almost every pose they adopt, or movement they make, is loaded with deep psychological implications. And so, unless we hold the key to the sign language of birds we are in no position to decide whether it is saying "I hate you" or "I love you", or just "I couldn't care less".

But we digress from our topic. Before we leave the Isle of May, let me refer to one more rather odd change of status. The European sparrow, which like European man, so successfully colonised the greater part of North America, having gained a foothold as a nesting species on the Isle of May has suddenly, and quite mysteriously, lost it again. For from 1927 to 1946 about six pairs remained as the more or less constant breeding population. In 1947, it appears, nesting was unsuccessful and all through the last sixteen years the island has been without resident sparrows.

Still thinking of changes in the status of various bird species, but moving from the regional, or parochial level of observations to the altogether wider,

national scale we may consider the case of the peregrine falcon, a raptorial bird of matchless splendour, indigenous to our islands and second to none in its powers of flight. In recent years, as you are aware, this species has come under heavy attack from the pigeon-fanciers; for the toll it takes of domestic pigeons was thought to be so serious as to merit control of peregrine numbers. Accordingly, in 1960, Nature Conservancy was asked to conduct an enquiry into the present numbers and distribution of British peregrines, and this body invited the British Trust for Ornithology to carry out the survey work involved. Dr. D. A. Ratcliffe's report on the enquiry was published this June in the pages of the B.T.O. periodical, "Bird-Study". I regard it as a Report of first-class importance, and I hasten to add that for anyone with the slightest interest in the fate of one of our finest British birds it makes very sombre reading indeed. You will see in a moment why this is so.

First let me emphasise that Dr. Ratcliffe's field investigations were tremendously thorough. Of 718 different territories in which peregrines have been known to attempt to nest at various times between 1930 and the present day, no less than 600 were visited and examined in the course of the enquiry. It is considered that an average annual level for the British breeding population of this bird in the period 1930-39 was about 650 pairs. How does the situation to-day compare? The tale Dr. Ratcliffe has to tell us is one of rapid decline in recent years. By 1961, 2/5ths of the pre-war population had disappeared altogether and only eighty-two pairs are known to have reared young. By 1962 the number of successful nestings had dwindled still further, to sixty-eight, a mere thirteen per cent of all the territories that Dr. Ratcliffe visited. Do not forget that quite a number of these stations had been known to be peregrine eyries for hundreds of years. What has been happening? Unfortunately, most of you probably know all too well what has been happening. The key lies in the last two lines of point 4 in Ratcliffe's summary. "Breakage and infertility of eggs, and sterility of the birds, often precede actual disappearance of peregrines".

I should interpolate the finding that even at the 1962 level of peregrine population this raptor was estimated to be responsible for the destruction of an annual total of 16,500 domestic pigeons, which constitute seventeen per cent of all prey taken over the country as a whole. That the peregrine would not seem to stand exactly vindicated on the charge that set the wheels of enquiry in motion is, however, quite overshadowed, in my view at least, by the dark picture that has emerged of the declining population of a splendid bird of prey. When we probe into the chain of events that has brought this about we can hardly fail to be most deeply disturbed.

This is the sequence of events. A clever organic chemist, juggling with the molecular structure of complex carbon compounds, hits upon something new. This is what Otto Diels did when he discovered the substance now known as dieldrin. This substance, swallowed, is five times as poisonous as D.D.T. When absorbed through the skin in solution it is forty times as powerful a poison as D.D.T. It belongs to a group of substances known as the chlorinated

hydrocarbons. Aldrin and heptachlor are two others in the same family. The second step is that, after appropriate tests, these new substances are incorporated in dressings and sprays which are judiciously marketed so as to attract progressive farmers and gardeners. They are applied, perhaps with a specific pest in view. They strike in fact at all directions and small birds eating grubs and seeds ingest tiny quantities of chlorinated hydrocarbons. Now it is a feature of this family of substances that the body has no machinery for breaking them down. Thus their effect is cumulative. A little more is taken in, then a little more again, perhaps by a pigeon. The pigeon is struck down by the lightning stoop of the peregrine and the dieldrin, or the aldrin or whatever it may be, from the pigeon's body passes into the tissues of the peregrine. That peregrine may not die, but it will never be quite the same again. It has been shown for example that as little as one part per million of dieldrin in its body tissues will suffice to impair fertility in the American quail; four to five p.p.m. can be lethal.

Now you will see the significance of my remark about Ratcliffe's finding that impaired fertility in peregrine falcons often preceded the disappearance of the birds themselves. For the final link in the chain, the last sad fact to clinch the case lies in the analyses that have been undertaken of addled eggs. The bewildered mother bird was found still patiently incubating them long after they should have hatched. On analysis they were found to contain, in one instance cited, no less than five different deadly organic poisons of this type, adding up to a total concentration of between four and five p.p.m.

Where, we may well wonder, will it all end? For let me remind you that in every so-called progressive country in the world sprays and dressings containing some of these, or other equally deadly new-found organic poisons are being used, too often one fears, with little thought for, or knowledge of, their far-reaching consequences. Pick up, as I did the other day, the Journal of Agriculture of Western Australia, or of Queensland, and as the recommended remedy against some insect pest you will see a preparation named which contains dieldrin, or aldrin, in this or that concentration. This is no local phenomenon but rather is it a world-wide campaign destined to upset what some of us still like to call the Balance of Nature, and to do this on a scale never seen before. Sharp-witted agricultural chemists may tell you to exercise more reason and less emotion in viewing the whole question of pesticides. I would remind them that it is not our sentimental imaginings but the cold facts which generate the emotion. Naturalists the world over owe Miss Rachel Carson more than they can say for her bold exposure of the position in the U.S.A. Without hesitation I would place "Silent Spring" as among the most important books to have appeared in recent years on the subject of natural history. When you have read it I think you will agree with me that it is also one of the most depressing. In its pages you can read of areas in the middle west where almost the whole population of song birds has been wiped out by mass spraying from the air against one rather trivial insect pest. You can read of lakes in matchless mountain scenery on which the beautiful western grebe once nested in numbers,

you will learn how these waters now lie still and silent and grebeless, for what seemed an infinitesimal dose of the poison D.D.T. was found within the fatty tissues of the dead grebes in the astonishing concentration of 1,600 p.p.m. You can read of the sudden catastrophic decline in the breeding numbers of the bald eagle, America's national bird, along that strip of the Florida coast where it has nested successfully as far back as records go. Now nest after nest lies with infertile eggs and few indeed are the nests from which young fly.

I submit that we are face to face here with regressive change, not just in this species or that, but in whole biological systems. And the irony of it is that in the never-ending battle against specific pests and pathogens we have other and better - and far, far safer methods to hand. Read Hugh Nicol's book, "Biological Control of Insects", and you will see some of the signal triumphs in this fascinating field where the biologist (or ecologist) is pitting one organism against another. The spectacularly successful control of prickly pear, an alien plant that once covered vast areas of eastern Australia and was controlled through the importation of an insect predator that fed naturally upon it, is but one example of many that could be quoted. Read the last chapter of "Silent Spring" and you will hear of new, exciting biological methods of control.

We do not have to delve very deeply to see that in time not only wild birds, beautiful insects (like many of our butterflies), countless fish and small mammals, and astronomical numbers of little organisms that die unknown and unlamented - not only these but our own livestock, our laying birds and pedigree animals - these too will be affected by the sinister new compounds which build up steadily in their bodies and disturb the delicately balanced mechanisms of enzyme action. We are throwing an alien spanner into the intricate machinery of life itself. And what happens when we do this? We do not yet know fully what happens - we may have to wait years to see the full results of our folly. But Miss Carson has many sinister bits of information for us. Man too has on occasion after occasion been struck down by the very poisons he has heralded as a boon. Evidence mounts that the dreaded failure of the bone marrow which we know as leukaemia may be caused in this way. He who has poisoned so much of wild nature thus ends by inadvertently poisoning himself. Regressive change sets in, not this time in a plant community, not this time in the status of a wild species like the peregrine, but in that other kind of community, one composed of billions and billions of diverse cells which live and work together for the lifelong welfare of an individual human being.

Here, you may be saying, is where the naturalist steps aside and the medical man moves in. But let us, as naturalists, not do so until we have pondered very carefully the present situation. Sometimes the professional biologist can take a leaf from the book of the non-scientist - the intelligent layman - who happens to be deeply interested in, and appreciative of, the natural scene. This is what I propose to do in my closing works. For I propose

to read to you what that astute poet, philosopher and critic Sir Herbert Read has to say as he looks back over a life-time of experience. The book he has written is in fact called "The Contrary Experience" and he is concerned as we have been to-night, with change, progressive and regressive. The chapter in question is called "A dearth of wild flowers" and it is the last but one in the book. He has been lamenting the vanished wild flowers of many a bank and roadverge of his native Yorkshire, the countryside he knew so well in childhood and to which he has returned more than half a century later. He compares the old with the new and this is what he says: "All modern developments - weed-killers, motor-cars, tractors, mechanization, tourism, the radio, the cinema, urbanization (words as ugly as the things they signify) - have combined to destroy the countryside that was evident to my innocent eye. There are improvements - in housing, in health services, in education - but the price that has been paid for them is not only the destruction of a society that may have been insufferably patriarchal, but the end of a way of life out of which whatever poetry and intelligence we possess arose as naturally as poppies and corn-flowers from the undisciplined earth. It has often been remarked how much of the genius of England is associated with the country house, particularly the parsonage. It is no less evident how much delinquency and crime are associated with the modern city. It may not be the city as such that breeds such a contrast: it is more likely to be the alienation of sensibility that is the inevitable consequence of mechanization. It is as simple as that: we have lost touch with things, lost the physical experience that comes from a direct contact with the organic processes of nature. The man who followed the plough felt a tremor conducted from the shining thrust of the coulter in the earth along his arms and into his heart. To dig, to harrow, to sow; to weed, to prune, to scythe; to walk, to ride, to swim; to watch the birth and death of animals; to be conscious of defecation and slow decay, bloom and rot; to participate with all one's senses in the magical rhythm of the seasons - all these are such elementally human experiences that to be deprived of them is to become something less than human. There has never been and never can be a civilization that is not rooted in such organic processes. We know it - instinctively we know it - and walk like blind animals into a darker age than history has ever known".

The philosophy of a pessimist, you will say, perhaps, but its essential message is clear. Lest you should accuse me of closing on too sombre a note, let me hasten to remind you that a "Silent Spring" in the sense of Miss Carson's nightmarish vision - has not yet come. Nightingales and wrens and blackcaps still sing in our land. It is for us, as naturalists, to try very hard to ensure that, like the rose that blossoms in Ivor Novello's famous song, they do so "till the end of time".

Chemicals and Water-supplies

by

Professor H. L. Hawkins, D.Sc., F.R.S., F.G.S.

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The discovery and production of supplies of pure water for domestic consumption is becoming an increasingly difficult problem owing to the rapid growth of population and the consequent multiplication of "built-up areas". This development inevitably increases the demand for water and at the same time restricts the areas from which uncontaminated supplies can be obtained. It is true that much can be done to rectify the quality of water that has already been used; most of our rivers are by now diluted streams of sewage-effluent, but this can be rendered safe and potable by simple, if expensive, means. Even the apparently innocent and hygienic use of detergents creates problems that are not yet solved. Most people will have seen the billows of froth that appear at weirs and other places where river-water is agitated. There is, as yet, no evidence to suggest that the consumption of detergents holds any serious danger for the health of the consumer; if it did, "washing-up" would be a dangerous performance!

The application to the soil of lethal chemicals in the guise of insecticides and weed-killers is a very different matter. Underground water owes its normal purity to the beneficent activity of bacteria which "sterilize" the rain-water as it soaks through the soil. If their numbers are reduced (still more if they are completely destroyed) the impurities lying on the ground pass down undiminished, reinforced in their potentially deadly properties by the diluted remains of the toxic chemicals. This means that water from springs and wells requires sterilization by artificial means as much as river-water, and even then may contain poisons to which no effective antidote is known. Of course these chemicals will be in very dilute solution, but many of them are of a cumulative nature, being stored up in the tissues of the consumer until they may reach dangerous concentrations. While admiring the zeal of the chemists in encouraging fertility of the soil, one can but deplore their activity in destroying it (for fertility applies to "weeds" as well as to the main crop). Although application of weed-killers and insecticides may produce short-term profits, the interference they cause in the cycle of natural processes is of a sort that must ultimately defeat its own ends. Chemists are very learned people (perhaps "clever" is a more appropriate term); but on one aspect of their activities they are quite and inevitably ignorant, for they have not been tampering with nature long enough to be able to assess the long-term effects of their operations.

One thing is certain; water is essential for life; the poisoning of wells and springs has always been regarded as one of the most dastardly acts of which men are capable. Somehow, and soon, the producers of our food must be taught that one cannot serve even Man and Mammon.

Branchiobdella astaci Odier (Oligochaeta, Annelida.)

in Reading

By C. J. Leeke, B.Sc., A.M.I. (Biol.) and A. Price

This is the first authenticated record of this worm in Britain. Specimens were obtained at an earlier date from Southampton University, but these may have been obtained from imported crayfish.

On 18th May, 1964 five crayfish, averaging 50 m.m. in length, were taken in a small stream near Burghfield Bridge, Reading. These crayfish were taken to the Basingstoke High School for dissection. During this dissection two girls discovered, on the gills of the crayfish, five 'leech-like' specimens. These were later identified as Branchiobdella sp. Dr. K. H. Mann of the Reading University subsequently confirmed the fact that they were Branchiobdella and added that they were B. astaci Odier. All of these specimens were sent to the British Museum (Natural History) at its request.

On 21st May, 1964 three crayfish were taken in the same stream near Burghfield Bridge, Reading, and two of them were found to be infested with this worm. On 5th July, 1964, three crayfish were caught in the Holy Brock near the position of the one time Southcote Manor Farm, Reading. They were 40 m.m., 55 m.m., and 68 mm. in length. The 40 m.m. specimen carried no worms, but both the larger crayfish were infested. The 68 m.m. crayfish carried thirty-two worms varying in length from newly hatched ones, 1.5 m.m. in length, to sexually mature ones, 10 m.m. in length. In view of the presence of all these worms in addition to twenty-one viable eggs and forty empty cocoons, it may be reasonably postulated that the whole life cycle takes place on the crayfish. On arriving home, two sexually mature worms were discovered on the outside of the carapace of the 68 m.m. crayfish. These worms were possibly looking for another crayfish to infest. So far no crayfish under 40 m.m. in length has been found to be infested. On 17th October, 1964 eight crayfish, A. pallipes, all in excess of 90 m.m. in length, were taken in an eel trap in the River Kennet, where it flows behind Elgar Road. Three of these crayfish were infested with B. astaci; the first by twenty cocoons and two worms between three and four m.m. in length; the second by thirty-five cocoons and three worms, and the third by more than one hundred cocoons and fifteen worms. All the cocoons were viable. The cocoons of B. astaci measure 0.42 m.m. x 0.35 m.m. Ten of these cocoons were examined to establish the number of eggs contained in one cocoon. In all cases the cocoon contained a single egg. An attempt was made to hatch some of the eggs which were removed from the gills of the crayfish, but this experiment was unsuccessful.

Locomotion in B. astaci resembles that in Pisciocola geometra (L). The leech, however, swims freely whilst the worm is unable to swim. The worm

progresses by using the posterior sucker and the fleshy mouth as a second point of attachment. If looked at in a superficial manner as it loops around a tank, it could be mistaken for the leech.

It has been suggested in many text books that Branchiobdellids are parasitic. C. J. Goodnight states that he established by dissection that they feed on unicellular algae and diatoms; these are carried to the worm by the respiratory current of the crayfish.

It is hoped that further work can be done to establish the distribution and the percentage of infestation, but crayfish are now rather scarce following the heavy winter of 1962/3 and crayfish disease.

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Some Notes on British Leeches (Hirudinea)

By A. Price

Feeding

After being used for photography, a collection of the following leeches was placed in an aquarium:- Erpobdella octoculata (L.) (6 specimens); E. testacea (Savigny) (1); Helobdella stagnalis (L.) (2); Glossiphonia complanata (L.) (5); G. heteroclita (L.) (1). No snails were present in the aquarium at this stage;

the only other animal present was a triclad, Dendrocoelum lacteum (Mull.). The leeches were starved for a period of seven to ten days and during this time the specimens of H. stagnalis were seen to have fed. The gut was clearly visible and red in colour. The source of this fluid was Erpobdella. A few days later some Tubifex worms were placed in the aquarium and Erpobdella immediately fed. A leech would stretch out its anterior end, and when its mouth made contact with one of the worms, it was swallowed with one swift gulp. Suction seemed to play a part in this as no movement of the anterior was apparent. One or two leeches did seize a worm by the middle instead of the end, but they did not succeed in swallowing a worm in this manner. A single leech would eat at least a dozen Tubifex in a few minutes. On 28th June, 1964 some small specimens of the snail, Limnaea pereger (Mull), were placed in the aquarium and within one minute all the Glossiphonia were feeding on the snails. Although there were more than sufficient snails to allow one leech to a snail, the Glossiphonia fed two or three to a snail. The anterior end of the leech was inserted between the snail's body and its shell.

On 16th June, 1957, some specimens of the Horse Leech, Haemopsis sanguisuga (L.) were taken in a grassy pond on the main road at Burghfield, near Reading. One of these leeches had a newt tadpole about 35 m.m. long protruding from its mouth. Whilst I watched it in the net it completed the swallowing of the newt tadpole.

In the River Loddon, very near to its source, on 4th November, 1961, I took a trout some nine inches long. On this trout I found eight specimens of the leech, Piscicola geometra (L.), evenly distributed over its body. How does this leech penetrate the scales of the trout with a proboscis containing no hard skeletal parts? I have not found an answer to this question in current literature.

Three specimens of the Medicinal Leech, Hirudo medicinalis L., were obtained from France through the firm of R. Brooks & Co. (Medicinal Products) of Covent Garden, for the purposes of photography. Whilst good slides were obtained in a glass tank, no luck attended my attempts to photograph it feeding on my hand. The camera and flash unit were set up but my 'star' would not perform. Tales told to me by my older sister about the successful application of leeches to troublesome chilblains had made me over confident. It seems that my Medicinal Leeches were too well fed when I received them. This fact was confirmed, when, due to the fact that I had to leave Reading for a few weeks, I killed them and found that they had regurgitated large quantities of blood into my pickling fluid. Hirudo can make one meal last from three to six months; how convenient in these busy times.

Eggs and Young

The following leeches have been seen, in their natural habitats, to carry eggs or young on their ventral surface:- Helobdella stagnalis, G. heteroclita, G. complanata, Hemiclepsis marginata O.F. Müller and Theromyzon tessulatum O.F.

Müller. When challenged by a specimen of Helobdella stagnalis, G. complanata almost turned itself into a tube to protect its young. Some small specimens of Hemiclepsis marginata, only 10 m.m. in length, have been seen on 17th August, 1964 carrying on their ventral surfaces between six and fifteen young. Both eggs and young were yellow in the early stages due to the presence of yolk. One very large specimen of T. tessulatum, about 45 m.m. long, was seen to be carrying eighty young on the ventral surface. The young were removed and counted. This specimen was taken at Penybac Farm, Kidwelly, Carmarthenshire on 30th July, 1964.

Leeches and Acid Water

Only on very rare occasions have leeches been found by the writer in water with a pH concentration as low as 5.5. I have kept the cocoons of Erpobdella in water of pH 5.5 and found that the leeches do not hatch. I hope to do a series of experiments to discover how long leeches will live in acid water.

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British Clearwing Moths

(Family Sesiidae)

By B. R. Baker, B.Sc., F.M.A., F.R.E.S.

Introduction

To the casual observer the insects of this family may appear to have little in common with the more normal types of moth which he encounters, for it is indeed true that in appearance clearwings have a marked resemblance to certain wasps and ichneumon-flies. Their wings are narrow and, for the greater part, devoid of scales - "clearwing" is therefore an apt description for any member of the family. The abdomen, which may have bands of a bright colour according to the species, is slender and its tip is furnished with a fan-like tuft of scales, these are especially prominent in the male moths.

Although on structural characters clearwings are classified into a super-family of the Micro-lepidoptera these insects are sought after by collectors of both "macros" and "micros" by reason of their interesting life histories and often large size (wing-span range 12 - 40 mm.). Good accounts and coloured plates are included in volume 2 of Richard South's book "The Moths of the British Isles".

One of the absorbing interests of collecting clearwings is that there is no easy way of taking the adults, such as light-trapping (they are day-flying moths), and therefore one has to search for the immature stages or know the particular positions and times of day where adults might be found. All the adult moths emerge in the early morning, especially under the influence of sunshine, and may be found sitting on the foliage or trunks of certain trees and shrubs until mid-morning (from 7 - 11 a.m. in the writer's experience). After this time the moths are seldom seen unless the day is cloudy or wet when flight seems (not unnaturally) to be inhibited.

Over 100 different species of clearwings are known from the Palaearctic region and 15 have so far been discovered in Britain. Of these 15, 11 have been recorded from the Reading area.

Life History

The eggs are laid in chinks of bark or on stems, and the caterpillars are all internal feeders in the stems, branches and roots of various trees and shrubs, or in the crowns and roots of certain low growing plants. The caterpillars are maggot-like in appearance and whitish coloured. This whitish colouration is presumably correlated to the fact that the larvae are never exposed in nature to the view of predators whereas other internal feeders such as the Goat Moth, Cossus cossus (L.), which makes a sometimes lengthy excursion from its host tree to pupate, is deeply pigmented. Although feeding within the solid wood, the larvae are nevertheless still preyed upon by birds. Some of the alder stems at Pamber Forest, Hants, have been observed bearing numerous stab marks where 'trial digs' have taken place in the bird's attempt (often successful) to locate larvae or pupae.

Insects whose larvae feed in the wood of trees are known to have lengthy life-cycles, and that of many clearwings extends to two years.

The chief constituents of wood are cellulose and lignin, and whereas the latter never seems to be digested by any species of insect, enzymes capable of breaking down cellulose have been discovered in the mid-gut of many beetle larvae. These cellulases are not yet known (as far as I am aware) from moth larvae, and little work, if any, seems to have been undertaken on clearwings in particular. It may prove that the digestive enzymes of clearwings will prove similar in composition to those of the Goat Moth, which, though able to utilise reserve cellulose, is largely dependent on the starch and sugar in the

wood. Such larvae have to excavate considerable tunnels in order to fulfil their food requirements and the amount of available carbohydrate is probably a limiting factor in the rate of growth. It is interesting to read that if goat-moth larvae are fed upon beetroot the normal three year life-cycle is reduced to a single year (Wigglesworth, 1953). It would be an intriguing experiment to take such larvae as those of the poplar-feeding Hornet Clearwing Moth Sesia apiformis (Clerck) and try them on a root-crop to determine whether they too would mature in a single year instead of the normal two.

When fully developed, clearwing larvae pupate within the wood of their foodplant (or in a specially constructed tube in the case of feeders on low growing plants) - a thin membrane of bark being left intact over the opening of the emergence tunnel. These 'caps' may be coloured slightly at variance with the general colour of the stems and thereby give some clue as to the position of the pupal chamber - frequently however no colour guide is present.

The pupae have well chitinised heads for ascending the larval tunnel and for rupturing the exit cap - rows of minute spines on the abdomen also assist the pupa in its climb, and by means of these structures and a screw-like action of the abdomen the pupa literally screws itself (for at least two-thirds of its length) out of the stem before splitting and releasing the perfect insect.

Although adult clearwing moths are normally seldom seen the practice of 'sembling' will readily attract often large numbers. ('Sembling' is an easy exercise and only involves taking a captive virgin female moth to a favoured locality, putting her in a muslin cage suspended from a tree or bush, and waiting for results).

Notes on Species recorded from the Reading area

Sesia apiformis (Clerck). The Hornet Clearwing: A large species reaching 40 mm. wingspan, decidedly hornet-like in appearance. Larvae tunnel in black poplars and aspens - usually well-grown trees. Two-year life-cycle. Moths emerge at the end of the second week of June and may be seen resting on favoured trunks, 7 - 8 a.m.

Localities: Poplars in fields of Bucknell's Farm, and in Coley Recreation Ground, Reading. Scarce due to tree felling. Look for holes (pencil diameter) at base of poplars - it must exist elsewhere in our area.

Sphecia bembeciformis (Hubn.) Osier Hornet Clearwing: Another large species 35 mm. wingspan. Larvae in bases of well-grown sallows - especially those growing in marshy areas. Two-year life-cycle. Moths appear throughout July and sit low down on trunks just after emergence until mid-morning.

Localities: Marshy areas of the Kennet valley, also sallows at Burghfield and Pamber Forest, Hants. Cut sallows noticed one spring near Woolhampton indicated heavy infestation.

Aegeria sphecoformis (Schiff.) White-barred Clearwing: Wingspan 28 - 30 mm., abdomen with a conspicuous white belt at base of first segment. Larvae in stems and trunks of alder. Two-year life-cycle. 'Sawdust' issuing from bases of trunks indicates presence of larvae. Search in May when 'Sawdust' from fully grown larvae has dried paler in colour than the damp orange dust which first-year larvae are still producing. Tunnel caps sometimes plum-coloured - bending of thinner stem - bases rupture some of the caps and indicate emergence hole. Moths appear from end of May to mid June. Localities: Pamber Forest, Hants; Wokefield Common, Berks. 'Sembling' has produced very effective results at Pamber Forest, 1959, 1962.

Aegeria andrenaeformis (Lasp.) Orange-tailed Clearwing: Wingspan 15 - 18 mm. Abdomen with two yellow belts and orange tuft at tip. Larvae in stems of wayfaring tree; at least a two-year life-cycle. Best time to search stems is April when bushes leafless and old emergence holes (blackened in colour) more easily visible. Caps over emergence-holes often sink a little lower than level of surrounding bark. Caps sometimes fall off revealing reddish-coloured emergence hole (cf. black-coloured holes of previous years). Localities: Berkshire Downs, Streatley area; slopes at Hardwick, Oxon; slopes near Fawley, Bucks.

Aegeria tipuliformis (Clerck.) Currant Clearwing: Wingspan 15 - 18 mm. Abdomen with four yellow belts in male, three in female. Life-cycle probably lasts only one year. Larvae in stems of black and red-currant bushes, also in gooseberry; sign of infestation - larval frass (excrement) issuing from ends of shoots in early spring. Said to be the commonest British clearwing occurring wherever currants are grown (not so in the writer's experience around Reading).

Localities: Allotments at Tilehurst, Berks (Dr. L. H. Williams)

Aegeria flaviventris Staud. Sallow Clearwing: Wingspan 15 - 18 mm. The most recently discovered clearwing in Britain (1926). Larvae in stems of sallow, usually those $\frac{1}{4}$ - $\frac{1}{2}$ " in diameter. In its second winter the larva induces the sallow stem to form a pear-shaped gall about $\frac{1}{2}$ " in width, mostly evenly tapered (cf. galls of Saperda beetles, which are uneven). Winter moths are the best time to collect the galls, the earlier the better as birds also join in the search. It is a strange fact that galls seem to appear only in odd-even winters - did flaviventris evolve only at one time back through the aeons of years and keep to a timetable ever since? Localities: Owlsmoor, Berks. Galls also noticed at Pamber Forest and Hook Common, Hants.

N.B. This clearwing is very similar in appearance to the currant species but can easily be separated by an inspection of the under-side of the abdomen - flaviventris has a suffusion of yellow scaling on ventral segments 4 - 6 inclusive, whilst those of tipuliformis are almost entirely black except between the rings. legged

Aegeria vespiformis (L.) Yellow Clearwing: Wingspan 18 - 21 mm. Abdomen well ringed with yellow, tail tuft black in male, yellow in female, cross-bar of wings orange in both sexes. Larvae live below the bark of oaks and are

best detected in stumps from which the main tree has been felled the previous year. Frass issuing from between the bark and other wood indicates presence of larvae - stumps are best examined in May. Larvae make tough cocoons below the layer of bark - one year life-cycle. Moths emerge over a long period - May until late August.

Localities: Pamber Forest, Hants; Arborfield, Berks; and probably anywhere in our area where oak felling has recently taken place.

Aegeria myopaeformis (Borkh.) Red-belted Clearwing: Wingspan 19 - 22 mm.

Larvae occur in the trunks and larger branches of neglected apple trees, and often burrow under the bark at the edges of wounds. Adults with a single red belt on the abdomen in both sexes. Reddish frass hanging from cracks in the bark towards the end of winter indicates presence of this species. Life cycle one year. Cocoons are formed below bark in April. Adults appear in May and June.

Localities: Although recorded from Reading gardens (Cocks and Dolton Collection at Reading Museum) the writer has as yet not found this species locally in spite of a careful examination of a particularly degenerate apple orchard shown to him by Mr. Arthur Price.

Aegeria culiciformis (L.) Large Red-belted Clearwing: Wingspan 22 - 25 mm.

Abdomen coloured as in the preceding species, but wing-bases with dusting of reddish scales. Larvae occur in birch trees and bushes, mining between the bark and the inner wood. Cut stumps left in the ground are particularly easy sites for detecting larvae, whose frass is often visible as 'sawdust' on top of the stump. By late April the larvae will have constructed cocoons on the inner side of the bark - careful prising off this bark will leave the cocoons intact. Apart from the frass (which may have blown away by pupation time), the only external sign of a tonanted stump is a small hole between bark and wood. This is the earliest species to emerge in the year, appearing on the wing in early May.

Localities: Probably generally over our heathy areas, noted especially at Burghfield and Padworth, Berks.

Aegeria formicaeformis (Esp.) Red-tipped Clearwing: Wingspan 20 - 22 mm.

Abdomen with red belt as in preceding two species, but clearly differentiated by red tips on the forewings. Larvae occur below the bark of osiers and other sallows and willows; they are said to prefer damaged wood. Borings occur in twigs, branches and trunks but there is little external sign to guide the searcher. The emergence holes of a previous season (Blackened with age) are of some help. I am informed that this species occasionally galls sawallow stems in the manner of flaviventris, but have not yet been fortunate to breed out any formicaeformis from stocks of galled stems. Adults occur throughout June - in a poor summer emergences have been noted as late as August.

Localities: Messrs. Cocks and Dolton found this species in our area as witnessed by the collection in Reading Museum, but recent records from Reading and district are lacking.

Dipsosphacia scopigera (Scop.) Six-belted Clearwing; Wingspan 14 - 20 mm.

Abdomen with seven yellow belts in male, six in female, wings prettily

marked with orange on inner and outer margins, cross-bar also edged with orange on outer side. Larvae in roots of kidney vetch and bird's foot trefoil - single year life-cycle. This species is best discovered by working the grasses and other vegetation of chalky slopes with a sweep net, i.e. this is one of the few instances where it is easier to obtain adults instead of larvae or pupae. The books tell us that after finding a few adults by sweeping it is far better to search the vegetation for the resting moths thereby obtaining specimens in finer condition. From my experience the resting moths must be remarkably well hidden for I have yet to discover one.

Localities: Discovered on a chalk slope near Fawley, Bucks, by our members Mr. Jon Cole and Mr. Arthur Price. Subsequent investigations have revealed a thriving colony. Also recorded from the Berkshire Downs.

Species from other parts of Britain

Sciapteron tabaniformis (Rott.) The Clear Underwing: Wingspan 30 mm.

Abdomen with three yellow belts, forewings completely covered with blackish scales, underwings clear. Larvae feed in the stems and branches of willows and poplars, said to induce a swelling in the stem from which frass is extruded. The moth flies in June and July but has been taken in Britain only on rare occasions. Its occurrence in this country is said to be due to the larvae being imported with Lombardy poplars. Records are known from Kent, Essex and Middlesex, all referring to last century. There are only two published records for this century (Cosham, Hants, and Team Valley, Durham); Bretherton (1951) has seen a specimen labelled "R. Swift, Tubney Berks, June, 1924". Here then is an opportunity for original research in our own area.

Aegeria scoliaeformis (Borkh.) The Welsh Clearwing: Wingspan 33 - 34 mm.

Abdomen with a whitish belt and tip with a tuft of reddish scales. Larvae occur on the inner bark of old birches, giving external frass as a guide sign - life-cycle three years. Locally common in Scotland, Wales, southern Ireland and northern England - also reported from Hereford and Wiltshire.

Aegeria muscaeformis Esp. The Thrift Clearwing: Wingspan 14 - 17 mm. Abdomen

with three whitish bands and a mid-dorsal whitish streak. Larvae in the roots of sea thrift. Adults occur in late June and early July. Recorded from the rocky coasts of Devon, Cornwall, Isle of Man, Aberdeenshire and several places in Ireland. A little red patch of frass on the cushion of thrift is said to be the guide sign to the larvae.

Aegeria chrysidiformis (Esp.) The Fiery Clearwing: Wingspan 18 - 20 mm.

Abdomen with two pale yellow belts. Forewings and tail-tuft orange-red. Larvae in the roots of dock and sorrel. Adults in late June and early July. Recorded mainly from Kent, especially Folkestone Warren.

Concluding Remarks

From the foregoing remarks it may be deduced that the enthusiast who wishes to collect a representative number of our British clearwings must be

possessed of a small portable carpenter's tool-set, an open season ticket on British Railways and endless patience! In point of fact, with eleven of the known fifteen British species occurring in our own district, the study of clearwings can become an absorbing pastime, especially as much of the work can be carried out during the winter months when field natural-history pursuits can drop to a low ebb.

On the Continent, species of clearwing, yet to be discovered in Britain, are associated with juniper, raspberries and several conifers; there is therefore plenty of scope for the naturalist who would like to add to the meagre British list of these interesting little insects.

Clearwing moths (adults) may but rarely come to the notice of competent field naturalists unless a technique such as 'sembling' is tried. This, as mentioned in the Introduction to this paper, is quite an easy experiment once one has bred out a female moth, and the sight of a small cloud of males appearing as if from nowhere will transform a perhaps dull textbook passage into a long-remembered observation of a natural happening which we would otherwise probably never witness.

Whatever your interests, when next in the country you observe a wasp, look again, it may be a harmless moth!

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An Introduction and Interim List of Syrphidae of the Reading Area

A Correction by J. H. Cole, B.Sc.

Syrphus compositarum Verrall and Chrysogaster macquarti Loew., which were included in my list of hover flies (Dipt. Syrphidae) taken in the Reading area (Reading Naturalist 11, 1959), were unfortunately later found to have been misidentified and should be deleted.

The Recorder's Report for Entomology

1963 - 64

By B. R. Baker

Order Orthoptera (Grasshoppers, Bush Crickets etc.)

The following records were all made on 30th June when the Recorder was taken by Dr. Eric Burttt to observe nymphal Orthoptera in the Chilterns:

Omocestus viridulus (L.) Verdant Grasshopper
Stenobothrus lineatus (Panz.) Lined Green Grasshopper
Chorthippus parallelus (Zett.) Meadow Grasshopper

All the above species were found in some abundance, either by searching or by sweeping grasses, on the slopes above Ipsden, Oxon.

Leptophyes punctatissima (Bosc) Speckled Bush-Cricket. A good colony evidently exists west of Mapledurham close to where the Warren enters the east gate of Hardwick Estate.

Tettigonia viridissima (L.) Great Green Bush-Cricket. This large bush-cricket formerly existed in a colony close to the Hardwick Estate, but appears to have been lost, probably associated with ploughing up of the chalk down and recent hedge removal. It is therefore very encouraging to learn that Dr. Burttt has discovered a new colony in the Ipsden area where the insect appears to have a preference for ground having a good growth of Rest Harrow.

T. viridissima is often abundant on coastal downland, especially in Dorset - records from inland areas are therefore always of interest. Should any members discover a large green bush-cricket (2 - 2½" in length) on any of our local downs the Recorder would be pleased to have the record. Nymph observed near Ipsden, Oxon, 30th June, 1964.

Order Trichoptera (Caddis-flies)

Limnephilus xanthodes McJ. Abundant on Cothill Fen, Berkshire, 6th June, 1964.

This species had previously been recorded for the county by Rev. L. W. Grensted, but in our work on this order over the past ten years we had not been fortunate enough to discover L. xanthodes until this past season.

Order Lepidoptera (Butterflies and moths)

Migrant Species

Vanessa atalanta (L.) Single specimens of this butterfly were noticed in widely separated localities in May (24th, Finchampstead Ridges during our Nature Trail; 28th, Stonehenge Common, Wilts; and 29th, Henfield, Sussex), thereby indicating a widespread immigration. The species was well in evidence in local gardens during the autumn, these being progeny from the earlier immigrants.

Vanessa cardui (L.) Painted Lady. This species visits Britain with much less regularity than does the Red Admiral, but 1964 has been a good year for both species. An early cardui was seen in Savernake Forest, Wilts. on 18th May, whilst in the more likely area of Dungeness Peninsula many were observed in mid June. From such early arrivals one would expect later signs of a larger British bred population, and so it proved to be with Painted Ladies present in town gardens on buddleias and michaelmas daisies from August until early October.

Acherontia atropos (L.) Death's Head Hawkmoth. Two larvae were found feeding on jasmine at Cray House, Harpsden Woods, Henley-on-Thames, on 16th August (W. R. Vincent) and shown to us at the Museum. These produced moths on 23rd September. A further larva was found feeding on potatoes at Cholsey Berks., on 13th August (E. M. Raynor) and brought to the Museum in a box of soil on 27th August. The adult emerged on 9th October. There were other reports of atropos from the Henley and Cholsey districts and had a search of potato fields in those areas been possible it is very likely that a number of larvae would have been discovered.

Herse convolvuli (L.) Convolvulus Hawkmoth. Two specimens of this immigrant hawkmoth were brought to the Museum during September:-
September 3rd - Whitchall Lane, Checkendon, (A. E. Cox)
15th - Blandford Road, Whitley Estate, Reading, (G. Saunders)
Both specimens were female and were subsequently released.

Macroglossa stellatarum (L.) Humming-bird Hawkmoth. A single specimen recorded from Medmenham, Bucks, 13th June (T. Harman).

Nycterosea obstipata (F.) The Gem. Medmenham, Bucks, 12th May (T. Harman); single specimen.

Notes on Resident Species

Apatura iris (L.) Purple Emperor. A larva beaten from sallow at Pamber Forest Hants, 30th May; an adult observed flying round oaks in the same locality, 19th July.

Odontosia carmelita (Esp.) Scarce Prominent Moth. Several specimens to light at Padworth, Berks, 1st May.

Tethea or (Schiff.) Poplar Lutestring. Pamber Forest, Hants., 30th May (2); 26th June (2).

Lithosia quadra (L.) Large Footman. Pamber Forest, Hants., 18th July (2). Probably better considered as immigrants as further specimens recorded from widespread localities in southern counties during July.

Eilema deplana (Esp.) Buff Footman. Pamber Forest, Hants., 18th July (1) An uncommon species around Reading according to records to date - possibly colonies exist in unworked areas.

Amathes glareosa (Esp.) Autumnal Rustic. Recorded on several excursions to Pamber Heath, Hants., in early September (T. Harman and T. J. H. Homer).

Amathes castanea (Esp.) Neglected Rustic. Recorded on several excursions to Pamber Heath, Hants., in early September. (T. Harman and T. J. H. Homer).

Parastichtis suspecta (Hubn.) The Suspected. Pamber Forest, Hants. Several records in mid-July.

- Hapalotis venustula (Hubn.) The Rosy Marbled. Medmenham, Bucks. (1), 12th June. Pamber Forest, Hants. (1), 30th May. (T. Harman). These are two noteworthy records, and the first ones from our area. To record a new species from such a well-worked locality as Pamber Forest is a rare event these days. H. venustula is a tiny moth by 'macro' standards - this, together with its habit of flying among bracken (under favourable weather conditions) may explain its having been overlooked by more than one generation of lepidopterists.
- Trisateles emortualis (Schiff.) The Olive Crescent. Medmenham, Bucks. (2), 27th June. (T. Harman). This rare species also appeared in at least two other localities in the Chilterns in 1964 and we await with considerable interest the investigations which are planned for 1965.
- Perizona bifaciata (Haw.) Barred Rivulet. Medmenham, Bucks. (1), 12th August. (T. Harman).
- Colostigia multistrigaria (Haw.) Early Carpet. Aston Upthorpe Downs, Berks, (1), 18th April. This specimen was tapped from a juniper bush by Messrs. Price and Cole on the occasion of the Society's excursion to the Pasque Flower ground. The Downs seem an unusual locality for this species which more normally frequents damp heaths and woodland - its foodplant (Galium) is however present in quantity in dry valleys on the Downs and multistrigaria may prove to be present in some strength. This moth has but rarely been recorded at all in our area.
- Euphyia cuculata (Hufn.) Royal Mantle. Pamber Forest, Hants. (1), 18th July. Here we have the reverse situation to that quoted above, i.e. cuculata has long been known from several Chiltern slopes but never (to the Recorder's knowledge) from a large woodland area such as Pamber Forest. The food-plant is again Galium spp.
- Eulype hastata (L.) Large Argent and Sable. Pamber Forest, Hants. (1), 23rd May. Far less common now than in the early '40's.
- Eupithecia insigniata (Hubn.) Pinion-Spotted Pug. Medmenham, Bucks, on several occasions (T. Harman).
- Dyscia fagaria (Thunb.) Grey Scalloped Bar. Pamber Heath, Hants. (1), 23rd May, (T. H: T. J. H: B. R. B.)
- Cepphis advenaria (Hubn.) Little Thorn. Pamber Forest, Hants. A very localised species, usually to be found in only a limited area of the forest where it continues to flourish.
- Anagoga pulveraria (L.) Barred Umber. Pamber Forest Hants. (4), 30th May.
Order Coleoptera (Beetles) (T.H: T.J.H: B.R.B.)

The notes relating to this Order of insects have been submitted by
Mr. Arthur Price:-

- 3rd November The water beetles, Coelambus impressopunctatus Schaller (3) and Rantus pulverosus (Stephens) (3), were found in a teneral condition near Caversham Bridge.
- 8th December Twelve specimens of Agabus labiatus (Brahm) in an acid pond on Wokefield Common, Berks. This pond, which had been 'fished' on 8th, 19th, 29th September and again on 6th October

and yielded none of this species, dried up in early October. By 8th December the pond again had water in it and the beetles were present - by what means had they reached water, for it is a well established fact that this species is incapable of flight ?

- 18th April Otiorrhynchus clavipes (Bonsdorff). Aston Upthorpe Downs (2), beaten from juniper bushes.
- 19th May Deronectes latus (Stephens). Small fast flowing stream near Tidmarsh, Berks. (1). This is only the second specimen encountered over a period of seven years.
- 20th May Gyrinus marinus Gyll. Caversham Park near Reading, (6) from the artificial lake there.
- 20th May Saperda populnea (L.) Woolmer, north Hampshire. Sallow galls collected on a very snowy day (14th March), produced a fine specimen of this longicorn beetle and a further example on 6th June.
- 11th June Strangalia maculata (Poda) A pair of these longicorn beetles were found in copula on the occasion of our Junior Section excursion to Mrs. Tucker's garden at Barkham Common, Berks.
- 11th July Serica brunnea (L.) Pamber Heath, Hants. (BRB) Attracted to mercury vapour light.
- 18th July Stenocorus meridianus (L.) Thatcham, Berks. (J. H. Cole). A single specimen found on hogweed.

Mr. Leatherdale reports that 1964 has been a good year for plant galls and mentions the following species of particular interest.

Order Hemiptera (Plant Bugs, Leaf Hoppers, Aphids etc.)

Pemphigus spirothecae (Pass.) The spiral galls of this species were found on Populus nigra or P. serotina in Reading in late August (A. M. Simmonds). Another species (P. gairi) has very recently been described by H. L. G. Stroyan as causing similar galls, and it is as well to have authenticated records of the older species (determination by Stroyan).

Livia juncorum (Latr.) Hazeley Heath, 12th September. A beautiful specimen of the imbricated gall of this species was found on Juncus conglomeratus

Order Hymenoptera (Bees, Ants, Wasps etc.)

Aulacidea hieracii (Bouche) Although most of the Cynipid wasps cause galls on Quercus, and to a lesser extent on Rosa, a few cause galls on unrelated plants. One of these, A. hieracii (Bouche) on Hieracium sp. was found at Hazeley Heath on 12th September. The galls were crammed with mature larvae in a single, large chamber; the gall itself was remarkably woody and proved difficult to section with a penknife.

Order Diptera (True Flies) Mr. Jon Cole has supplied the following list of rare or scarce Diptera which, with three exceptions, were all noted in 1964:

Tipulidae (Crane-flies)

Tipula nubeculosa Meig. Pamber Forest, Hants. 13th June, 1 female.

T. livida v.d. Whulp. Coneyberry Wood, Goring. August, 1963, 1 male. 2 females. This crane-fly was first discovered in Britian in 1954 and has since been found in several southern localities.

Limonia (Dicranomyia) lucida (de Meij.) Thatcham reed beds. 19th July, 1 male.

Rhagionidae (Snipe-flies)

Rhagio strigosa Meig. Streatley Hill, Berks. 23rd July, 1956; 23rd July, 1963. 2 females. This very interesting fly was first discovered in Britain on Box Hill, Surrey, in 1954. The above records are the first from any other locality.

Empididae

Stilpnubila Collin Goring September and October, 1964. Numbers of this minute fly in a greenhouse.

Elaphropeza ephippiata Fallen Hartslock Woods, Oxon, 4th June; 3rd August, 3 males; 1 female.

Tachydromia leucothrix Strobl. Streatly Hill, Berks. 1st July. 1 female.

Tachypeza fuscipennis (Fallen) Hartslock Woods, Oxon. 13th May. A male bred from grass roots found growing on a rotten stump

Trichinomyia flavipes Meig. Goring, Oxon., 3rd - 11th October. 3 males, 1 female.

Leptopeza flavipes Meig. Hartslock Woods, Oxon. 3rd June. 1 male.

Rhamphomyia (Amydroneura) hirsutipes Collin Goring, Oxon. 3rd October. 1 male.

Empis (Polylepharis) opaca Meig. Padworth Gulley, Berks. 9th May. 1 male.

Hilara lurida (Fallen) Hartslock Woods, Oxon. 13th May. A male bred from grass roots growing on a rotten stump.

H. lugubris (Zett.) Pamber Forest, Hants. 13th June. 3 females.

Conopidae

Conops strigata Wied. Pamber Forest, Hants. 24th August. 2 males.

Conopilla ceriaeformis (Meig.) Pamber Forest, Hants. 24th August. 1 male. Both of the above species are striking solitary wasp mimics whose larvae are internal parasites of wasps.

Tachinidae

Alophora pusilla Meig. Goring, Oxon. 8th July. 1 male; Thatcham, Berks. 27th August. 1 male.

The larvae of this species are internal parasites of the bugs Cydnius and Chilacis

Echinomyia grossa (L.) Pamber Forest, Hants. 15th August (specimen seen).

A large bumble-bee-like fly, all black except head which is yellow.

Locally common but not seen by J. H. C. previously in Reading area.

Trichopareia blanda (Fallen) Pamber Forest, Hants. 15th August. 1 female.

Larvae parasitic in crane-fly larvae.

Actia anomala (Zett.) Pamber Forest, Hants. 15th August. 1 male. Larvae are parasitic in certain Geometrid caterpillars. A northern and western species.

Calliphoridae (Blow-flies etc.)

Parafeburia maculata Fallen. Goring, Oxon. 5th August. 1 female. Larvae

parasitic in woodlice. Generally distributed, but rare.

Pachyophthalmus signatus (Meig.) Goring, Oxon. 1st July. 1 male. Larvae in nests of bees or wasps. Widespread, but rare.

Eggisops pecchiolii Rond. Hartslock Woods, Oxon. 3rd June. 1 female. Larvae parasitic in snails.

Cynomyia mortuorum (L.) This striking blow-fly is scarce in southern England but seems to have established itself in Coneyberry Wood, Goring Oxon. Here it has been observed in 1958, 1962 (pair in copula), and on several occasions this year. The larvae are usually to be found in carrion.

The Recorder thanks all the contributors who have sent in material for this report (their names are given against the appropriate records), and would also express his indebtedness to the Director of Reading Museum, Mr. T. L. Gwatkin, for allowing inclusion of those records kept at the Museum.

Report from the Recorder for Ornithology

By E. V. Watson

For a fuller account of bird observations in the Reading area members are referred again to the appropriate Reports (for 1963 and 1964) of the Reading Ornithological Club.

I have received a single large contribution from M. H. Carter of the Reading Museum, and in view of its considerable interest it may usefully form the main substance of this Report. Mr. Carter groups his observations by related species and arranges them in the recognised 'Wetmore' order. His full statement follows.

"Canada Geese have evidently enjoyed a most successful breeding season in 1964. The wintering flock at Sonning Eye Gravel Pit now numbers over 50 (first week November) and may still be increasing. With them at present is an Emperor Goose which has escaped from the collection at Eversley. I first saw it at Sonning Eye on 8th April and it continued to associate with Canada Geese there until 7th May. For a while it attached itself to one of them, but as the season advanced the bond between this ill-assorted "pair" became looser and finally broke up, while the Canada pairs became more constant in their devotion. Later in the summer the Emperor turned up with a Canada flock on the gravel pit at Theale, where it remained at least until 21st October. On 28th October it was back at Sonning Eye where it remains at the time of writing.

A small group of Mute Swans were heard "flying blind" in or over the fog

at Emmer Green on 20th January, long after nightfall (7.15 p.m.) and more than 200 feet above the river valley.

1964 was memorable for an exceptionally heavy immigration of Quail. Once a common summer visitor, during the present century Quail have become rare, though still making annual appearances in a few favoured localities. During 1964 they were reported from many parts of the country. My first encounter with the species was on Cobler Hill, overlooking North Stoke at the western extremity of the Chilterns. Here I heard a calling male shortly before sunset on 4th July. The possibility of meeting Quail nearer home had already been raised by my wife, who reported seeing two birds "like very small Partridges" from the car as they flew across the Peppard Road near the Sonning Common sewage works. I listened in the area with negative results, but on 11th July, while feeding my son's rabbit in my own garden at dusk, I heard the now familiar "Quip-pip-pip" which I traced to a large field of barley on Chalk House Farm. There was probably more than one male involved, and I continued to hear birds there intermittently until 29th July.

Finally I went on 3rd August to Aldworth whence I walked northwards in the hope of finding more Quail. It was not until 7.41 p.m. (G.M.T.) that I heard one, on the western slopes of Lowbury Hill. The groups of calls lengthened from 2 to 5, and increased in frequency from 1 to 4 groups per minute as the sun was setting - it was half-way below the horizon at 7.46. After 8.15 the frequency slowly diminished, and at 8.17 a second male joined in with a burst of 7 calls, followed by groups of 5 delivered at a rate of 3 a minute until 8.20, when both birds had slowed down to one or two groups a minute. They continued calling at least till 8.40 p.m.

As I approached more closely, the calls sounded sharper in tone, approaching the noise of a whip-lash, and at 25 yards I could distinctly hear the grunting "Greeoweep" which preceded each group of calls. When I finally withdrew, the calls remained distinctly audible up to 750 yds, when they were cut off by an intervening ridge. Over level ground I think they would have carried half a mile at least, and even further across a valley. I never saw a single Quail throughout the summer.

The wintering flock of Lapwings on Bishoplands Farm, East of Sonning Common was driven away by a heavy fall of snow on 15th February. By 18th February the snow had cleared, but the only birds to return were the three pairs which remained through the summer to breed.

The resident Moorhens on the pond behind the Post Office at Emmer Green departed when the pond was contaminated with sewage following heavy rains early in the year. At least one breeding pair returned during the summer, and on 25th October I counted a record 14 Moorhens on this one small pond, which has also been stocked with white domestic Ducks. Some of these have been reported killed by boys, but the Moorhens, making expert use of dense cover on three sides of the pond have survived. On Sonning Eye North (Old) Gravel Pit, on 7th October, I

watched two Moorhens fighting in the manner usually attributed to Coots. Each bird sat upright on the water, kicking forwards with both legs and splashing with the wings. I do not think either actually made physical contact with its opponent, but both must have endured a thorough wetting.

A flock of some 300 Lesser Black-backed Gulls gathered at Manor Farm, feeding, as they so often do in the Reading area, on the rubbish dump, and were seen on 18th September.

I have seen single Terns, probably Common Terns on passage, on two occasions this year, each time heading West; once over the Thames at Christchurch Meadow on 9th August, and once on 18th September over the Kennet near the railway bridge carrying the branch line to Basingstoke. On the second occasion two birds appeared in quick succession, but not so near as to be within sight of each other. It is barely possible that a single bird circled round far from the river and was seen twice, but despite a careful look-out I saw no sign that this was the case.

A late Cuckoo, in very red juvenile plumage, was seen by myself and other members of the Society on an island in the old gravel pit near the Cunning Man at Burghfield on 2nd September.

A party of 5 Jays were chasing one another around Alder Copse, Tilehurst on 8th January, calling and displaying. They were uttering a double Crow-like croaking note, a deep "chuck" and a rattling call. The first and last are no doubt the notes recorded in the "Handbook of British Birds" as typical of ceremonial gatherings of Jays in spring, normally later in the year than my observation.

Tree-creepers have become much more numerous in South Oxfordshire during the last two years; possibly they have been encouraged by the fall in numbers of Woodpeckers and to a lesser extent of Nuthatches.

Two Grasshopper Warblers were heard, by myself and others, "reeling" regularly at Chalkhouse Green, between Reading and Sonning Common during the summer.

Goldcrests have still failed to recover from the winter of 1962-63. My only records this year are from Central Wales and the far west of Wiltshire.

A juvenile Grey Wagtail has for many weeks been frequenting the Holy Brook at the back of Gun Street. Though I have often heard it calling while I was at work in the Museum store there, I never managed to see and identify it till October 28th; consequently the earlier occasions do not appear in my records, though the bird cannot have been hatched before this summer. Pied Wagtails are not uncommon in towns, but it is an unusual experience to watch the Grey species bobbing along the metal roofs among the Sparrows (which were unfriendly).

This has been a good year for the Yellow Wagtail along the Thames and at Sonning Eye Gravel Pit.

The Corn Bunting, which has been nesting for years in the area of Bishopsland Farm, has recently been extending its range. A chain of 8 occupied territories now extends from Kidmore Lane, Sonning Common, eastwards to Marsh Lane, Sonning Eye, and in 1963 I found singing males just south of Shiplake I did not search this area in 1964."

These then are the contribution of one keen and active observer. It is interesting to note that he feels able on a number of occasions to make judgments about the changing status of a species - as with Tree Creepers, Woodpeckers, and breeding Corn Buntings. Only very regular observations over a period could enable him to do this.

My own studies in this area have been so limited of late that I would wish to add very little to the above.

I was interested to note Wood Warblers in song at Finchampstead Ridges on the occasion of the Society's Nature Trail on 24th May. The species is rather scarce in our area.

On returning to Reading on 22nd April I was glad to see a singing Nightingale again established in an overgrown garden at Cleeve, Goring. It continued to sing there until the end of May. On 24th April my first Tree Pipit of the year was in full song in trees beside the felled area of Green Dean Wood, near Cane End. On 6th May Swifts were established back in Reading and a passage or Lesser Whitethroat visited my garden at Cleeve. (They are fairly generally distributed summer visitors in our area as a whole, but do not stay in the garden to breed).

A Kestrel, seen on three separate occasions in June, was encouraging in view of the increasing scarcity of several of our birds of prey - 5th June, Cleeve; 10th June and 21st, Streatley Golf Course. All records of birds of prey which any member has should be reported to the British Trust for Ornithology*

Visits to Theale gravel pit on 25th May and 23rd September provided an interesting contrast. On the first occasion there were Mute Swan and Coot each with a trail of seven swimming young; a few pairs of Tufted Duck were about; Sedge Warblers sang almost continuously and one produced a good imitation of the sharp note of the Yellow Wagtail and the scolding note of the Blue Tit.

British Trust for Ornithology, Beech Grove, Tring, Herts.

By 23rd September all was comparatively quiet. No longer were there Sedge Warblers to sing. Breeding Coot had been augmented by others to make a flock estimated at 130 birds of this species. A passage Lesser Black-backed Gull was seen, and we were lucky to have a fleeting view of a Kingfisher - another species reported to be on the decrease in many areas.

The finch family provided the 'common ground' of the two occasions - these and a few pairs of Great-crested Grebes and a handful of ordinary resident species. But whilst in May there was evidence of breeding Reed Buntings, Linnets and Goldfinches, in late September the attraction was a big area of waste ground covered with seeding weeds of many species, all brown and dry at the end of the summer. I noted teasel (Dipsacus), various species of bistort and knotweed (Polygonum) and of course thistles (Cirsium spp.) in plenty; and on all these the large flock of Linnets and the smaller party of Goldfinches were feeding. Reed Buntings lingered in their breeding area.

On the same day (23rd September) a Green Sandpiper was seen at the Blue Pool, Bradfield, having been reported to me a few days earlier by Mr. Michael Hardy. Green Sandpipers are also rather regular visitors to Englefield Park on autumn passage (see R.O.C. Reports).

Finally, as regards Mr. Carter's observations on Woodpeckers and Goldcrest, I would add that I have seen Greater spotted Woodpecker from time to time, but the Green Woodpecker more rarely, and the lesser spotted Woodpecker not at all, in 1964. I also have in my notes no record of Goldcrests. Members' observations on these species in the ensuing year would be greatly welcomed.

The Recorder's Report for Botany, 1963-64

By B. M. Newman

Despite the comparatively mild winter we had one of the latest springs of the past decade, and the first spring flowers were little if any earlier than last year. January, though mild, was very dry, and when damper conditions prevailed in early March, lower temperatures which continued into the first week of April hindered flowering. The first Lesser Celandine (Ranunculus ficaria L.) and Windflowers (Anemone nemorosa L.) were seen on 30th March, when the Wild Snowdrop (Galanthus nivalis L.) was still in bloom. Two months later, on 31st May, the Anemone was still flowering on Silchester Common. The White Dead Nettle (Lamium album L.) was seen on 3rd March, but this species had been in bloom sporadically all through the winter.

Reports on Winter Walks and Field Excursions

Bearwood was visited on 4th January, and among the many exotic trees in the extensive grounds, those especially noted were: Araucaria sp. (Monkey Puzzle); Cryptomeria japonica D. Don; Picea smithiana Boiss.; Tsuga canadensis Carr.; Juniperis chinensis L.; Chamaecyparis sp.; Thuja orientalis L.; Sciadopitys verticillata Sieb. et Zucc. (Umbrella Pine); P. polita Carr (Tiger-tail Spruce); and Sequoia gigantea Lindl. et Gord. (Wellingtonia).

On the first excursion of the summer, through woods near Beenham, on 4th April, flowers were not abundant, but at least 17 species were recorded in flower. They included Adoxa moschatellina L. (Town Hall Clock), Chrysosplenium oppositifolium L. (Golden Saxifrage), Oxalis acetosella L. (Wood Sorrel) and Primula vulgaris Huds. (Primrose). The fungus Geastrum fimbriatum (Earth Star) was found by the youngest member of the party.

The main object of the excursion to Aston Upthorpe Downs on 18th April was Pulsatilla vulgaris Mill. (Pasque-flower). Although only two flowers were fully out, there was promise of very many more both inside and outside the enclosure. On a walk through the chalk country around Cleeve on 6th June, the whole route was full of interest, from the Corn Bunting singing on a telegraph pole as the party set out, to the flowers of Listera ovata (L.) R. Br. (Twayblade) and Cephalanthera damasonium (Mill.) Druce (White Helleborine) seen later in the afternoon.

The many aquatic and semi-aquatic plants noted during the walk along the canal bank by Thatcham reed-beds on 18th July included Oenanthe fluviatilis (Bab.) Colem. (River Water-Dropwort), Sparganium erectum L. (Bur-reed), S. emersum Rehm. (Lesser Bur-reed), and Phragmites communis Trin. (Common Reed), some stems of which contained pupae of the Spotted Wainscot moth. Near Thatcham Station a few plants of Polygonum bistorta L. (Bistort) were found.

On the walk to the Blue Pool through the fields from Bradfield on 1st August, Azolla filiculoides Lam. was seen in the River Pang, also Elodea canadensis Michx. (Canadian Pondweed), and Datura stramonium L. (Thorn-apple) was found in an arable field. On the return walk, via Jennetts Hill, Silene gallica L. (Small Catchfly) was found in a very weedy cornfield in much greater abundance than in 1963.

The highlight of the walk from Wargrave to Sonning on 22nd August was the sight of extensive colonies of Cuscuta europaea L. (Great Dodder), parasitic on Urtica dioica L. (Common Stinging Nettle). Hitherto our records have been mainly from the Oxfordshire side of the Thames.

The fungus foray, on 26th September, was again held at Kingwood Common, using Dr. Somerville Hastings' garden and verandah as base, but owing to the hot, dry weather of the previous weeks, fungi were not as numerous as usual. A short list of new finds follows after this report.

Road, Reading; also in Caversham (A.M.S.).

Iberis amara L. (Bitter Candytuft) Locally abundant in felled areas of Freedom Wood, Bix (J.A.C.).

Hypericum androsaemum L. (Tutsan) Medmenham (J.W.); Burnt Hill, Yattendon (M.F.).

H. humifusum L. (Trailing St. John's Wort) A plant seen on Bucklebury Common
This species, never very plentiful, appears to be decreasing. It may be overlooked (A.M.S.).

Silene gallica L. (Small Catchfly) Bradfield. Has increased considerably (A.M.S.).

Montia fontana L. (Winter Blinks) Finchampstead Ridges. Owing to its small size this species is doubtless often overlooked. (A.M.S.).

Chenopodium polyspermum L. (Many seeded Goosefoot) Weed of arable field at Wargrave. Also on Corporation tips (A.M.S.).

Radiola linoides Roth. Heathland track, Mortimer (H.J.M.B.).

Erodium moschatum (L.) L'Herit. (Musk Storksbill) Near Drayton St. Leonard's Oxon., in a market garden manured with shoddy (D.M.).

*Impatiens capensis Meerb. (Orange Balsam) Folley's Gravel Pits (Society's excursion) (L.E.C.).

*Impatiens glandulifera Royle (Policeman's Helmet) River Kennet between Pridge Street and Berkeley Avenue (A.M.S.).

Genista tinctoria L. (Dyer's Greenweed) Cleeve (Society's excursion) (L.E.C.).

Medicago falcata L. (Sickle Medick) Casual, Corporation tip at Small Mead, One plant (A.M.S.).

Trifolium medium L. (Zig-zag Clover) Peppard, Oxon (V.A.P.).

*Coronilla varia L. (Crown Vetch) Peppard Common, outside a garden and doubtfully wild. First observed in 1963. Appears to be well established and extending its territory. (A.M.S.).

*Vicia tenuifolia Roth. Similar in growth to V. cracca L. but with purple and white flowers. One plant in flower, November, 1963, on waste ground adjacent to Fina Petrol Station, Caversham. Doubtless a casual (A.M.S.).

Lathyrus aphaca L. (Yellow Vetchling) An uncommon plant with leaves reduced to tendrils, conspicuous broad leaf-like stipules, and small solitary yellow pea-flowers. One plant growing between pavement and garden wall, Hemdean Road, Caversham. Weeded out within a fortnight (A.M.S.).

Potentilla palustris (L.) Scop. About 1000 plants in shady bog near Queens Mere, Wokingham. Confirms old record. Found by G. Hawkins (H.J.M.B.).

*P. recta L. (Sulphur Cinquefoil) Beside the drive of Fuller's Pig Farm, Burnt Hill, Yattendon. (M.F.).

Alchemilla vulgaris L. (Lady's Mantle) Greenfield and College Woods, Pishill (J.A.C.).

*Tolmiea menziesii (Pursh) Torr & Gray. Shady bog near Queens Mere, Wokingham Found by G. Hawkins (H.J.M.B.).

Daphne laureola L. Abundant in Greenfield and College Woods, Pishill (J.A.C.).

Torilis arvensis (Huds.) Link (Spreading Hedge Parsley) Once a common cornfield weed in East Berks. Has greatly decreased. Two plants seen in a stubble field near Ruscombe (A.M.S.).

Callitriche obtusangula Le Gall. Abundant in Hungerford water meadows. Should be looked for elsewhere beside the Kennet (H.J.M.B.).

Sison amomum L. (Bastard Stone Parsley) Southern Hill, Reading; near Three-mile Cross (A.M.S.).

- Carum carvi L. 12 plants in meadow near Peasemore, 1963 (H.J.M.B.).
- Polygonum hydropiper L. (Water Pepper) Whiteknights Park (V.A.P.).
- *Helxine soleirolii Req. (Mind-your-own-business) This tiny member of the nettle family (Urticaceae) flourishes in damp shady situations. Abundant in Wargrave churchyard. (A.M.S.).
- Salix alba L. (White Willow) Near Wargrave Recorded in error from canal bank near Burghfield Bridge in 1963. Record should be:- S. alba x fragilis = S. x rubens Schrank.
- Pyrola minor L. (Common Wintergreen) Near Marlow Common (J.T.).
- Monotropa hypopitys L. (Yellow Bird's Nest) Near Marlow Common (J.T.).
- *Buddleja davidii Franch. (Purple Buddleia) Naturalised on waste ground, Reading; railway bank west of Pangbourne (A.M.S.).
- *Symphytum asperum x officinale = S. x uplandicum Nyman Near Loddon Bridge; near Botton Farm, Bradfield (1963 records, confirmed by Dr. H. Bowen) (A.M.S.).
- *Symphytum orientale L. (Comfrey) Hall's Lane, Shinfield (V.A.P.)
- *Calystegia silvatica (Kit.) Griseb. (American bell-bind) Behind University (Acacia Avenue) (A.M.S.).
- Atropa bella-donna L. (Deadly Nightshade) Locally abundant in felled areas of Freedom Wood, Bix (J.A.C.).
- Hyoscyamus niger L. (Henbane) Folley's Gravel Pit, Sonning Eye (J.M.W.).
- *Datura stramonium L. (Thorn-apple) Abbey ruins, Reading. (V.A.P.).
- *Antirrhinum majus L. (Great Snapdragon) Reading Abbey and adjacent nursery garden (A.M.S.).
- Linaria repens (L.) Mill. (Pale Toadflax) Locally abundant in felled areas of Freedom Wood, Bix.
- Veronica anagallis-aquatica L. (Water Speedwell) River Pang near Bradfield; river Kennet near Thatcham (A.M.S.).
- *V. praecox All. About 100 plants on calcareous gravel at Standlake, Oxon. Found by G. Maclean (H.J.M.B.).
- *V. filiformis Sm. (Slender Speedwell) Christchurch Meadow, Caversham (A.M.S.).
- Lathraea squamaria L. (Toothwort) Plentiful at Ashampstead Green. Site discovered by D. Leatherdale and subsequently visited by E. Nelmes and L. E. Cobb. Not far from the Ashampstead locality previously recorded by Mrs. Simmonds, but distinct from it. (L.E.C.).
- Mentha arvensis L. (Corn Mint) Near Bradfield; Wescot Down (A.M.S.).
- M. x verticillata L. (Whorled Mint) Near Bradfield (A.M.S.).
- M. x piperata L. Christchurch Meadow, Caversham (A.M.S.); ditch near Mortimer Station (H.J.M.B.).
- *M. spicata L. (Spearmint) (Christchurch Meadow, Caversham (A.M.S.).
- Stachys arvensis (L.) L. (Field Woundwort) Potato field near Wargrave (A.M.S.).
- Nepeta cataria L. (Catmint) A few plants in hedge banks, East Hagbourne (H.J.M.B.).
- Adoxa moschatellina L. (Town Hall Clock) Beenham (V.A.P.).
- Bidens cernua L. (Bur-marigold) River Kennet, Reading (A.M.S.).
- B. tripartita L. (Three-Cleft Bur-marigold) Whiteknights Park, Reading (V.A.P.).
- Petasites hybridus (L.) Gaetn., Mey. and Scherb. Thames bank between Sonning and Wargrave (A.M.S.).
- Chamaemelum nobile (L.) All. (Chamonile) Hazeley Heath (A.M.S.).

- Sagittaria sagittifolia L. (Arrowhead) River Kennet, Reading. A shy flowerer (A.M.S.).
- Butonus umbellatus L. (Flowering Rush) Wargrave (V.A.P.).
- Stratiotes aloides L. (Water-soldier) Nettlebed (V.A.P.); ~~Whiteknights~~ Park, Reading (H.J.M.B.).
- *Allium paradoxum (Bieb.) G. Don. Dominant in places and spreading rapidly in a copse at Adwell, Oxon. (H.J.M.B.).
- A. ursinum L. (Ramsons) A large and flourishing colony near Magpie Farm, Frilsham. First found ten years ago, but not recorded as it was outside the ten-mile limit. Revisited in May this year. (L.E.C.).
- Leucojum aestivum L. (Summer Snowflake) Folley's Gravel Pit, Sonning Eye. (H.C.).
- Epipactis leptochila (Godfery) Godfery Near Marlow Common (J.T.).
- Epipogium aphyllum Sw. (The Ghost Orchid) Reported to have appeared in its Bucks. locality (A.M.S.).
- Spiranthes spiralis (L.) Chevall (Autumn Ladies Tresses) A large number on a lawn at Peppard Common (A.M.S.).
- Listera ovata (L.) R.Br. (Common Twayblade) Padworth (J.H.C.).
- Platanthera bifolia (L.) Rich. (Butterfly Orchid) Pamber Forest (V.A.P.).
- Ophrys apifera Huds. (Bee Orchid) At least a dozen at Nuney Green
- Orchis simia Lam. (Monkey Orchid) Four plants, two of which flowered, one being a very good specimen (A.M.S.).
- O. ustulata L. (Burnt tip Orchid) Aston Upthorpe Downs (A.M.S.).
- O. mascula (L.) L. (Early Purple Orchis) A few plants at Arborfield (L.E.C.)
- Dactylorhiza maculata (L.) Vermeul. subsp. ericetorum (E. F. Linton) Vermeul. Plentiful on Silchester Common (A.M.S.).
- Bromus benekenii (Lange) Frimen. With Hordelymus europaeus (L.) Harz in bare ground in beech wood near Upper Basildon (H.J.M.B.).
- *Setaria verticillata (L.) Beauv. (Rough Bristle Grass) Sparingly, at Corporation tip, Small Mead, Reading (A.M.S.).

Fungi at Kingwood Common

(Supplementary List)

The following species, which are additions to the previous published lists of fungi for Kingwood Common (Reading Naturalist nos. 12-16), were found at the Society's Foray on 26th September, 1961. Dr. F. B. Hora very kindly made the determinations.

Calocera cornea

Ganoderma applanatum

Calvatia gigantea

Grifola (Polyporus) sulphurea

Cortinarius pseudosalor

Russula aeruginea

General Observations

Abnormality in the Water Spider, *Argyroneta aquatica* (Arachnida)

Whilst at Woolmer Pond, Hants, on 14th March collecting sawfly galls with Mr. B. R. Baker, I took two specimens of *Argyroneta aquatica* Clerck, the Water Spider. One of these specimens was quite normal but the other did not possess a hydrofuge. They were both kept in captivity for about six weeks, during which time the normal spider moved quite rapidly and constructed a bell. The spider without a hydrofuge was unable to hold a bubble of air on its abdomen, was very slow moving and did not make a bell.

A. Price

Trichius fasciatus (L.) (Coleoptera)

This rare Lamellicorn beetle was taken on 26th July whilst it was in search of a suitable part of a decaying log in which to oviposit. The log was on the tide-line of the beach near Kidwelly, Carmarthenshire, and the beetle finally chose old borings of the Lucanid beetle, *Dorcus*, in which to lay its eggs.

A. Price

Carabus auratus L. in Reading, Berks

On 17th July, 1964 I saw a living specimen of the above beetle, which was taken in a cellar in the east of Reading. Mr. E. G. Taylor, who showed it to me, said that he has seen specimens of this beetle in the cellar for about five years. The elytra of a dead one was handed to me by Mr. Taylor on 23rd September, so we have definite proof of two specimens. It does seem possible that the beetle is breeding in the vicinity. The complete specimen is now in the Reading Museum.

Carabus auratus is a continental species which is said not to breed in this country. It will be of interest therefore to establish whether this is a breeding colony or not. Fowler states that it is very doubtfully indigenous in Britain and that specimens are imported occasionally with vegetables. A small colony was found by Dr. Power and Mr. Brewer in 1863 between Hythe and Sandgate. These seem to have been connected with a batch turned loose by Mr. Walton some years before. The Reading colony, if such it is, will be studied.

A. Price

On 26th November, 1964, since the above was written, Mr. Taylor produced a further complete specimen of *C. auratus*, which he positively states, came from his cellar three years ago. It had been kept in his laboratory since that date and had been overlooked. We now have records of the beetle in this habitat over three years, and the claim that the beetle breeds in this place gathers strength

A. Price

Records and Contributions

Records for the Reports should reach the Honorary Recorders by the Annual General Meeting or as soon as possible after it. Scientific names should be very clearly legible; for botanical records, J. E. Dandy's nomenclature should be followed, and the author for each species included, where possible.

General observations, not suitable for the Reports, and original articles can be submitted to the Editor at any time up to the beginning of October; prior notice would be much appreciated for the longer papers. All contributions should be typed, with double spacing, or, if this is quite impracticable, written clearly and legibly with widely spaced lines.

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Schools

Abbey School, Kendrick Road, Reading, Berks (Miss S. M. Hardcastle, M.Sc.,
Headmistress)
Alfred Sutton Girls' School, Cumberland Road, Reading, Berks.
Carmel College Natural History Society, Carmel College, Mongewell Park,
Wallingford, Berks.
E. P. Collier Central School, York Road, Reading, Berks.
Forest School (The Biology Society), Robinhood Lane, Winnersh, Berks (Mrs.
M. C. Hayes Allen)
Henley Grammar School, Henley-on-Thames, Oxon. (The Principal)
Kendrick School, London Road, Reading, Berks.
Leighton Park School, Shinfield Road, Reading, Berks.
Reading School, Erleigh Road, Reading, Berks. (The Bursar)
Redlands Primary School, Lydford Road, Reading, Berks.
The Science Department, Reading Technical College, King's Road, Reading, Berks.
Southlands Girls' School, Basingstoke, Reading, Berks. (Miss W. Page, Senior
Science Mistress)
Whitley Park Junior School, Basingstoke Road, Reading, Berks (Mr. D. W. Croker)



