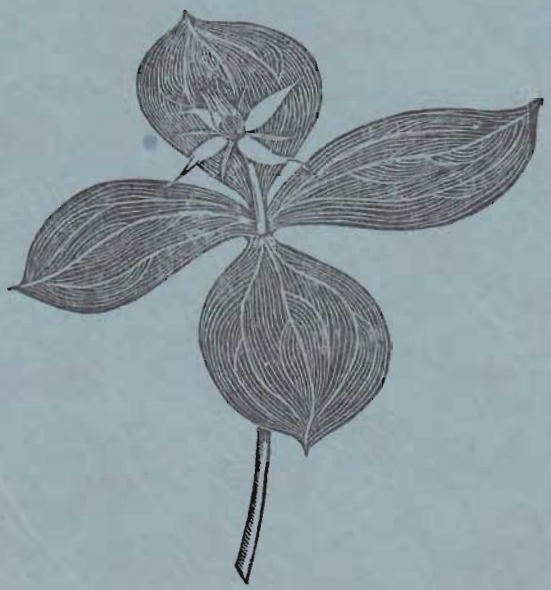
The Reading Naturalist

No. 21



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THE READING NATURALIST

No. 21 for the year 1967-68

The Journal of
The Reading and District Natural History
Society

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EDITORIAL

On the shelves of such specialised libraries as those of the British Museum (Natural History) or the Linnean Society of London, there are runs of many journals published by the local natural history societies of Britain. A few of them go back for, say, more than a hundred years; they are fittingly bound in leather, honoured and known far beyond the confines of these Islands. Others (and they make up the greater part of such collections) appear in short, incomplete series; they change size, title or volume number with confusing frequency, cease publication for no stated reason and may resume their life under another guise after an interval of a few or many years. They are known only to the librarian or the persistent scholar; their citation as sources of reference may well lead to the librarian's embarrassment and the scholar's despair.

The publications of our Society were in early danger of falling into this second category, for Questiones Naturales, published in 1933, never proceeded beyond vol. 1, no. 1. Happily, we are now able to celebrate the appearance of the 21st number of the Reading Naturalist. Although there is far to go before it may be included in the august company of the first category of journals, it has established itself as a viable member of a third category, most members of which sprang from the revival of interest in natural history that followed upon the close of the Second World War.

It is appropriate that this birthday issue should include a brief history of the Reading & District Natural History Society; and further appropriate that the history should have been written by Mrs. A. M. Simmonds, who, having played a major part in the running of the Society's affairs for many a year, is now moving to a more distant home. Let us all wish her well.

Certain features in the Reading Naturalist, such as the Recorder's Reports, appear each year and represent the sum of the experience of the Society's members. Such information, to be of fullest value, needs to be critical and easily accessible. It is to be hoped that it may at some time prove possible to provide an index, and to give criteria for the inclusion or omission of particular records.

Other articles reflect the more personal interests of members, and in this connection it is desirable that any member who has something of value to say should say it. The so-called 'information explosion' is not taking place at the level of local societies, and many members could, and indeed should, share their findings and thoughts with their fellow members and the wider nature-loving public through these pages.

Meetings and Excursions, 1967-68

Mr. B. R. Baker delivered his Presidential Address entitled "On Early Naturalists" at the Annual General Meeting (attendance 54). Two evenings were devoted to members' exhibits, talks and films (50 and 57).

The lectures given before the Society were "Some Aspects of British Reptiles", by Mr. Maxwell Knight, O.B.E., (50); "The Wilder Life of Buckinghamshire", by Mrs. Susan Cowdy (52); "Leaf-cutting Ants - Man's Rival Farmers", by Professor Glyn Williams (41); "Man and Environment in Peru", by Dr. Barbara Pickersgill (26); "Iceland - Key to Continental Drift?", by Mr. R. W. Calvert (54); "Mapping Britain's Flora and Fauna", by Mr. J. Heath (52); "The Biology of Sewage Purification", by Mr. R. L. Summers (37); and "Orchids", by Mrs. Vera Paul (54).

Winter walks were held on 2nd December, Whiteknights Park, Reading (for trees) (attendance 12); 6th January, Woodley (gravel pits and woods) (6); 3rd February, College Wood, Goring Heath (18); and 16th March, Mapledurham (for mosses) (17). The walk planned for 4th November was cancelled because of heavy rain.

The summer field meetings were: 6th April, Beenham Woods (26); 20th April, Chazey Wood (16); 8th May, College Wood, Goring Heath (5); 11th May, Aston Upthorpe Reserve (30); 18th May, Heath Pool, Finchampstead (6) (a very wet day); 1st June, Greywell Fen, near Hook (15); 15th June, Watlington Hill; 23rd June, coach excursion to Nore Hill and Selbourne (26); 6th July, Mongewell Wood, near Nuffield (30); 17th July, Sonning to Shiplake (4); 20th July, Pamber, afternoon walk (29) and entomological evening (14) (total 30); 3rd August, watermeadows near Goring (19); 17th August, Harpsden Woods (23); 31st August, Binfield Heath area (16); 5th October, fungus foray (40-50). Walks planned for 26th June and 14th September were cancelled on account of heavy rain.

The tenth annual Young Naturalists' Evening was held on 13th March in the Large Town Hall and was attended by about 500 Reading school children. The panel comprised Dr. H. J. M. Bowen, Mr. J. R. L. Allen, Dr. H. F. Van Emden and Mr. Robert Gillmor, with Mr. J. F. Newman as Questionmaster. Over 600 questions were submitted to the selection committee and the eight prizes, given by our Society, were won by: Susan Moss, The Abbey Junior School (9 yrs.), Nicholas Elvish, Caversham Park Primary School (11 yrs.), Tessa McVeigh, Christ the King Primary School (9 yrs.), Peter Hendy , Emmer Green Primary School (10¾ yrs.), Robert Sarjeant, Cintra Secondary School (13 yrs.), Elizabeth Horler, The Abbey Junior School (10 yrs.), Paula Hill, St. Joseph's Convent Preparatory School (11¼ yrs.), Julia Anne Neave, Caversham Park Primary School (9½ yrs.). The Right Worshipful the Mayor of Reading, Alderman F. Taylor, presented the prizes and then remained with the children to watch the film "Twilight Forest".

ON EARLY NATURALISTS

The Presidential Address to the Reading Natural History Society, 19th October 1967

By B. R. Baker

I have, on occasions, been moved to spend the night hours in some wood or forest, happy upon some natural history pursuit, and have lingered therein to watch the dawn come up, and to see animals on the move in a bright new day.

This is, however, not at all the kind of activity I had in mind when trying to put together some thoughts on "Early Naturalists". Professor Hawkins, in his foreword to that excellent little book in the Observers Series on Geology, says that "A Geologist is an Historian", and it is also to history that I have turned (though in matters biological) in preparing this evening's address - a looking-back, albeit cursory, to try and piece together some of the events in one activity of our own species - namely man's interest in natural history. The word 'history' has come to mean to us the story of the past - I used it in that sense a moment or so back - but its original meaning was the process of learning by enquiry, and that early definition is still retained in our term Natural History.

In the years before the last war I recall going down with a bout of mumps; I recall the occasion well because it happened during the Christmas holidays from school and I was subjected to a period of enforced inactivity. One day, a former President of this Society kindly called on me and left a book to help while away the hours, a book recalling the experiences of field naturalists of the Mid-Victorian period. The pages of that book conjured up in my mind such vivid pictures of those early enthusiasts, working with somewhat primitive apparatus in an unspoiled countryside, that I have ever since found a fascination in reading of the exploits of their contemporaries.

A hundred years on from the time of that book, today we find ourselves in possession of sophisticated apparatus - mercury vapour light traps, excellent lightweight cameras and of course numerous well illustrated books of reference. If, by comparison with present-day naturalists our fellows of 100 years ago were poorly served by books and apparatus, how then must the earliest biologists of whom we have record ever have managed to initiate their studies? Although observations on scientific matters were made by peoples much earlier than the Greeks, it is with the latter, or as they came to call themselves, the Hellenes, that scientific discussion really began.

We go back to around 1400 B.C., to a time when the civilisations of the Myceneans and the Minoans were falling into decay from the ravages of internecine warfare. From this ruin there gradually emerged a further Greek civilisation, the records of which have come down to us.

All the biological sciences were first studied because of their bearing on medicine, and the earliest scientific institution of which there is record concerns a medical school. This was set up on the island of Cos off the coast of Asia Minor and its most illustrious member appears to have been Hippocrates, who might well be called the father of biology.

A doctor of those times had no instruments to assist him, but he would rely on well trained senses - he would observe carefully and well and put down what he saw with a wonderful eye for what was essential. The early medical works of those times indicate that there was little or no anatomical, physiological or chemical knowledge. Many diseases were attributed to the action of gods or demons, but one physician in writing of the 'Sacred Disease' has left us a passage which might be called the Charter of Science for it sets forth the scientific method of assuming natural explanations for all observable events. A section of the passage reads: "It doesn't really matter whether you call such things divine or not - in Nature all things are alike in this, that they can all be traced to preceding causes".

The Greeks, being essentially a maritime people, naturally took an interest in marine creatures and many good representations of fishes have come down to us from as early as the 6th century B.C.

A start had also been made upon the dissection of the internal parts of animals. The Eustachian tube connecting the cavity of the middle ear with the throat is named after a 16th century anatomist - yet these tubes had been described 2000 years earlier by the Greek Alcmaeon, who had also embarked upon the study we now term embryology. The greatest of all Greek men of science was Aristotle, born in 384 B.C. at the small town of Stagira on the frontiers of the state of Macedon. Aristotle's father had been physician to Amyntas II, king of Macedon, and it seems likely that it was from his father, the physician, that Aristotle early acquired an interest in biological investigation.

By the age of 17, Aristotle was in Athens listening to the great philosopher Plato, and he remained a member of his school until Plato's death some 20 years later. So far as science was concerned, Plato had a strong bias towards mathematics, whereas Aristotle was essentially a biologist.

His accounts of the habits of certain marine creatures conjure up

a picture of the man at work - leaning out of a boat, peering down into the clear waters of the Mediterranean for hour after hour - totally absorbed - and then comes the description of the things he saw. For instance, on the Angler Fish - "the Angler stirs himself up a place where there is plenty of mud and sand and hides himself there. He has a filament projecting in front of his eyes. This filament is long, thin and hair-like, and rounded at the tip. It is used as a bait. The little creatures on which this fish feeds swim up to the filament and take it for a piece of the seaweed that they eat. Then, the Angler raises the filament, and when the little fishes strike against it, he sucks them down into his mouth. That these creatures get their living thus is evident from the fact that while sluggish themselves, they are yet often found with mullet in their stomachs, and mullet are very swift fish. Moreover, the Angler is usually thin when taken after having lost the tips of his filament." (On the spot reporting from over 2000 years ago.)

Aristotle had no books to go to, no instruments, no learned societies to visit - he was as yet without a library - in fact the idea of a great library in our sense comes from him. He also seems to have been the first worker to illustrate a biological treatise. In our modern system of classification we employ technical terms of Greek or Latin origin. High in importance come the words 'genus' and 'species' - two words which are Latin translations of Greek words used by Aristotle. No botanical treatise by Aristotle has come down to us, but we have very full botanical works by his pupil Theophrastus.

In the Hippocratic works, as we have said earlier, plants are only considered for their use in medicine; in a section of one of Theophrastus' works we are told a little more about them - often in a superstitious vein. One passage reads - "Druggists and herb diggers enjoin that in cutting certain roots one should stand to windward. Thus, if you cut Thapsia facing other than windward, your body will swell up. The peony should be gathered at night, for if a man is seen by a woodpecker while collecting the fruit, he is in danger of going blind. While cutting the fever-wort beware of the buzzard hawk."

Being mainly an observer and collector of facts, Theophrastus suffered especially from the lack of technical terms, and there are instances of his using a word more or less in current usage and giving it a special technical meaning. For example, the word metra, meaning primarily the womb, became introduced into botany to mean all the different kinds of core. Metra, he says, is that which is in the middle of the wood, being third in order from the bark. He thus invents a word to cover all the different kinds of core and imports it from another study. His description of the process of germination is the first account of the subject on record, and the best that was made until the 17th century of the Christian era. He described the process

of artificial pollination of the palm tree - practised in fact centuries before his time and known to both ancient Babylonians and Egyptians.

In following this search for the records of early naturalists, we find not only new names, but whole new centres of learning, as for example Alexandria eclipsing the fame of Athens, and the whole of science entering upon a new phase covering the last 300 years before Christ. As regards the biological works of the Alexandrian school during the Ptolemaic period, fragments only have survived the passage of time, and it may have been that the incentive for biological discovery was lost when after the death of the last Ptolemaic sovereign, Queen Cleopatra in 30 B.C., Egypt passed completely under the power of Rome.

The school of medicine at Alexandria, though continuing for some centuries, lost its vitality; indeed with the advent of Roman rule almost all departments of science languished. There was only one aspect of biology in which any advance was made and this concerned botany. Medical studies still flourished, and along with these came the need for certain drugs - the products of particular plants. Since there was hardly any scientific terminology, identification was based mainly on pictures, and the art of botanical drawing began to be practised towards the end of the first century B.C. Along with the careful drawing of plants to be used initially as aids to identification came the use of the drawings in Roman decorative art. The result was the rise of plant study of an accurate nature, quite different from that found in earlier Greek art.

Of the works prepared at this time to aid identification, the best known was by a Greek military surgeon in the army of the Emperor Nero, one Dioscorides. We are told that his descriptions, though always short, would often include a note on the habitat of the plant. Copies of Dioscorides' herbal were prepared with pictures of the plants described, and the work of the plant illustrators was thereby extended.

At this time flourished the Roman naturalist Pliny, a man of immense industry who, however, collected not objects of natural history, but information (or misinformation) about them. From numerous extracts from the works of other authors he compiled his famous book on natural history which, though an important source of information on the customs of antiquity, included all manner of yarns and travellers' tales, and thereby cannot stand comparison with the works of his illustrious predecessors.

One idea which is still current and which appears to have arisen with Pliny, is that all matter, animal, mineral or vegetable, must

have some use. We still hear, "What is the use of earwigs, or flies, or stinging nettles" and so on, and by this is meant, of course, use to man - the place of these things in the biological scheme of things is totally ignored.

After Pliny, there is record of only one further important biological investigator in antiquity - this was the physician Galen (A.D. 130 - 200). We read that by the age of 16 Galen was studying medicine at Pergamum in Asia Minor, and that he appeared as an author before he had reached the age of 20. Among his many important posts we are told that for four years he was surgeon to the gladiators, and later physician to the philosopher Emperor Marcus Aurelius. Galen was essentially a physiologist, seeking to find out, for example, the functions of heart and breathing, and his work so impressed his contemporaries and later men of science that nothing of his written work was allowed to be altered. All was slavishly copied and his understandable errors were thereby passed on to men of later centuries - the answer as to why new investigations were not being made would have been "Galen's work is already good enough".

After Galen's death there is a dark age period in science, encompassing perhaps a thousand years and we hear of no biological work for many centuries. The Greek language, formerly understood by every educated man in the earlier days of the Roman Empire, became neglected - works were translated into Latin, and deteriorated in the process. The Romans were essentially practical people and theoretical investigation was not thought necessary. The quest for knowledge seems to have been lost by the Greeks when their own independence was lost, and the practical attitude of the Romans to abstract knowledge put the seal to learned enquiry for many centuries.

But whilst the knowledge of men in western Europe deteriorated, the old traditions lingered in the near East. The Greek scientific works were still read in the cities of Syria and Asia Minor; but, with the great movement of Islam establishing Arabic as a literary language, intellectual leadership passed to people of Arabic speech, to remain there from the 9th to the 13th century. And yet the science of these Arabic-speaking people was based upon the translations of those early Greek works. In the course of time Europeans came to recognize their intellectual inferiority to these eastern people, and attempts were made to secure translations of their scientific works, and when this became possible, as far as biology was concerned, the most important Latin translations from the Arabic were the works of Aristotle. Works of the other earlier writers we have mentioned were also made available to those who could read Latin.

It was as if the world was awakening from a long sleep. Universities came into prominence at this period, but the value of

direct observation in biological matters seems still to have been appreciated only by a very small group of thinkers, people such as Albertus Magnus, whose work entitled "On Plants" is perhaps the best work on natural history produced in the Middle Ages.

With this rebirth of enquiry came the period of the great voyages of exploration, and news of rare and strange creatures was brought back to this country from an ever increasing band of explorer-naturalists. To aid the recording of these creatures, and to enable a recapturing of the ancient works to be undertaken, the invention of the art of printing could hardly have been made at a more pressing time. With the ever increasing flow of information and an ever growing trade in the transport of specimens, the need for some kind of arrangement was felt - and we enter the period of those encyclopaedic naturalists who made it their business to collect all known facts about living things.

Such an encyclopaedist was the great Swiss naturalist Conrad Gesner, another was the Londoner Thomas Mouffet whose masterpiece was his "Theatre of Insects", published in Latin in 1634 and in English in 1658. Though not confined to our fauna, this book was the first known entomological publication in Great Britain. I have been privileged to examine a copy and one can visualise Mouffet becoming more and more bewildered as he endeavours to describe certain grasshoppers. He writes: "Some are green, some black, some blue. Some fly with one pair of wings, others with more; those that have no wings they leap, those that cannot either fly or leap, they walk. Some there are that sing, others are silent. And as there are many kinds of them in nature, so their names were almost infinite, which through the neglect of Naturalists are grown out of use." After lengthy descriptions poor Mouffet begins to run out of terms: "I procured one from Barbary that was brought out of Affrick at some cost to us - 5 inches long, hooded, the head pyramidal, very long, out of which almost at the top came forth 2 little broad cornicles about an inch long, much like that turbant which the Turkish Janizaries use with 2 feathers in it." Imagine keying out a grasshopper to-day using the couplet "Head possessing a structure like the Turban worn by certain inhabitants of Turkey, the same bearing 2 feathers", or "Head simple, and without the aforementioned headgear"!

As the rebirth of enquiry into science continued, there came the need for discussion and interchange of ideas with others interested in the various fields now opening up, and the first scientific societies came into being. A group calling itself the Invisible College held informal gatherings in London beginning about 1645 - this was later to flourish and merit King Charles' approval as the Royal Society in 1662.

Along with the societies came scientific journals, and then homes for the flood of plant and animal specimens, both native and from

foreign parts. These homes we now call museums, and the earliest of which there is record in England was at Lambeth, housing collections put together by the gardeners John Tradescant and son. Fragments of their collection still exist at Oxford - one interesting item being called "a Dodar from the island of Mauritius - it is not able to flie being so big". This is of course a reference to the now extinct Dodo. The full development of the biological museum was not to come until the 18th century, under the initiative of such people as John Hunter; and from that time museums have been among the main instruments of biological advance. They have become linked up not only with teaching, but with every form of scientific research. Careful, critical examination of specimens could also now be undertaken by instrumental aids, especially the microscope, whose effective inventor had been Galileo; and as the wealth of described material grew so did the need for an ordered scheme of things.

We instinctively think of the name of Linnaeus whenever plant and animal classification is mentioned - indeed he and our own John Ray were the chief founders of the science of systematic biology. But attempts at the arrangement of specimens had been continuing for two centuries before the publication of the famous "Systema Naturae", the 10th edition of which in 1758 has been accepted by taxonomists as the basis to present day systems. Linnaeus may not immediately be thought an explorer, but this indeed he was - an explorer who undertook incredible journeys involving fatigue and hardship in his search for new plants and animals. He explored much of northern Sweden and Norway, travelling on foot to reach the Arctic Ocean, and then returning by a parallel route. Of his equipment he says, "My clothes were a light coat of linsey-woolsey, leather breeches, a round wig, a green leather cap and a pair of half-boots. I carried a small leather bag containing one shirt, two pair of false sleeves, 2 vests, an inkstand, pen-case, microscope and telescope, a gauze cap to protect from gnats, a comb, my journal and a parcel of paper for drying plants, my manuscript Ornithology, Flora Uplandica and Characteres generici. I wore a hanger at my side, and carried a small fowling-piece, as well as an octagonal stock graduated for measuring." What a fantastic assortment, and what trust in putting the two vests next to the inkstand!

Biologists now had at their disposal a wealth of specimens, instruments for their examination, a system for classification, techniques for preservation and facilities for storage and research.

From this time, like Topsy in the story, the study of biology grew, but with relief you will agree we should not become ensnared in the maze of accounts of specialist fields which opened up at the end of the 19th century, expanded still further under the impetus of Darwin, Mendel and a host of others, and shows no signs of abating in the present era. One must select, and I have chosen one or two early

naturalists, who happened also to be entomologists and who seem to me to be characters who might have stepped from the pages of the book which came to me during those Christmas holidays from school. Characters who perhaps appeared but briefly, whose exact identity is today unknown, but whose name may be still perpetuated in speaking of a particular species.

For example, on the southern shores of the Isle of Wight the Glanville Fritillary butterfly still maintains a precarious existence - a species existing on the extreme edge of its range.

Who was the mysterious Lady Glanville whose name is thus perpetuated, and who still tests the mettle of investigators? That she sent specimens to James Petiver, apothecary at the sign of the White Cross, Aldersgate, is evident from her letters still preserved in the Sloan manuscripts at the British Museum. In 1702 she was writing from Bristol thus: "I have sent you a 100 several species, such as they are, many common, and many very smal, but some I belive will prove new, except you have got them lattly, they are sent by one Jefeild, a wagoner, who will unload next thursday at ye swan att Holborn bridge, ye box is dericted for you, and caridge paid, ye wagoner was with me, and promist to take perticular care of it, Its safer then ye horse carrier because they unload evry night, I bespoke my box so large, hopeing, had thos come from wales, to have filled it, they not coming I was forst to put Empty boxes and cotton to fil it and keep them steady".

Some 60 years later, Moses Harris produced his beautifully executed work entitled "The Aurelian" which gives accurate and valuable information upon some 33 species of British butterflies. When speaking of the Glanville Fritillary Harris says: "This Fly took its Name from the ingenious Lady Glanvil, whose memory had like to have suffered for her Curiosity. Some Relations that was disappointed by her Will, attempted to set it aside by Acts of Lunacy, for they suggested that none but those who were deprived of their Senses would go in Pursuit of Butterflies. Her Relations and Legatees subpoenaed Dr. Sloan and Mr. Ray to support her Character. The last Gentleman went to Exeter, and on the Tryal satisfied the Judge and Jury of the Lady's laudable Inquiry into the wonderful Works of the Creation, and established her Will. She not only made the Study of Insects Part of her Amusement, but was as curious in her Garden, and raised an Iris from the Seed, which is known to this Day, by Miss Glanvil's Flaming Iris,"

To pursue identity is to be side-tracked; the important point is that Elizabeth Glanville was indeed an outstanding entomologist for her time. She collected widely, kept accurate records of larvae and foodplants, and reared a number of species which are still identifiable from her descriptions.

James Petiver, the apothecary-turned-naturalist, and who was the recipient of that box of 100 insects bumped along rough roads from Bristol, sought not only specimens from this country but issued instructions for travellers overseas. As early as 1690 he was writing, "Plants should be dried between the pages of a large book or in a quire of paper; their fruits will travel well in brine, as will fishes and similar creatures. Insects as Spiders flyes Butterflyes and Beetles should be preserved by thrusting a pin through their body and sticking them in your hatt until you get a board, then pin them to ye wall of your cabin or ye inside of any Deal box so yt they may not be crushed"

Not only did he preach to others but actively pursued fieldwork whenever free to do so - "When Occasion gives me leave and Fair weather presents I visitt the neighboring Feilds, Woods, hills and Rivers thus accoutred. I take with me my Pincushion fully stuck with pins of severall sizes, a long Box for Insects with 2 or 3 Smaller for what odd things may come in my way, with a large Collecting book into which besides ye Plants yu find you may put all such Butterflys or Moths which are not thick bodied." The insects were placed in the book with expanded wings after they had been killed "by gently crushing their head and body betwixt yr fingers which will prevent their fluttering" - it will indeed! Petiver's methods were to be changed little over the next 150 years - even the pin cushion was carried by some 19th century entomologists. He also had advice to give on the use of light as a method of attracting insects: in writing to a friend he suggested that he collect "by going into yr adjacent yard, and Gardens with a Candle and Lanthorn about which you will find ym come buzzing".

The illustrating of natural history books was in the hands of artists who, though perhaps not experiencing the rush of present days, nevertheless worked under extraordinary circumstances. Such a one was Eleazor Albin, a painter in water colours who operated from Golden Square, Soho, "next ye Green Man near Maggots Brew House". From amongst these squalid surroundings he produced a work on butterflies which was so successful that it went to five editions. His large family must at times have disturbed him at his work, but his sons may have made a curious contribution in his preparation of pigments for we learn that Albin's formula for vermilion was to wash the dry pigment "in 4 waters, then grind it in boys urine 3 times, yn gum it and grind it in Brandy wine" Albin's book was the first which gave coloured illustrations of British butterflies and other insects.

Coming much closer to home we find the good rector of Burghfield happily writing notes on attracting night-flying insects. Three years before Queen Victoria came to the throne he would have been engaged thus - "During the moonless nights of summer I sit with a

Sinumbra lamp, and perhaps one or two smaller lamps, placed on a table close to the window. Moths speedily enter the room, if the weather be warm. I have had a levee of more than a hundred between the hours of ten and twelve. In the spring, too, and autumn, I have been frequently fortunate, though generally having my patience sufficiently tried. Of course at such cool times of the year the window must be kept shut till the moths knock for admittance. If, at any time of the year a warm mist pervade the air, there is almost a certainty of success. But should any one be induced by this account to try the lamp,he must make up his mind to experience more of unfavourable evenings than favourable". As P. B. M. Allan says, "Altogether a delightful picture. One can reconstruct the scene so easily: the Rev. gentleman in his full-skirted coat, with pockets big enough to hold the paraphernalia of entomologising, a waistcoat that comes half-way down his thighs in front; his gown on a side-table: Paley's 'Evidences of Christianity' in one hand, - the bag-net in the other".

Shortly after the time of the above account, all the methods in current entomological usage today were in vogue, save one. The method of collecting that we term sugaring appears to have been first applied about 1832 by one, Henry Doubleday - grocer on the edge of Epping. The discovery, as is often the case in biology, was accidental. Doubleday noticed that the empty sugar hogs-heads put out into their yard attracted all manner of good moths after dark - especially on damp evenings. His brother Edward recommended collectors to lay sugar hogs-heads, recently emptied, in an open space, near a field or garden, and in the course of a night or two they will be visited by a number of moths - not infrequently including the rarer species.

My address this evening owes much to the published works of Dr. Singer, P. B. M. Allan, and R. S. Wilkinson: to them my sincere thanks. We began with Hippocrates and Aristotle and end with a grocer on the edge of Epping Forest - strange bed-fellows - but they, together with the others we have mentioned, plus the many we have not - all have their place in the fascinating study which we call natural history.

OBITUARIES

Mr. H. L. Dolton

Mr. H. L. Dolton, of 36, Chester Street, Reading, died on 27th November, 1968, at the age of 82 years. He had been a member of this Society for 61 years and had served as a Member of Committee from 1913 - 1925. In recognition of this long service in the interests of natural history he was elected to Honorary Membership in 1959.

Henry Dolton was a quiet, unassuming man, who through years of patient work and self taught skills built up a knowledge of our local Microlepidoptera unrivalled by any other field worker in our district.

He had been employed by the firm of Hughes and Company, wholesale tobacconists, for over 50 years but devoted as much spare time as he could manage to the study of his special group. It was during a lunch break in St. Mary's Butts that H. L. D. had the rare experience of seeing a Camberwell Beauty butterfly. He would often recount this story and describe with the feelings of an entomologist who found himself in such an unprepared situation, how this beautiful insect appeared suddenly in a busy town centre and then disappeared again as if swallowed up in the traffic. There were times when we less experienced lepidopterists would believe that we had discovered something of special interest; H. L. D. would patiently listen to our recently acquired knowledge then quietly remark that he too had found this to be true when working with the same species!

The name of H. L. Dolton will always be associated with that of his great friend F. W. Cocks, with whom he collaborated on fieldwork from 1908 to 1929. When the Dolton Collection was presented to Reading Museum in 1949 the suggestion that we incorporate the best of both collections and form one Cocks-Dolton Reference Collection was wholeheartedly acceptable to him, and indeed gave him great pleasure.

Although the Collection was presented to the Museum almost 20 years ago, it was accepted on the understanding that Mr. Dolton would still be free to work on its contents as he so wished. This he enjoyed doing, and until very recent years a number of Microlepidoptera were methodically added at the end of each season.

Until a few months before he died, Mr. Dolton was a familiar figure to the Museum staff, for he would regularly visit the entomological room to see to the necessary task of renewing the preservative in the large stacks of cabinet drawers. In the same methodical way as that in which his diaries are written up, so Mr. Dolton tackled the necessary job of caring for the extensive insect collections. Visiting the room today one still finds reminders of his industry in the form of neat little tickets placed in easily seen

positions, each stating simply "This cabinet finished, H. L. D.".

His diaries contain not only a wealth of entomological information but much home-spun philosophy concerning his experiences in the Naval Air Service during the First World War and as a member of the Home Guard in the 1939 - 45 War. But it is always to his love of nature that he returns in his writings; his Memoirs end with the words, "I have made many friends in my life-time, but none truer than Nature".

E. R. Baker

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

By the death of Professor Hawkins on 29th December 1968, at the age of 81, the Reading and District Natural History Society has lost one of its most eminent and best-loved members. He first lectured to the Society in 1921 and became a member in the same year. He was our President from 1944 to 1947 and again from 1957 to 1960, and he was Recorder for Geology from 1922 to 1968. In 1954, in appreciation of his work for the Society, he was elected an Honorary Member.

Herbert Leader Hawkins, who was born in Reading in 1887 of Quaker parents, was educated at Reading School and was introduced to the geology of Reading and its neighbourhood while still a schoolboy. From Reading he went to Kendal Grammar School and thence to Owen's College, Manchester, with a classical scholarship. At Manchester, he read geology and graduated with First Class Honours in 1908. This first degree was followed by his M.Sc. in 1909 and his D.Sc. in 1920. In 1909 he returned to his native Reading as a part-time Lecturer in Geology at University College. At that time, there were only two students in the Geology Department, but Hawkins, by his personal efforts and research, gradually built up a flourishing Department with a museum, well stocked with collections of rocks, minerals and fossils. Many of us will remember visits to this museum, where, under the guidance of Professor Hawkins, we became so absorbed in his explanations of the more interesting specimens that we were very loath to leave.

In 1922, Hawkins was appointed Professor of Geology and occupied this Chair with distinction until he retired in 1952. He was an eminent palaeontologist and had an international reputation for his research on fossil sea-urchins. (To help with the practical side of this, he is said to have prepared himself for delicate extractions of the fossils by playing a Chopin Nocturne.) In 1937, Professor Hawkins was elected a Fellow of the Royal Society. He was also President of several societies, including the Geological Society of London, which elected him to that office in 1941 and 1942 and awarded

him the Leyell Medal in 1940. In addition to his more academic activities, he gave geological advice to the Metropolitan Water Board concerning the Enborne Valley, and in 1961 he was appointed consulting geologist to the Thames Valley Water Board.

In spite of the enormous amount of work involved in running a university Department, lecturing to learned societies and acting as an advisory geologist, Professor Hawkins still found time to take an active interest in the Reading Natural History Society. It was through his good offices that the Society was able to meet at the University for more than ten years, a privilege that greatly helped it to weather the difficult post-war period. He was also the person chiefly responsible for drawing up the revised rules in 1945. He attended meetings and field excursions, and on these occasions he proved himself a real naturalist with a considerable knowledge of many branches of natural history and an intense love of nature and the countryside. He also gave several excellent lectures to the Society. He was a clear and fluent lecturer, with that somewhat rare capacity among scientists of making scientific knowledge perfectly intelligible to the amateur; and more than that, he made it so interesting and fascinating that he held his audience enthralled.

Many saw him essentially as a philosopher, and his philosophy of life shone through his conversation and often his lectures. His distress at the trends of modern life, and at man's failure to realise the need to use his little knowledge to work for, and not against, nature, coupled with his passionately held belief that the extermination of a species was "the greatest blasphemy of which man is capable", led him to devote much of his energy in recent years to the work of the Berks, Bucks and Oxon Naturalists' Trust. He was elected to the Provisional Executive Committee at the inaugural meeting in 1959, and served on the Council until 1965, when he was elected an Honorary Vice-President.

His lectures and conversation were always illuminated by flashes of his unique and roguish humour. In fact, he himself once remarked that he was "seldom sober"! On geological field excursions, which were always led by Professor Hawkins, he aroused great enthusiasm for geology among members of the Society, and was always ready to answer, in his clear and interesting fashion, any question put by the veriest amateur.

Failing power of natural locomotion in the last two or three years prevented him from attending meetings and field excursions, and he was much missed on these occasions, but a member who visited him quite recently reported him still in "scintillating form" and even as recently as 27th November, when he and his wife came to lunch with me, his conversation was as entertaining and sparkling as ever. He

will be greatly missed by those of us who were fortunate enough to know him, but happy memories of him will endure for a great many years.

The sincere sympathy of all members will go out to Mrs. Hawkins, a fellow-member, who frequently accompanied him to meetings and on field excursions, and is well known to many of us. We extend our sympathy also to his daughter and two sons by a previous marriage.

A. G. Erith

REMINISCENCES IN NATURAL HISTORY

PART 2

By the Rev. S. E. Chavasse

First of all, I must apologise for my arthritic writing, which resulted in some mistakes and omissions in the first part of this article (Reading Naturalist no. 20: 18-23). Notes on cuckoos should have included one of two eggs in the nest of a hedge-sparrow; after the eggs had hatched, my gardener Hobbs saw a hen cuckoo enter the nest. A year later, he found a fresh cuckoo feather above the nest. As to corrections, the five-foot snake was bitten by a half-grown rat, not vice versa. Fagi, the Lobster Moth and the Brown Hairstreak butterflies were found at Cranbourne, not Wicken Fen. The rare Lunar Yellow Underwing (orbona), of which 15 were taken, came to sugar. On the Fosse Way (W. Wilts. border), the White-letter Hairstreak (w-album) congregated on privet July 1912, 'next' year not 'one'.

Bees

Isle of Wight disease occurred in W. Wilts. in 1908, and recurred several times. Altogether, three million skeps were killed all up the country to John o'Groats. The poorer beekeepers stopped replacing destroyed stock and a valuable cottage industry was to a great extent lost before the cause and its cure (salycilic acid; or any strong scent, such as onion) were found. As it took about 20 years to discover the large mites in the bees' spiracles, with a thousand million tame creatures coming to die at our feet, no wonder it has proved impossible to find the cause of death (which is perhaps

an invisible virus) of 24 out of 25 larvae and pupae of wild insects over the past 40 years.

'Bees do nothing invariably.' The perfect honey year was 1921. I had three swarms in April. A fellow clergyman nearer the South Downs took 5 cwt. (sold at two shillings a pound) from four hives.

The year 1922 started equally well, and I extracted 30 lb. of pale green holly honey on May 31st from one hive. The weather broke next day and it rained for 42 days. Bees came to sting inside the Rectory. 25 hives were full of brood. One that had swarmed had a queen that had just hatched; she did not mate, and began to lay for 45 days, although 30 was thought to be the limit. Another had capped queen cells; at the end of 42 days the hive was full of bees but there was no worker brood, and in mid-July there was a week's honey and most hives swarmed. About August 1st the rains restarted, and the poor things lay soaked on hedges or under boughs all over Sussex.

I was told of an enormous swarm of Italian stock at Burghfield, that had probably flown 3½ miles from Mr. Berklay's county apiary at Calcot. It did not look as large as it had been described, but we found the smaller half on a tussock half-drowned. This was the only time I knew swarms to separate (though I had a large one that killed the young queen and every bee of a smaller swarm, and another seized a small hive with brood just hatched). I ran the Burghfield bees in that night, and before noon next day they had robbed out a weak hive. A swarm once did the same thing to its parent colony: fortunately, neither of them continued such practices, or bee-keeping would be even harder than it is, what with our N.W. winds, short honey flows and gravel drying out. Early on, I bought a lovely Italian queen, but I looked at it too often and it left. Its daughter's brood was so vicious that I could not work it for honey for five minutes with smoke and carbolic cloth. A grand-daughter zebra had with her one or two drones, all pure gold save the brown eyes; but, twice hived, they flew off.

At Ufton, I caught a pure gold scarab about half the size of a dumble-dor, coated with Allium pollen. They are now much less heard, as Grey heard them, or seen by the roadside covered with shiny yellow lice, than they were 60 years ago. In 1928, a cousin at Malvern found a very rare sight in his garden: turning out the old rough paper of a Hornet's nest, he encountered three splendid queens hibernating. I saw a very strong Hornet's nest in Wychwood in 1892, higher in a tree than usual. The ground beneath was a parterre of Vanessid wings, but the Hornets had flown with whole Red Admirals and other butterflies.

In 1921 and some other years, wasps were a great trouble to bees, especially as one wasp is as strong as three bees. They carried off grubs as well as honey, and would sometimes seize two bees on the

alighting board and fly off with them. I had made my extracting shed bee-proof, yet one August I killed in it over 1,100 wasps per day. The origin was a wood-wasp's nest in an empty hive (which often started as the nest of a long-tailed wood mouse or a pygmy shrew - 18 babies - or of 15 blue or great tits). This nest had few workers left when I discovered it, but I killed 65 queens and at least half of them must have flown earlier. Another wasp's nest was in deep sand at Lynch Rectory gate. I stopped its exit and stamped it down. When I looked two days later, on about August 25th, there was an oblong patch of over 400 queens drying their wings. What a find for a flower-show boy - and there must have been an even greater number within. A badger ate every grub and the paper of a nest at the gate of my kitchen garden, but about 5,000 wasps hung in the big hole and many of them may have been queens.

Rabbits

On Whit-Monday, 1914, I walked with a friend of my bishop godfather along the top of the South Downs for 75 or 80 miles, in glorious weather but with the sea hidden beneath a mist. We saw four kinds of blue butterfly, many Duke of Burgundy Fritillary, and some orchids on the bare soil under the 150 ft. beeches. At Burpham we talked with one of four old shepherds, each of whom had 200 sheep; he had been to Whitsun Communion at 5.30 a.m. (Twelve years later, I met a daughter of one of these shepherds who was looking after a thousand sheep.) Our shepherd pointed out a big brown patch on a down where there had been a warren of five thousand rabbits the year before. After an attack of 'spotted liver', the 200 left moved location. I had 140 rabbits (mostly, in fact, Belgian hares) in 1917, when meat was scarce. Almost all of them died in June, at the same time as all tame rabbits in hutches or on lawns and the majority of wild rabbits around Midhurst. Stoats and weasels were common in those days. A particularly large Belgian hare got out one day, and later I heard the usual shriek and within two minutes found her lying helpless on her side, with a very small weasel dancing round. We found wild rabbits too, still fresh, with all the offals eaten down from the neck.

I recall three interesting instances of death in rabbits. My mother saw a Pine Marten dragging a rabbit in a wild bit of country at Kemble in 1912; soon after, there was a baby rabbit looking lost. The groom jumped down to pick it up, but it ran down a 9-in. scoop and he picked it out, stone dead. In the second case, my small children were walking on a drive near Telegraph Hill when a half-grown rabbit jumped out of the undergrowth and fell dead at their feet. Thirdly, when I was biking at 7.30 a.m. to a clerical meeting at Easebourne, a fully-grown rabbit ran down a bank, dashed into the road at 12 m.p.h. and landed for a tenth of a second. A stoat, much faster, bit its neck as I reached them, and it was quite dead although otherwise unwounded.

F. Monger, the Ufton keeper, bred and trained ferrets, which fed

well on his shooting. A white ferret mated to a fine polecat had twelve young, but they were reduced to five in five weeks by cannibalism. Once when turning the corner of a ride in Badminton Woods, I saw a rabbit a few yards down. Before it, a fox danced on the tips of his toes, moving back and forth across the ride and each time getting two or three feet nearer to his mesmerised prey.

Now for a last weasel story. About August 2nd, 1900, I was on a 1,000-ft. ridge above Buxton among Grass of Parnassus and Bog Pimpernell, when I saw a Comma butterfly on a thistle, which raised the interesting query of how far away the nearest Comma locality might be. Entering one of the earliest sycamore plantations (then about 18 years old), with a temperature of about 80°, my head became surrounded by a mass of flies which lined every stem black. Suddenly, a line of 16 grown weasels crossed my path, following their leader in single file at about 10 m.p.h. and each in turn leaping over low bramble or a fallen stick. The general appearance was that of a great serpent. There were no rabbits nearby; but beyond, on Cat and Fiddle Moors, there were blackcock and small knots of assembling antler moths.

I recall also piles of crayfish shells left by rats on the Dove at Haddon Hall. My father remembered a disease destroying crayfish in about 1865 in all the Thames Valley except for some tributary headwaters.

During the Second World War, some species of birds trebled their numbers, and this was especially true of such species as the Coot and the Carrion Crow. F. Monger shot or poisoned 50 of the latter in the Ufton withy bed in 1946, but I found three nestlings in a bat willow the next year. These trees, planted before the war by Sir H. Benyon, quickly weakened the reeds and the Belgian withies planted for basket making - a disease was spoiling the 'bats' at that time in Cambridgeshire - and the Warblers rapidly decreased. Swallows' nests are often taken by sparrows, and the young of many birds may be drained by vermin: such as the fine Jay I once caught but dropped on seeing the size of the lice ascending my arm, numbers of them three-cornered in shape like those on hedgehogs; there were also obscene flat green flies.

I think that in 1946 many Martins were assiduously feeding their third broods in the sunshine until October 5th, when the weather changed and these had to be left to their fate. Little Owls increased in numbers. I found one killed under oak roots with 11 broken eggs. Another, sitting on a gate, picked off three young pheasants trailing behind their mother.

In 1939, there were several nests with young of the Great Crested Grebe on the School Pond (which was later drained) at Solly Joel's, and in 1947 about ten were stuffed, having been shot on ice near Reading. I believe 1947 was the year when the Kennet remained open from Newbury to Theale, although all other rivers in the area were

frozen, so that birds flocked to it from every coast and river. There were flocks of Grey Lag and Pink-footed Geese of the order of 150, and companies and families of Curlew and Green Plover and every kind of Duck, Sheldrake, Teal, Pochard, Canvas Back and so on, and many Gulls. Such a sight may not again be seen in central England for a hundred years.

For three years running I saw a Great Grey Shrike on telegraph wires on Padworth Common, where I also heard Nightingales sing at midday. Grey and Yellow Wagtails and Kingfishers were on the Kennet, and both the Green and the Great Spotted Woodpeckers built in the kitchen garden. I watched a cock of the former excavating a damson. The Great Spotted Woodpecker was usually in a beech on the road from Three Firs to Round Oak, and another was in an apple tree at Barney's Cottage, Padworth. The Lesser Spotted Woodpecker lived in sound oaks. The last egg I saw in the kitchen garden was being sat on by a Pigeon in October, 1957.

WILLOW EPIPHYTES

By Mrs. A. M. Simmonds

Of all our native trees, the Crack Willow (Salix fragilis L.) is surely the most long-suffering. We are all familiar with the lines of 'mop-heads' on sturdy trunks which flank many of the rivers and minor waterways of the Thames Valley. Probably, few people realise that, if left unshorn, this species will grow to a height of 80 or 90 feet and become a very graceful tree. Not only does it suffer the degradation of mutilation in being frequently pollarded, but it is a consequence of this operation that the tree becomes the home of many other plants both great and small. These range from lowly mosses and annuals to long-lived shrubs or even small trees, the latter sometimes maturing to produce flowers and fruit. Such plants are not parasites, for they live a normal life, manufacturing their own food-supplies in the normal way. Rather are they lodgers or guests, albeit self-supporting (and non-paying as far as one can gather); the willow tree merely affords them shelter and lodging. They may thus be classed as epiphytes.

The conditions conducive to these epiphytic growths appear to be firstly an accumulation of moist debris in the crevices between the pollard branches. This affords a suitable matrix for the germination of seeds that are either wind- or bird-sown. This litter breaks down and becomes humus and then soil, which builds up into a considerable layer over a lengthy period. The continual percolation of moisture into the top of the bole sometimes causes the trunk to split, and such trunks, which usually take on an angle, are most often adorned with a growth of mosses.

Not all pollarded willows are host-plants; those which are frequently lopped usually support but a few annual species. It is the old trees which have been pollarded and then left uncut for many years that exhibit the most interesting and varied lodgers. There is a row of about 60 such trees along the road running from Sonning to Playhatch corner (Lower Henley Road). They have limbs up to approximately 20 feet in length, with diameters of at least six inches. Most of them were found on examination to house more than one species, and only three of them were unoccupied. As observations were confined to one side only of the trees, some plants may have been overlooked. The results are given in the Tablesoverleaf.

Willow Epiphytes (a)

Willow No.	Ash	Blackberry	Cherry	Comfrey	Currant	Dandelion	Dewberry	Dog Rose	Elder	Gooseberry	Grasses	Guelder-rose	Hawthorn	Ivy	Male Fern	Mosses	Nettle	Spear Thistle	Willowherb, Rosebay	Other Willowherbs	Woody Nightshade	Yew	No. of species
1					+			+					+	+									4
2					+									+							+		3
3								+	+														2
4					+								+										2
5													+										1
6				+																			1
7		+												+									2
8														+									1
9														+									1
10									+												+	+	3
11																							0
12									+				+								+		3
13				+				+			+			+		+		+					6
14		+		+				+								+							4
15								+	+														2
16														+									1
17								+					+	+									3
18	+													+						+			3
19								+					+	+				+					4
20																		+					1
21											+a		+	+									3
22				+			+				+b		+	+							+		6
23								+			+	+											3
24				+					+		+a		+			+							5
25													+			+		+		+			4
26								+			+a	+	+					+					4
27				+				+				+						+			+		4
28				+				+			+c												3
29					+			+			+a				+			+			+		5
30			+			+		+			-							+			+		5
Totals	1	2	1	6	4	1	1	13	5	0	8	2	11	12	1	3	9	0	0	2	6	1	

Willow Epiphytes (b)

Willow No.	Ash	Blackberry	Cherry	Comfrey	Currant	Dandelion	Dewberry	Dog Rose	Elder	Gooseberry	Grasses	Guelder-rose	Hawthorn	Ivy	Male Fern	Mosses	Nettle	Spear Thistle	Willowherb, Rosebay	Other Willowherbs	Woody Nightshade	Yew	No. of species
31		+																	+				2
32					+d						+a						+						3
33											+e					+			+	+			4
34													+				+						2
35								+					+				+						3
36													+						+				2
37		+																					1
38		+																					1
39																					+		1
40											+		+										2
41								+													+		2
42								+												+			2
43								+													+		2
44										+			+										2
45																				+			1
46													+				+						2
47											+												1
48												+	+										2
49													+	+					+				3
50													+										1
51																	+				+		2
52													+										1
53								+	+								+	+					4
54																							0
55			+					+					+										3
56			+																				1
57																							0
58								+															1
59					+			+															2
60													+										1
Totals	1	5	3	6	6	1	1	21	6	1	12	3	23	13	1	4	15	1	4	5	10	1	
	1·7	8·3	5	10	10	1·7	1·7	35	10	1·7	20	5	38	22	1·7	6·7	25	1·7	6·7	8·3	17	1·7	On trees
Frequency (%)	0·7	3·5	2·1	4·2	4·2	0·7	0·7	15	4·2	0·7	8·4	2·1	16	9·1	0·7	2·8	10·5	0·7	2·8	3·5	7	0·7	Of epiphytes

The following are the scientific names of the plants listed in the foregoing Table, where common names were used for reasons of space:-

Ash (Fraxinus excelsior L.); Blackberry (Rubus fruticosus agg.); Cherry (Prunus avium (L.)); Comfrey (Symphytum officinale L.); Currant (Ribes; (d) Red Currant (R. sylvestre (Lam.))); Dandelion (Taraxacum officinale agg.); Dewberry (Rubus caesius L.); Dog Rose (Rosa canina L.); Elder (Sambucus nigra L.); Gooseberry (Ribes uva-crispa L.); Grasses: (a) Cock's foot (Dactylis glomerata L.), (b) Rough Meadow-grass (Poa trivialis L.), (c) Agrostis sp., (e) Poa sp.; Guelder-rose (Viburnum opulus L.); Hawthorn (Crataegus monogyna Jacq.); Ivy (Hedera helix L.); Male Fern (Dryopteris filix-mas (L.)); Nettle (Urtica dioica L.); Spear Thistle (Cirsium vulgare (Savi); Rosebay Willowherb (Chamaenerion angustifolium (L.)); other Willowherbs (Epilobium spp.); Woody Nightshade (Solanum dulcamara L.); Yew (Taxus baccata L.).

Of the plants of Viburnum opulus and Prunus avium, two and one, respectively, bore fruit. Sambucus nigra was flourishing and had almost completely taken over the crown of one tree. Of the dry-fruited plants, Urtica dioica was most frequently encountered; as the fruits are flattened, one can imagine them to be easily wind-borne. That there was only one fern is not surprising, as ferns are not very plentiful in the neighbourhood. Otherwise, there seems no apparent reason why some trees supported a larger number or variety of epiphytes than others.

FULL ALBINO FROGS BRED FROM WHITE SPAWN IN READING

By Arthur Price

Of the pigmented frogs (Rana temporaria L.) reared from white spawn in 1968 (Price, 1967 & 1968), four females, all of which have laid black spawn, and the male (Charlie) are still alive. Charlie, who has been reluctant to breed, was given a subcutaneous injection of chorionic gonadotropin during the breeding season, but still did not mate. As these frogs can be individually identified, it will be of interest to establish how long they live in captivity. The Matriarch, now 87 mm. long and 94 g. in weight, must be eight and could be ten years old; a check will be made of her age when she dies. One pigmented female has been bred from one of the two black eggs which were laid with the white spawn by the Matriarch in 1967. This frog (Nigger) is now 60 mm. x 32 g., and could breed precociously in 1969.

The frogs which were bred from the 1966 white spawn pigmented as they developed. As they were bred for the purpose of providing additional males to breed with 1965 females and they all turned out to be females, they were released after they had laid black spawn precociously in 1968. I have, however, received one male, Jim, bred from white spawn which I had given to Mrs. B. M. Newman. He measured 60 mm. x 32 g. in November 1968, and will be left in the frog house to breed (I hope in 1969) with the 1965 females.

An attempt was made to cross the Matriarch, which lays white spawn, with the double recessive male, Mickie. On 20 March 1968, 600 cc. of white spawn, again containing two black eggs, were laid but it proved to be infertile. The two frogs were only seen in amplexus after the spawn had been laid; they may or may not have been in amplexus before oviposition. Mickie developed black nuptial pads during the breeding season. He was 61 mm. x 26 g. on 3 March 1968, having lost 2.5% of his weight during hibernation. He lost a further 14% during his stay of eighteen days in the breeding tank. On 23 November 1968 he was 65 mm. x 28 g. A further attempt will be made in 1969 to cross these two frogs.

The two surviving, double recessive frogs which were bred from the 1967 white spawn found in the Highmoor Road pond are of different sexes. The male was 61 mm. x 28 g. on 24 November 1968 and the female 65 mm. x 36 g. An attempt will be made to breed from them in 1969. The gonads are developing in the female; white spawn can be seen through the skin of the abdomen. It is of interest that Nigger, who has pigmented eyes, has not overtaken the 1967 female pink frog although all four frogs in the tank received similar treatment. These two frogs, together with Nigger and Mickie, were allowed to hibernate on 24 November 1968. A full record of all

lengths and weights have been kept.

During the spring of 1968, a watch was kept at the Highmoor Road pond and both the male and female frogs were closely observed. They were seen to resemble the heterozygous frogs bred from the white spawn, i.e. normal colouring with the characteristic black patches on the back. No albinos or partial albinos were seen. The spring of 1968 saw a reduction in the number of clumps of white spawn laid in the Highmoor Road pond to 16 from 20 in 1967. This number is expected to decrease annually as the generation of frogs thought to be responsible for this spawn dies out, resulting eventually in the end of this outbreak. The clumps of white spawn laid have all been similar in size, suggesting that the frogs responsible are also the same size and possibly the same age. An interval of thirty years could elapse before white spawn occurs again in Reading.

Two whole clumps of white spawn and samples of all the other clumps were removed for study. A late frost around 10 April 1968 killed most of the white spawn remaining in the pond, but the black spawn was not so badly affected. White spawn was distributed to Redlands Primary School, St. Joseph's Convent, Reading School, Sutton Secondary School and to Dr. G. Smallcombe. All the samples contained some double recessive tadpoles. St. Joseph's Convent was particularly successful, for on 22 June 1968, I took possession of eight pink frogs which they had brought through metamorphosis. The other schools had varying degrees of success.

On 9 June 1968, Mr. T. Warwick of Edinburgh University collected 24 double recessive tadpoles, some near to metamorphosis, for the Zoology Department. On 27 November 1968, he stated that eight of them were still living, the largest being rather less than 26 mm. long. He also said that several of these frogs had distorted pelvic girdles.

During 1968, some three hundred double recessive tadpoles that had hatched from the Highmoor Road white spawn were studied, and a change in the colour of the gall bladder could be seen during development in 25% of them. The colour changed from light to a darker green and eventually appeared black. (This was the black spot mentioned in an earlier paper (Price, 1967), and is possibly due to the normal bile pigments formed during the break-down of haemoglobin.) In only 2% of the double recessive tadpoles was the tail kinked.

On 24 November 1968, twelve of the double recessive frogs resulting from the 1968 Highmoor Road white spawn were living, ranging from 40 mm. to 24 mm. in length. They will not be allowed to hibernate but will be allowed to overwinter in a vivarium on my

desk; some food will be available. So far there are no external indications of sex.

A survey was made in the spring of 1968 of all suitable ponds in the vicinity of the Highmoor Road pond to find out whether white spawn was being laid in any other pond in the area. The result was negative; only the one pond was involved. In one pond in a garden about a half a mile from the Highmoor pond, male and female frogs closely resembling the heterozygous frogs bred from white spawn were seen in the breeding season but no white spawn was laid.

During the breeding season of 1969 my frog-house may be partitioned so that the heterozygous and homozygous frogs will be allowed to breed in separate halves. The identification of individual heterozygous frogs has been made possible by the presence of the black patches on the back, which change but slowly. It is possible to identify Mickie and the 1967 double recessive male and female at present, but when the twelve 1968 pink frogs grow larger, considerable difficulty can be expected. Any suggestions for possible methods of marking, or of otherwise identifying them will be welcome.

Grateful thanks are due to the many friends, colleagues and pond owners who have rendered valuable assistance, especially the patient owners of the Highmoor Road pond who have endured much during the search for knowledge.

Summary

Twelve double recessive frogs, bred from the 1968 Highmoor Road white spawn, were still alive on 7 December 1968. The male and female double recessive frogs bred from the 1967 Highmoor Road white spawn could breed precociously in 1969. (Fertile spawn was laid on 7th April, 1969 - a few tadpoles are developing).

A 1965 (?) double recessive male, which was caught in the wild, was unsuccessfully mated with the Matriarch in 1968. Three two-year-old frogs laid spawn precociously in 1968.

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THE READING & DISTRICT NATURAL HISTORY SOCIETY: A BRIEF HISTORY

By Mrs. A. M. Simmonds

During the latter half of the nineteenth century, many local natural history societies came into being. Our own society, under the title of 'The Reading Natural History Society', was founded at the Lodge Hotel in May 1881. On that occasion, the first Annual General Meeting, the object and aims of the Society were stated and the rules, which had been formulated by a provisional committee, were adopted. The subscription was fixed at half-a-crown.

Field excursions were held at fortnightly intervals during the spring and summer, members usually travelling by train (at cheap rates) to places of local natural interest. It is recorded that on one occasion members walked from Caversham to Peppard. Indoor meetings during the winter months appear to have been rather irregular fixtures; 'specimen meetings' and 'holiday chats' were popular events.

There is no record of the original number of members, but it was probably about twenty. In 1891, it is noted that three ladies were elected, which gives the impression that hitherto membership had been strictly male. In the early years of the present century, by reason of a special effort, membership reached the 100 mark, but that was not maintained. The onset of the First World War caused activities to be temporarily suspended during the winter of 1915-1916, but they were resumed during the summer. During this and subsequent years, the Society frequently joined forces with the now defunct Reading Literary and Scientific Society. From 1918 to 1924 there was a steady increase in membership, but in 1927 attendance at both indoor and outdoor meetings was so small that fixtures were reduced to one a month.

In 1931, the Society celebrated its jubilee, and there was increased activity. The first exhibition, a three-day affair held at the Museum, attracted interest and membership again surpassed 100. The stringencies of the black-out in the Second World War curtailed activities during the winter months. Meetings were again reduced to one a month, alternately afternoons and evenings, the latter being arranged to coincide with maximum moonlight. The early post-war years shewed a fairly steady membership despite the absence of many of our promising younger members. The advent of natural history programmes on radio and television stimulated interest, and the exhibitions held in 1946 and 1956 (75th anniversary) each brought a quota of new members. During the last decade membership has doubled and remained fairly steady.

There has always been a strong liaison between the Society and the Reading Museum. The first President, Dr. Joseph Stevens, (who was later the first honorary Curator) and many subsequent officers and speakers, have been recruited from the Museum staff. The display of local plant-life, which was first introduced in the Museum in 1916, has been almost entirely maintained by members of the Society.

As is the case with many similar bodies, the Society has no premises of its own. During its 87 years, it has met in many buildings: St. Lawrence's Parish Room; the Brewery Room, Chain Street; Friends' Institute; Abbey Gateway; the Geology Theatre at the University; and finally in the Municipal Art Gallery.

Of the founder-members, the names of several are still remembered. J. L. Hawkins, who was Recorder for ornithology for many years and a member until his death in 1937, was the father of Professor H. L. Hawkins, who himself died very recently. William Holland, a self-taught naturalist and an entomologist of more than local repute, made a remarkable collection of Lepidoptera (mainly of local species) that was purchased by Mr. George Palmer and presented to the Reading Museum, thereby becoming an inspiration to generations of young naturalists. The last of the founder-members, H. M. Wallis, died in 1941; it was at his house that the Society had its inception. F. W. Cocks, who was a member from 1907 until his death at the early age of 42, was another outstanding entomologist; his collection of 11,000 British beetles and 4,000 British Lepidoptera may also be seen in the Museum.

In 1900, the Society produced 'The Flowering Plants, Ferns, etc. of the Country round Reading'. This neat clothbound volume of 76 pages (7 x 5 in.) was compiled by members and printed and published by Turner Bros. in their 'Local Series'. This was followed in 1933 by 'Quaestiones Naturales', which was intended to be an annual record of the Society's proceedings. An ambitious venture of some 120 pages quarto, it contained articles on various aspects of natural history of both local and general interest contributed by members, but lack of support caused the project to be abandoned after the publication of but one part. It was not until 1949 that the first volume of our present periodical, 'The Reading Naturalist', was published. The first two issues were printed, but rising costs necessitated resort to duplication and this policy has been continued. The journal, containing the Recorders' reports, articles of specific interest, Presidential addresses, meteorological records and so on, has increased over the years from a modest 20 pages to about 60.

In 1916 came affiliation with the South-eastern Union of Scientific Societies, and in conjunction with the University of Reading the Society has acted as host at Union Congresses in Reading

in 1921, 1934, 1943 and 1958. Other bodies with which there is liaison include the Royal Entomological Society of London, the British Mycological Society, the Botanical Society of the British Isles; the Council for Nature; the Berkshire, Buckinghamshire and Oxfordshire Naturalists' Trust, and neighbouring local field societies. Individual members have taken part in various projects outside the ordinary programmes, such as the B.S.B.I. atlas scheme, badger and entomological surveys, recrding for the recently-published 'Flora of Berkshire' and for the proposed new flora of Oxfordshire, and conservation work in connection with the B.B.O.N.T.

It has always been an aim of the Society to encourage young naturalists, and to this end was formed a Junior Section in 1961. This has its own programme of monthly meetings during the winter (attendance at which ranges from 60 to 150) and field excursions in the summer. The Young Naturalists' Evening held annually in the Large Town Hall since 1958, in conjunction with the Museum Committee, is also well supported.

Over the years, the general pattern of the Society's activities has changed a little. With the publication of members' records, the previously held Recorders' Evening was dropped and an extra Members' Evening (with coffee and biscuits) substituted. Other innovations have been the shortening of the business items at the Annual General Meeting, thus enabling the Presidential Address to be delivered on that occasion, and the addition of a walk each month to the winter programme. The object of the Society remains unchanged from that stated in 1881, namely: the practical study in all its branches of the natural history of Reading and district, with the added aim of fostering the love and care of our wild-life which is increasingly in danger from the inroads of urbanisation.

WEATHER RECORDS IN 1968

By A. E. Moon

The data refer to Reading University Meteorological Station. This is now situated on the eastern side of Whiteknights Park. Records were discontinued at the main site in London Road on 31st December 1967 after nearly 50 years of almost continuous recording. As the station is an entirely new siting, the averages for the main site station are no longer applicable and are omitted from this summary. A "rain day" is a day on which rainfall equals or exceeds 0.01 of an inch. For the designation of frost and ground frost days see Weather Records in 1961.

STATION - READING UNIVERSITY. HEIGHT ABOVE MEAN SEA LEVEL - 226 ft.

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEAR
MEAN DAILY TEMPERATURES °F.	MAX.	44.3	41.2	51.3	55.3	58.9	68.3	68.2	67.1	64.9	61.0	48.0	40.9	55.8
	MIN.	33.9	30.7	37.6	37.8	43.0	51.3	52.6	53.5	50.9	49.6	39.4	32.9	42.8
	MEAN.	39.1	35.9	44.5	46.5	50.9	59.8	60.4	60.3	57.9	55.3	43.7	36.9	49.3
	RANGE	10.4	10.5	13.7	17.5	15.9	17.0	15.6	13.6	14.0	11.4	8.6	8.0	13.0
	GRASS MIN.	29.7	24.9	31.4	27.6	34.2	44.5	45.0	47.0	42.9	42.2	34.4	28.4	36.1
EXTREME TEMPERATURES °F.	E. MAX.	54	46	70	71	73	80	89	80	74	68	56	53	89
	DATE	14	1	28,29	21	31	30	1	22	9	20,21	1	21	July 1
	E. MIN.	17	22	30	27	37	43	44	44	45	41	29	22	17
	DATE	10	4	3,4,16	8	6,19	1	4	19	3,4,19	15	5	14,15	Jan. 10
	E. GRASS MIN.	8	10	21	12	25	28	31	32	32	29	20	12	8
	DATE	12,13	4	3,16	8	6	1	4	19	5,18	14,15	5	14	Jan. 12,13
DAYS WITH	FROST	13	19	5	9	0	0	0	0	0	0	3	14	63
" "	GROUND FROST	18	24	16	19	15	1	1	0	1	2	13	21	131
SUNSHINE HOURS	SUM.	47.7	70.8	151.7	179.2	178.0	196.4	152.4	116.9	126.2	73.7	45.9	32.2	1371.1
	% POSS.	18	25	41	43	37	40	31	26	33	22	17	13	31
	DAILY MEAN.	1.53	2.44	4.89	5.97	5.74	6.54	4.91	3.77	4.20	2.38	1.53	1.03	3.74
PRECIPITATION ins.	AMOUNT	2.46	1.09	0.77	2.17	2.77	2.53	3.12	2.59	5.40	2.28	2.00	3.07	30.25
	RAIN DAYS	17	11	13	14	19	16	11	17	21	14	14	13	180
	MAX. RAIN IN 1 DAY	0.83	0.47	0.17	0.36	0.43	0.57	1.04	0.52	1.96	0.43	0.49	0.69	1.96
	DATE	8	13	30	17,18	4	27	10	8	15	8	1	24	Sept. 15
LONGEST RUN OF CONSECUTIVE RAIN DAYS		6	3	6	5	10	10	5	5	6	5	6	4	-
LONGEST RUN OF CONSECUTIVE DRY DAYS		5	8	7	9	5	10	7	7	3	6	5	10	-
SNOW OR SLEET DAYS		8	5	2	2	0	0	0	0	0	0	1	5	23
DAYS SNOW LYING		6	0	0	0	0	0	0	0	0	0	0	7	13
VISIBILITY	FOG AT 0900 G.M.T.	4	4	0	1	1	0	0	2	0	4	4	9	29
THUNDERSTORM ACTIVITY	DAYS OF THUNDER	0	0	1	4	2	4	2	2	3	0	0	0	18
	DAYS OF HAIL	0	0	1	0	1	0	0	0	0	0	0	0	2

MONTHLY WEATHER NOTES

1968

January	A cloudy month, rather cold in the first half but milder in the latter half. It was the wettest January since 1962.
February	This was the coldest February since 1963 and there were frequent night frosts.
March	The driest month of the year. Temperature reached 60°F for the first time this year on 27th (61°F).
April	The first half of this month was rather cold, but the second half became somewhat warmer and it was the sunniest April since 1954.
May	A cool month and cloudier and wetter than normal.
June	Rainfall was above average but temperature and sunshine were close to average.
July	The night of 30th June/1st July was the warmest July night since 28th July 1948; it was also the warmest July day since 5th July 1959. During heavy rain on the 10th, 0.10 of an inch of rain fell in two minutes at 22h.12m., and 0.20 of an inch in the quarter hour 21h.45m. to 22h. On 1st, a shower at 06h. G.M.T. brought down a quantity of very fine, light, fawn-coloured dust which had travelled with the upper winds from the region of the Sahara.
August	Cloudy and cool. Sunshine was the lowest August total since records began in Reading in 1939. The previous lowest was 118.9 hours in 1958.
September	This was the wettest September since reliable records began at Reading University in 1921. The two previous wettest Septembers were 1927, 4.91 ins. and 1965, 4.55 ins. The 15th was the wettest September day with the exception of 11th September 1921 with 1.97 ins. The first autumn ground frost occurred on 5th (32°F).
October	Cloudy and very mild. It was the warmest October since 1959.
November	The first half was cold, and although the second half became much milder it was very dull and the sunshine figures were the lowest since 1962. The first air frost of the autumn/winter period occurred on 5th (29°F).
December	The dullest December since 1958; the 13th was the coldest December day since 6th 1962. Snowfall occurred over the Christmas period and averaged between 2 and 3 inches in depth.

THE RECORDER'S REPORT FOR ENTOMOLOGY

1967-68

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

Order Orthoptera (Grasshoppers, Bush Crickets, etc.)

Meconema thalassinum (Deg.) Oak Bush Cricket

Dr. Burtt has continued to observe this species in the beech woods at Goring Heath and reports that he found adults more scattered than in 1967. The maximum numbers of females found on the trunks on any one day was 20 (cf. 31 last year). The occurrence of a male at Jackson's Corner, Reading, constitutes an unusual 'new locality'. The Oak Bush Cricket is well known for continuing into late autumn and we had evidence of this on 10th November when five females were found on beech trunks in Bottom Wood, Hardwick. Four of them had their ovipositors inserted into cracks in the beech bark, but no ova were revealed by careful excavation.

Leptophyes punctatissima Bosc. Speckled Bush Cricket

Dr. Burtt has previously recorded this species from Oxfordshire (Reading Naturalist No. 17. 1965), but from many years of observation had not seen it on the heathland at Wokefield Common, Berkshire, until 1968. This first record was made on 26th August, the specimen being discovered upon Rose-bay Willow Herb.

Pholidoptera griseoaptera (Deg.) Autumn Bush Cricket

Reported as abundant on Wokefield Common during the autumn.

Order Dictyoptera (Cockroaches)

Ectobius lapponicus (L.) Dusky Native Cockroach

A female of this species was observed to fly off a bramble frond, 3 feet in height, at Wokefield Common on 6th August. The length of wing in female lapponicus is considerably shorter than in the male; it is therefore a very interesting observation substantiating flight in a brachypterus insect. Dr. Burtt records a further female lapponicus on 4th October, but did not witness flight in this second example.

Order Lepidoptera (Butterflies and Moths)

1968 proved to be a good year for many of our showy butterflies, the Vanessids. Dr. Watson sent in the following note: "On Saturday last, and again on Sunday, October 5th and 6th, the following butterflies were in view on Michaelmas Daisies in my garden at Cleeve, Goring. Red Admiral - several; Comma - one at least; Painted Lady - one at least; Small Tortoiseshell - in plenty. Peacock - a few on suitable days earlier, i.e. September." The Recorder counted 16 Peacocks on one small Buddleia bush near Watlington Park, Oxon., on 24th August.

Notes on immigrant moths

By comparison with the above immigrant Vanessids, noted immigrant moths can be given but one mention:

Acherontia atropos L. Death's Head Hawk-moth

25th August. One example to mercury-vapour light at Monk Sherborne, Hants. Commander Warren Gilchrist. One example discovered near Bracknell and taken to Sandy Lane School. Report via. Crowthorne Natural History Society.

Notes on resident species

Apatura iris (L.) Purple Emperor

On the occasion of the Society's visit to Pamber Forest on 20th July, several members had the pleasure of seeing a male of this fine butterfly flying strongly around a group of oaks in the late afternoon sunshine between 5 and 6 p.m. A male was reported from Bramley Frith Wood on 11th August, and the specimen was brought into the Museum by our young member Colin Horwood who had set the butterfly for the even younger captor.

Strymonidia w-album (Knoch) White-letter Hairstreak

Mr. Roy Leeke records this little hairstreak from a site within the Borough boundary in the neighbourhood of Acre Road. He observed six examples as they fed on wild parsley flowers on 18th July (presumably there were common or wych elms nearby on which the colony would be breeding). W-album is a very local species probably present in other localities close to Reading but so far overlooked.

Phragmotobia fuliginosa (L.) Ruby Tiger

During the autumn Dr. Burtt found two 'tiger' larvae on Wokefield

Common, the identity of which was puzzling. Larvae of this group mostly hibernate and do not pupate until the spring, but both of these examples pupated in October. One was found to contain an undetermined parasite but the other produced a fine Ruby Tiger moth on 5th November.

Aporophyla nigra (Haw.) Black Rustic

Our only county records of this handsome moth all appear to be from east Berkshire, as, for instance, at Crowthorne where the species used not to be uncommon at sugar in the autumn. On the evening of 4th October the Recorder noticed a female nigra sitting on the pavement in Berkeley Avenue in the glare of a street mercury-vapour light. We are used to seeing numbers of nigra when working the Dorset coast in the autumn and had almost dismissed this Berkeley Avenue specimen as not worth a second look until it was realised that the coast was many miles distant.

Sesia apiformis (Clerck) Hornet Clearwing

A new colony (as far as our records go) was observed every day for a period of three weeks from early June until early July and 11 examples were recorded over this period. It was also possible to obtain a colour record of the emergence of this impressive looking clearwing, the series showing an unhatched pupa sticking out from a black poplar trunk and successive stages up to and including the pre-flight stage. With the apparent failure of the Coley Recreation Ground colony due to removal of host trees, it is encouraging to be able to report that apiformis still inhabits trees in the town that are under no immediate threat.

Aegeria myopaeformis (Borkh.) Red-belted Clearwing

Mr. Price visited the Recorder on 6th July to report that one of his pupils, Colin Sims, had seen this very local species in close proximity to an apple tree in his garden. Colin has presented a specimen to the Museum collections (Mr. Price having set the insect on 6th July), and this example makes a valued addition to the Cocks, Dolton and Holland reference collecti n of Lepidoptera.

Order Coleoptera (Beetles)

Carabus auratus L.

This rarely-encountered ground-beetle of a striking metallic green appearance has been found by Colin Sims in a house in Bulmershe Road. The specimen, taken on 29th April, has generously been presented to the Museum Collection by Colin, through Mr. Arthur Price.

C. auratus is said to be a common species across the Channel where it feeds on the harmful larvae of Cockchafers.

Order Hymenoptera (Bees, Ants, Wasps, Ichneumon-flies, etc.)

Phaeogenes cephalotes Wesm.

A male and a female of this rare Ichneumon-fly were bred from sticks containing pupae of the clearwing Aegeria spheciformis (Schiff). The insects emerged on 18th and 30th June.

Eumenes coarctata (L.) Heath Potter Wasp

The nests of this little solitary wasp used to be discovered, not uncommonly, on the heaths of Burghfield and Silchester by our former Recorder, the late Mr. C. Runge. These nests, made of clay, and looking like small pots of thumbnail size, would now appear less frequent to come by than in Mr. Runge's time. A careful search at Silchester Common on 7th April, lasting some 2 hours, resulted in the finding of only 1 nest - and that in a prominent position upon a spike of a gorse bush. The wasp emerged on 26th May and constitutes the only specimen in the Museum Collection, which previously contained only a number of empty nests. Any member wishing to try a Eumenes search would be welcome to view such material as the Museum possesses.

Bombus jonellus (Kirby) Heath Humble-bee

Found not uncommonly on the heaths at Silchester and Burghfield by Dr. Burtt, who has in recent years also taken it sparingly at Goring Heath in, as he points out, a very atypical habitat. This species is said to be restricted to areas where heather and bilberry are the plant dominants. Any record of an extent of either of these plants around Goring Heath would be welcomed.

Psithyrus bohemicus (Seidl.) Gipsy Cuckoo-bee

Cuckoo-bees enslave the workers of true Humble-bees, P. bohemicus having as its host Bombus lucorum L., the Small Earth Humble-bee. Dr. Burtt records P. bohemicus from Wokefield Common and Goring Heath, both areas being well away from the main distribution centres for this species in northern and western England.

Order Diptera (True flies)

In Reading Naturalist No. 20, it was reported that Mr. P. N. Crow had taken the rare Therevid fly Psilocephala ardea F. The

material has now been re-examined by the British Museum who report that it is of the closely related Psilocephala melaleuca Loew., also a very rare species.

Calliprobola speciosa (Rossi.)

Further specimens of this fine Syrphid are recorded by Mr. Crow, the locality again being in the Windsor area.

Arctophyla fulva Harris

Several taken by Mr. Crow in Carbin's Wood, nr. Woolhampton, at the end of August. The insects were visiting the flowers of scabious.

Conops strigata Wied.

18th August. Wokefield Common, from ragwort flowers (E.B.).

The Recorder thanks those members who have sent in records from which the Report has been compiled and again acknowledges our indebtedness to the Director of Reading Museum and Art Gallery for the facility to incorporate the relevant museum records.

By way of a tailpiece, we would like to add that the Society's wish to hold a further nocturnal entomological excursion received encouraging support. Miss Cobb was kept very busy at Pamber Forest on the night of 20th July in logging the names of Lepidoptera attracted to two portable mercury-vapour lamps, some 70 species visiting one of the lamps and 52 the other. Whilst no very rare species turned up, these expeditions afford a good opportunity for members to become acquainted with a host of our larger and very attractively coloured species, thereby helping future identifications in the field.

THE RECORDER'S REPORT FOR BOTANY

1967-68

By B. M. Newman

This year has seen the publication of "The Flora of Berkshire" by Dr. H. J. M. Bowen. Local botanists will welcome this useful reference book, the first flora of Berkshire to be published for over seventy years.

Records received include three new county records for Berkshire, Cyrtomium falcatum, Epilobium nerterioides and Allium paradoxum, and one new to Oxfordshire, Thalictrum minus, all sent in by Dr. Bowen.

The nomenclature and order are according to "A List of British Vascular Plants" by J. E. Dandy. An alien taxon, i.e. one known or believed to have been introduced by the agency of man, is indicated by an asterisk.

Records sent in by the following members are gratefully acknowledged:- Dr. H. J. M. Bowen (HJMB); Miss L. E. Cobb (LEC); Miss L. Lynton (LL); Mr. M. Sell (MS); Mrs. A. M. Simmonds (AMS); Dr. J. Toothill (JT); Mrs. E. M. Trembath (EMT); Miss J. M. Watson (JW).

Osmunda regalis L. Royal Fern
A ditch near Crowthorne (S. R. J. Woodell via HJMB)

Asplenium adiantum-nigrum L. Black Spleenwort
Nettlebed; Cleeve (AMS)

Asplenium trichomanes L. Common (or Maidenhair) Spleenwort
Caversham Court; Binfield Heath; Cray House; Bolney Court; Shiplake; Cleeve, on NHS walk (AMS)

Asplenium ruta-muraria L. Wall-rue
Shiplake; Cleeve, on NHS walk (AMS); Checkendon churchyard (LEC)

Ceterach officinarum DC. Rusty-back Fern
On a mortared wall near Cleeve (M. V. Fletcher via HJMB)

Dryopteris dilatata (Hoffm.) A. Gray Broad Buckler Fern
Garson's Hill; Exlade Street (LEC)

Polystichum setiferum (Forsk.) Woynar Soft Shield Fern
Near Stoke Row (AMS); Bridle path, Mounthill Copse, Stanford Dingley (EMT)

Polystichum aculeatum (L.) Roth Hard Shield Fern
Near Stoke Row; Near Henley (AMS)

*Cyrtomium falcatum (L.f.) C Presl House Holly Fern
On a mortared wall near Reading Station (M. V. Fletcher via HJMB); this is a new record for Berkshire (v.c.22).

Caltha palustris L. Kingcup
Hill's Meadow (AMS)

Thalictrum flavum L. Meadow Rue
Sonning Lane; near Shiplake (AMS); backwater of Thames, near Fawley Court, Henley (JT); riverside below Hartslock Wood, Goring (EMT)

Thalictrum minus L. Lesser Meadow Rue
Established escape, South Stoke (HJMB); this is a new record for Oxfordshire (v.c.23).

*Mahonia aquifolium (Pursh) Nutt. Oregon Grape
Streatley Hill, Berks. (LL)

Papaver dubium L. Pale Poppy
Ipsden; near Mongewell Woods, Nuffield (LEC)

Papaver argemone L. Pale Poppy
Chalky cornfield near South Stoke (MS)

Fumaria micrantha Lag. Dense Flowered Fumitory
Cornfield near Nuffield (AMS)

*Diplotaxis (L.) DC Wall-rocket
Vastern Road goods-yard, Reading (AMS)

*Coronopus didymus (L.) Sm. Lesser Swine Cress
Buckingham Drive - recorded here in 1949; Redland Inns gravel pits (AMS)

Iberis amara L. Candytuft
Garson's Hill; near Mongewell Woods (LEC)

Erophila verna (L.) Chevall. Whitlow Grass
South Stoke; old wall at Dunsden (AMS); covering sand-bags reinforcing river bank at Pangbourne (EMT)

Cardamine bulbifera (L.) Crantz Coral-wort
Bisham Wood (Dentaria bulbifera L.; 1944 (A. J. M. Bailey via HJMB))

Rorippa sylvestris (L.) Bess. Creeping Yellow-cress
Buckingham Drive (AMS)

Rorippa amphibia (L.) Bess. Greater Yellow-cress
Great Lea Common (MS)

*Erysimum cheiranthoides L. Treacle Mustard
Waste ground, Bozedown Farm, Whitchurch (EMT)

Arabidopsis thaliana (L.) Heynh. Thale Cress
Whitchurch churchyard (EMT)

Hypericum montanum L. Pale St. John's Wort
Shiplake; Nuffield (AMS)

Silene noctiflora L. Night-flowering Catchfly
Cornfield near South Stoke (AMS)

Silene dioica (L.) Clairv. Red Campion
The covert, near Scots Farm, Checkendon (LEC)

Saponaria officinalis L. Soapwort
River bank, Whitchurch (EMT)

Cerastium arvense L. Field Mouse-ear
Watlington Hill, on NHS walk (AMS)

Stellaria palustris Retz. Marsh Stitchwort
Flood meadow, Whitchurch (EMT)

Sagina ciliata Fr. Fringed Pearlwort
Lower Henley Road; towpath near Henley; gravel pit, Redland Inns (AMS)

Montia fontana L. subsp. chondrosperma (Fenzl) Walters Blinks
Damp lawn, Windsor Great Park (HJMB)

Chenopodium polyspermum L. Many-seeded Goosefoot
Reading (AMS)

*Chenopodium hybridum L. Sowbane
Garden, Mount Pleasant, Reading (HJMB)

Chenopodium rubrum L. Red Goosefoot
Whitley Street, Reading (AMS)

Geranium pratense L. Meadow Cranesbill
Ipsden; Checkenden playing field; Berins Hill (LEC); Christchurch meadow (AMS)

*Geranium versicolor L.
A naturalised garden escape, Dunsden (AMS)

Geranium pyrenaicum Burm. f. Mountain Cranesbill
Ipsden (LEC)

Geranium columbinum L. Long-stalked Cranesbill
Watlington Hill; Goring (MS); Kingwood Common, rare (HJMB)

Geranium lucidum L. Shining Geranium
Buckingham Drive (AMS); the covert, near Scots Farm, Checkendon (LEC)

Erodium cicutarium (L.) L'Herit. Common Stork's Bill
Edge of farmland, Coldharbour; near Magpie Farm, Frilsham (EMT)

*Oxalis corniculata L. Sleeping Beauty
Gravel drives and flagstone paths, Whitchurch (EMT)

*Impatiens capensis Meerb. Orange Balsam
River Thames, Goring (HJMB)

*Impatiens parviflora DC Small Balsam
Lock Island, Whitchurch (EMT); between Checkendon and Woodcote (LEC)

*Impatiens glandulifera Royle Policeman's Helmet
Garson's Hill, Ipsden (LEC)

Ulex minor Roth Dwarf Gorse
Several colonies on Peppard Common (HJMB)

*Melilotus alba Medic. White Melilot
One plant on roadside, Goring (MS)

Trifolium arvense L. Haresfoot Clover
Kidmore Road, an old locus (AMS); near Marley Tile gravel pit off Bath Road (EMT)

Trifolium striatum L. Soft Clover
Buckingham Drive (AMS)

*Tetragonolobus maritimus (L.) Roth Dragons Teeth
Streatley Hill, Grim's Dyke (MS)

*Galega off icinalis L. Goat's Rue
Meadow near Goring (MS)

Lathyrus nissolia L. Grass Vetchling
Clay grassland, Didcot Power Station (HJMB)

*Lathyrus latifolius L. Everlasting Pea
Railway banks, South Stoke

Lathyrus montanus Bernh. Bitter Vetch
College Wood (AMS)

Filipendula vulgaris Moench. Dropwort
Watlington Hill (MS)

Rubus idaeus L. Raspberry
Plentiful near Nettlebed (AMS)

*Prunus domestica L. Wild Plum
Binfield Heath (AMS)

Sorbus torminalis (L.) Crantz Wild Service Tree
Pamber Forest (MS); well grown tree on Span Hill, Henley Road (AMS)

Sedum telephium L. Orpine, Livelong
Near Toker's Green; Chalkhouse Lane; Binfield Heath; Belle Hatch Park (AMS); Checkendon (LEC); some fine plants on bridle path between Pathhill and Copyhold Farm, Whitchurch, were cut by the verge cutter when just in flower (EMT); a few scattered plants on roadside S.E. from Burnt Hill (JT)

Chrysosplenium oppositifolium L. Golden Saxifrage
Damp alderwood off Nunhide Lane, Theale (EMT)

Daphne laureola L. Spurge Laurel
Streatley Hill (LL)

Epilobium adnatum Griseb. Square-stemmed Willowherb
Caversham (AMS)

*Epilobium nerterioides A. Cunn.
Mortared wall near Reading Hospital. A new record for Berkshire (v.c. 22) (HJMB)

Thesium humifusum DC. Bastard Toadflax
Hogtrough Bottom, a new record (AMS)

Anthriscus caucalis Bieb. Burr-chervil
Six plants in the Abbey ruins (A long-standing record) (AMS)

Scandix pecten-veneris L. Shepherd's Needle
Fair Mile (MS)

Sison amomum L. Stone Parsley
Near Binfield Heath (AMS)

Berula erecta (Huds.) Coville Lesser Water Parsnip
Near Playhatch (AMS)

Oenanthe fistulosa L. Common or Tubular Water Dropwort
Ditch in flood meadow, Whitchurch (EMT)

Silaum silaus (L.) Schinz & Thell. Pepper Saxifrage
Flood meadow, Whitchurch (EMT)

*Heracleum mantegazzianum Somm. & Levier Giant Hogweed
By railway, north of Goring (HJMB)

*Euphorbia uralinensis Fisch. ex Link Hungarian Spurge
Still growing in S.R. goods-yard, Vastern Road, Reading (Old record) (AMS)

Polygonum hydropiper L. Water-pepper
Hill's Meadow, Caversham (LL)

*Polygonum sachalinense F. Schmidt Giant Knotweed
Peppard (MS)

Parietaria diffusa Mert. & Koch Pellitory
Playhatch; Nuffield (AMS); in the brickwork under Cholsey railway bridge (EMT)

*Helxine soleirolii Req. Mind-your-own-business
Bases of walls, Goring (HJMB)

Quercus petraea (Mattuschka) Liebl. Durmast Oak
Grimsbury Castle, Hermitage (HJMB)

Salix purpurea L. Purple Osier
Sonning Lane (AMS)

Calluna vulgaris (L.) Hull Ling
Stoke Row churchyard (LEC)

Monotropa hypopitys L. Yellow Bird's Nest
Watlington (MS)

Monotropa hypopitys L. subsp hypophegia Wallr.
Stoneycroft plantation, Whitchurch (EMT)

Monotropa hypopitys L. subsp hypopitys
Swinley (E. E. Green via HJMB)

Lysimachia vulgaris L. Yellow Loosestrife
Hill's Meadow; near Henley (AMS); a flourishing colony at Childe-Beale Trust has been destroyed by filling in. A few plants have appeared on opposite bank of river (EMT)

*Buddleja davidii Franch. Buddleia
Caversham Road car park, Reading (LEC)

Vinca minor L. Lesser Periwinkle
Sulham Woods (MS)

Menyanthes trifoliata L. Bogbean
Greywell, near Hook, Hants. (MS)

*Symphytum orientale L. Eastern Comfrey
Buckland Drive, Reading (AMS)

*Pentaglottis sempervirens (L.) Tausch Green Alkanet
Heckfield (AMS)

Lycopsis arvensis L. Field Bugloss
Nuffield, A423 (AMS)

Lithospermum officinale L. Gromwell
Stapnall's Farm, Gatchampton (EMT); Scrubland, S.W. of Hambleden (JT)

Lithospermum arvense L. Corn Gromwell
Aston Upthorpe Downs (MS)

Echium vulgare L. Viper's Bugloss
Plentiful scattering of plants on chalk grass slopes of Bozedown Farm, Whitchurch (EMT); bare ground near Didcot Power Station (HJMB)

Cuscuta europaea L. Greater Dodder
On Urtica dioica along riverside below Hartslock Wood, Goring (EMT)

Cuscuta epithymum (L.) L. Common Dodder
Growing on Bastard Toadflax at Goring (MS)

Atropa belladonna L. Deadly Nightshade
Abundant on felled hillside, Garson's Hill; one plant in hedge Berin's Hill (LEC)

*Datura stramonium L. Thorn-apple
Chatham Street, Reading (AMS)

Misopates orontium (L.) Raf. Lesser Snapdragon
Sulham (MS)

Linaria repens (L.) Mill. Pale Toadflax
Caversham Road car park, Reading (LEC); meadows near Goring (MS)

Kickxia spuria (L.) Dumort. Round-leaved Fluellen
Cornfield weed, Lower Henley Road; Mongewell Wood (AMS); cornfield south of Hailey, Oxon. (JT); Whitchurch (MS)

Kickxia elatine (L.) Dumort. Pointed-leaved Fluellen
Cornfield weed, Lower Henley Road; Mongewell Wood (AMS); field S.W. of Ashampstead; garden weed, Birdhill Avenue (JT)

*Mimulus guttatus DC Monkey Flower
Theale gravel pits (MS)

Veronica catenata Pennell. Pink Water Speedwell
Theale gravel pits (MS)

Veronica polita Fr. Grey Speedwell
Cornfield near Peppard Common (HJMB)

*Veronica filiformis Sm. Slender Speedwell
An increasing weed of lawns and recreation grounds (AMS)

Pedicularis palustris L. Red Rattle
Greywell, near Hook, Hants. (MS)

Melampyrum pratense L. Common Cow-wheat
Mongewell Woods (LEC)

Lathraea squamaria L. Toothwort
Dyson's Lane - an old locus (AMS)

Verbena officinalis L. Vervain
Near Checkendon churchyard (LEC)

*Mentha spicata L. Spearmint
Sulham Woods. (MS)

Mentha rotundifolia (L.) Huds. Apple-mint
Sulham Woods. Probably a cross between these two species also (MS)

Calamintha ascendens Jord. Common Calamint
Chalk grass slopes near Path Hill, Whitchurch; riverside below Hartslock Wood (EMT)

Stachys arvensis (L.) L. Field Woundwort
Cornfield weed, Span Hill; Nettlebed (AMS)

Galeopsis angustifolia Ehrh. ex Hoffm. Red Hempnettle
Six plants at edge of cornfield off Sulham Lane (EMT); Cornfield weed, Nuffield (AMS)

Nepeta cataria L. Catmint
Nuffield, near A423 (AMS); Goring Woods (MS)

Campanula trachelium L. Nettle-leaved Bellflower
Nettlebed near A423; Nuffield; Hailey Wood; Highdown Road (AMS)

*Campanula rapunculoides L. Creeping Campanula
Established between Goring and South Stoke (HJMB); View Island (AMS)

Campanula rotundifolia L. Harebell
Checkendon churchyard; Stoke Row churchyard (LEC)

Legousia hybrida (L.) Delarb. Venus's Looking Glass
Near Mongewell Woods (LEC); Sulham (MS)

*Asperula arvensis L.
A casual found in a garden at Tilehurst (JW)

Cruciata chersonensis (Willd.) Ehrend. Crosswort
Near Nuffield (AMS)

*Leycesteria formosa Wall.
Lower Warren, possibly bird-sown (AMS)

Bidens tripartita L. Tripartite Bur-marigold
Thames, near Caversham Bridge, Reading (LL)

Senecio viscosus L. Stinking Groundsel
Garson's Hill (LEC)

*Petasites fragrans (Vill.) C. Presl. Winter Heliotrope
Hardwick Road, Whitchurch (EMT); pavement near Crosfields School, Shinfield Road, Reading (JT)

Inula conyza DC. Ploughman's Spikenard
Railway bank, South Stoke (HJMB)

Solidago virgaurea L. Golden Rod
College Woods in clearings for pylons; Redhill Lane, Bradfield (EMT)

Achillea ptarmica L. Sneezewort
Meadows near Goring (MS)

Chrysanthemum segetum L. Corn Marigold
North of Homer Farm (JT)

*Chrysanthemum maximum Ramond Shasta Daisy
In hedge near site of former Polish hostel, Checkendon (LEC)

Chrysanthemum vulgare (L.) Bernh. Tansy
Good colony on bridlepath east of Magpie Farm, Frilsham (EMT)

Cirsium eriophorum (L.) Scop. Woolly Thistle
Two plants in approach to Payables Farm, Checkendon (LEC)

Onopordum acanthium L. Scotch Thistle
A handsome plant on road verge, Stitchens Green (EMT); Pangbourne (MS)

Picris hieracioides L. Hawkweed Ox-Tongue
Railway bank, South Stoke (HJMB)

Crepis biennis L. Rough Hawksbeard
Cleeve, NHS walk (AMS)

Sagittaria sagittifolia L. Arrowhead
Mill pool, Whitchurch (EMT)

Butomus umbellatus L. Flowering Rush
Many plants near Shiplake Lock (AMS)

Zannichellia palustris L. Horned Pondweed
Redland Inns gravel pits (AMS)

Polygonatum multiflorum (L.) All. Solomon's Seal
Near Westwood Manor Farm, north of Nettlebed (AMS); wood S.E. of Ashampstead (JT)

Asparagus officinalis L. Asparagus
In plantation near Hollycopse, Whitchurch (EMT)

Allium vineale L. Crow Garlic
Checkendon; Ipsden (LEC)

*Allium paradoxum (Bieb.) G. Don
Maidenhead Thicket. A new county record (v.c.22) (I. M. Walker via HJMB)

Galanthus nivalis L. Snowdrop
Bush Wood, Stoke Row. Single and double flowers, probably originally planted (AMS)

Iris foetidissima L. Gladdon, Stinking Iris
Flowering at Stoneycroft plantation, Whitchurch

Cephalanthera damasonium (Mill.) Druce White Helleborine
Sulham Woods (MS)

Neottia nidus-avis (L.) Rich. Bird's-nest Orchid
A large colony, Wheatley's Plantation, Whitchurch (EMT)

Platanthera chlorantha (Custer) Reichb. Greater Butterfly Orchid
Whitchurch (EMT); Streatley Hill (MS)

Dactylorchis praetermissa (Druce) Vermeul. Southern Marsh Orchid
One plant at Tilehurst Station (MS)

Carex pseudocyperus L. Cyperus-like Sedge
Emmer Green (AMS); pond near Didcot Power Station (HJMB)

Carex divulsa Stokes Grey Sedge
Grounds of Mapledurham House (JT)

Sieglingia decumbens (L.) Bernh.
Among Calluna at Peppard Common (HJMB)

Catapodium rigidum (L.) C. E. Hubbard Fern Grass
Dunsden; Watlington Hill, NHS walk (AMS)

Hordeum secalinum Schreb. Meadow Barley
Riverside between Sonning and Shiplake; near Henley (AMS)

*Phalaris canariensis L. Canary Grass
Whitley Street, Reading (AMS)

THE RECORDER'S REPORT FOR VERTEBRATES
1967-68

By H. H. Carter, M.A., B.Sc., A.M.A.

FISH

Esox lucius L. Pike

Following the severe drop in water level of Wokefield Common fish pond brought about by a leaking dam and a spell of dry weather, the remains of a Pike were found floating on the surface. When complete, the fish would have been 60 - 80 cm (25 - 30 inches) in length. B. R. B. also reports this species from Pullen's Pond.

Perca fluviatilis L. Perch

Wokefield Common fish pond.

Leuciscus cephalus (L.) Chub

A 35 cm (14 inch) specimen near Cutbush Lane.

Rutilus rutilus (L.) Roach

B. R. B. found a Roach of about 2 kg (4 lb) dead with a typical Otter wound in the shoulder, at Woolhampton on 6/4/1968.

REPTILES

Lacerta vivipara Jacquin Lizard

One found in Tilehurst by Mrs. Stanley on 30/4/68.

Anguis fragilis L. Slow Worm

Several reports and specimens without data, but evidently still common locally.

Natrix natrix (L.) Grass Snake

Three very small young and some unhatched eggs found by Mr. A. Goddard, 11/10/68. Another very young snake found by the same observer at Shinfield Grange on 2/1/69.

Vipera berus (L.) Adder

B. R. B. sends an interesting report of behaviour observed at the edge of Pamber Forest in the valley of the Silchester Brook below Beggar's Bridge and the sewage works, the same area in which P. F. le B. found a skin the previous year. On 26/7/68, 3 adders were seen, two side by side and touching at intervals, the third lying about a foot away. B. R. B. thinks this may have been a phase in the territorial "dance" of male adders (actually a form of unarmed combat). This normally occurs in spring, but has been recorded as late as autumn. Unfortunately the snakes made off before he could determine their sex.

MAMMALS

INSECTIVORA

Talpa europaea L. Mole

Fresh molehills observed at Wallingford, Clayhill Copse near Stanford Dingley, Beenham, Chalkhouse Green and beside the Thames below Reading. A glance through previous reports seems to indicate that this concentration in low-lying valley habitats is characteristic. There are also reports (e.g. last year) from chalk grassland, but hardly any from intermediate localities. More positive and especially negative reports next year, please.

Sorex araneus L. Shrew

Two or three on the edge of Bur Wood on 13/4/68 and one at Toker's Green on 5/7/68.

Sorex minutus L. Pygmy Shrew

One found at Southcote by Anne Pellen, Feb. 1968.

Erinaceus europaeus L. Hedgehog

The usual crop of road deaths; one each at Spencer's Wood and Purley Lane (P. F. le B.) who also found them common between Earley Station and Loddon Bridge in 1967; also a number in Caversham - Emmer Green - Sonning Common area, including one found by A. M. S. in Balmore Park, Caversham, on the unusual date of 28/12/67, although this species is supposed to be a true hibernator.

CHIROPTERA

Pipistrellus pipistrellus (Schreber) Pipistrelle

Two in Kendrick Road during 1967 and one in 1968 (Miss Mason). Singl records at Southlands School on 17/2/68, Broad Street on 20/7/68 (L.L.) and Ipsden on 11/6/68.

CARNIVORA

Vulpes vulpes (L.) Fox

Mrs. Trembath reports up to six in the arboretum by Wantage Hall in Upper Redlands Road at the end of 1967. A. M. S. found a pellet, perhaps of this species, in Juniper Valley (Aston Upthorpe) on 3/3/68. I also have reports of foxes at Ipsden (Mrs. Morton) and Marcham (D. Roxburgh.) Zbigniew and Zdzislaw Karpowitz and Peter Dunn have seen several in and around Sulham Woods, the last being on 13/10/68; a pair had an earth south of Beal's Plantation where they reared 5 - 6 cubs which were seen on 23/5/68 and several days following, and then disappeared. (This is normal behaviour.)

Meles meles (L.) Badger

The work of Messrs. Karpowitz and Dunn on this species in the Sulham area is now well known to members. It is encouraging to learn that the sett in Sulham Woods now has 17 holes, the 4-hole sett in Beal's Plantation has been enlarged and was in use up to 13/10/68, and the sett in Barefoot Copse, blocked earlier in the year, has since been re-opened. Mrs. Yarrow has also reported numbers of badgers at Pangbourne. Setts at Ipsden, Marcham (D. Roxburgh) Redhatch Copse (P. F. le B.) Wheatley's Plantation, Calcot Golf Course (Cllr. Williams) and Crowsley have been added during the year to the lists for Berks. and S. Oxon.

Lutra lutra (L.) Otter

Two seen at Caversham Lock in Jan. 1967 by R. Knightley, the lock keeper. B. R. B. found evidence of one at Woolhampton on 6/4/68 - see above, under Roach.

Mustela nivalis L. Weasel

A male seen on Kingwood Common by E. J. Stanford, 1/1/68. A female in Reades Lane, Sonning Common, on 5/4/68. One seen at Ufton Nervet by B. R. B., 6/4/68. A half-grown youngster reported by Arthur Price crossing Morgan Road, Reading, on 20/9/68.

ARTIODACTYLA

Cervus dama L. Fallow Deer

Slot in College Wood on 27/1/68.

Muntiacus reevesi (Ogilby) (probably) Muntjac

Reported from Stoke Row by Miss Wynwood Reade.

LAGOMORPHA

Lepus capensis Pallas Hare

Recorded at Ipsden by Mrs. Morton. One dead north of Woodcote,

25/5/68. A number of records from Bishopsland Farm and Chalkhouse Green, between Reading and Sonning Common, rising to a maximum of 14 on 23/4/68.

Oryctolagus cuniculus (L.) Rabbit

Recorded at Ipsden by Mrs. Morton. Two south-east of Streatley, 6/3/68. One at Peppard Common on 12/4/68. Three at Bur Wood, Sonning Common, 13/4/68. One in Sulham Woods, 28/12/67 (Karpowitz and Dunn). One living in woodpile at Caversham Lock and feeding on the lock-keeper's vegetables, Jan. 1968. Tracks in Waingels Copse on 9/12/67. P.F. le B. reports rabbits with myxomatosis at Sonning Eye on 15/11/67.

RODENTIA

Rattus norvegicus (Erxleben) Brown Rat

One dead in Peppard Road, Chalkhouse Green, 17/4/68. Two beside the Thames below Reading, 11/10/68. Probably much more abundant in the area than these few records would suggest.

Apodemus sylvaticus (L.) Wood Mouse

Mrs. Trembath reports one in Alexandra Road, Reading, on 7/12/67. Two were found, comatose and half-frozen in very cold weather, 23/2/69, sheltering in a box of old hymn books in an unheated church at Gallowstree Common. These revived, were kept alive for some time and released at Sonning Common.

Apodemus flavicollis (Melchior) Yellow-necked Mouse

Several colonies of this species, unrecorded in Berkshire until 1967, are now known to exist in the Newbury area.

Arvicola amphibius (L.) Water Vole

One at Caversham Cork Factory, 23/10/67, seen by L. L. Two seen beside the Thames below Reading, 11/10/68. (This is not a duplicate of the record of Brown Rat above.) Many holes in use beside the Thames from Reading to Tilehurst. No definite records from Sonning Eye.

Microtus agrestis (L.) Short-tailed Vole

A black one seen at 42 Alexandra Road, Reading.

Sciurus carolinensis Gmelin Grey Squirrel

Numerous records, all from the Caversham - Emmer Green - Sonning Common area from March to September 1968.

SOME NOTES ON BIRDS

Invasion of Nutcrackers

This was the highlight of the ornithological year, producing as it did the first Berkshire record for the species. The bird found dead in Windsor Park came into my hands and was positively identified as the slender-billed Siberian race, Nucifraga caryocatactes macrorhynchus Brehm, to which in all probability belong the whole of the invaders. In addition, I have unchecked records from Binfield Heath in mid-August (Mrs. Welch), Warren Court, Caversham, at the end of October (Mrs. Burr) and Henley on 28/12/68 (Miss Rea). These birds erupt from Siberia at intervals of a few years following the failure of the seed crop of Pinus cembra (the Arolla pine), but not since 1911 has an eruption reached Britain.

Other unusual visitors

These include a Gannet (Sula bassana (L.)) which collided with a house at Earley on 18/1/68 and died 5 days later; and two Leach's Petrels (Oceanodroma leucorhoa (Viellot)), one of which was found dying in Sheridan Avenue on 2/11/67 and the other at Stanford Mill on 13/10/68.

Less unusual, but still worthy of record, are the Water Rail (Rallus aquaticus L.) found dead in Tilehurst on 23/10/68, perhaps the same which spent a considerable time on and around the Pang above Pangbourne earlier in the year and at the end of 1967, and the two Green Sandpipers (Tringa ochropus L.) which frequented Berry Brook from 22/1/68 to 2/2/68.

A Village Duckpond

Since I last referred to the pond at Emmer Green (Reading Naturalist no. 20. p. 51), it has been further stocked with a pair of Carolina Duck (Aix sponsa) and two Shelduck (Tadorna tadorna (L.)).

B. R. Baker
P. J. Carter
P. F. le Brocq
Linda Lynton
Mrs. A. M. Simmonds

GENERAL OBSERVATIONS

Fungi at Kingwood Common (supplementary records)

At the Society's Foray at Kingwood Common on 5th October 1968, the following species (that do not appear in the list of those recorded in 1945-66 published in the Reading Naturalist no. 19: 45-50 or in the supplementary list for 1967 published in no. 20: 54) were among the 74 species identified by Dr. F. B. Hora:

Hypomyces chrysospermus
Phylacteria sp.
Polyporus squamosus
Fistulina hepatica
Boletus albidus
Agaricus placomyces
Clitocybe suaveolens
Collybia rancida
Coprinus lagopus
Cortinarius cinnabarinus
paleaceus
Inocybe napipes
Pholiota togularis
Psathyrella candolleana

A slime mould, Mucilago sponglosa Morgan, found on grass, was identified by Dr. H. Owen.

L. E. Cobb

Skeletal malformation in the frog developed from white spawn

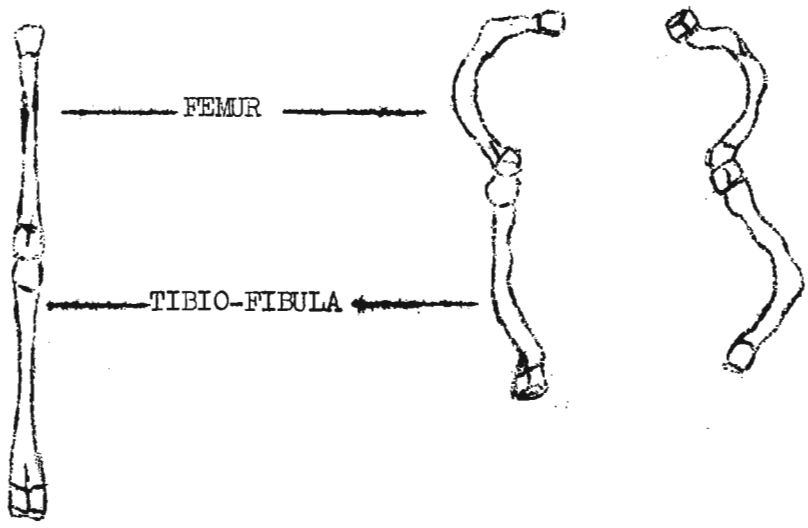
During the last three or four years there has been considerable interest in the local occurrence of white frog spawn. A number of people have reared tadpoles from this spawn, but none with the success achieved by Mr. A. Price, whose sustained interest and industry have brought the frogs to maturity and had them spawn in two years. It is thought that wild frogs mature in three to four years.

My batch of newly hatched white tadpoles died within two days following exposure to sunlight, and it was noticed that each one developed a curvature of the tail prior to expiring. Later, others noticed that some tadpoles with a kinked tail survived and after metamorphosis it was seen that these frogs had some distortion of the urostyle or the pelvic girdle, which caused one hind limb to be held in front of the other.

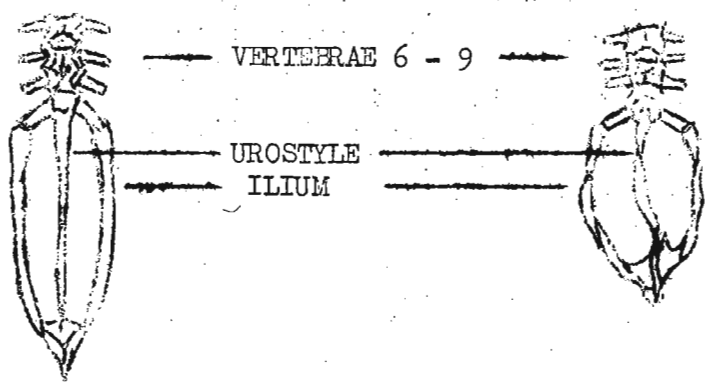
These animals were not albinos; they all developed pigmentation before metamorphosis, and to the casual eye the adults looked quite normal. The first adult of the series to die was dissected; it was an adult female which developed from a 1965 tadpole with a straight tail. The femora, tibio-fibulae, pelvic girdle and the last four

vertebrae were removed and compared with two skeletons from a well known biological supplier. The resulting measurements are given in the Tables.

DRAWINGS OF LIMB BONES (X's 1)



DRAWINGS OF NORMAL (LEFT) AND ABNORMAL PELVIC GIRDLES (X's 1)



SIDE VIEW WITH HALF REMOVED
Dorso-Ventral Curvature

Table I. (Measurements in millimetres.)

Specimen	Overall length	Urostyle	Pelvic girdle
A (normal)	74	24	31
B (normal)	73	26	31
C (abnormal)	70	18	25

(Specimen C would have been the longest frog if it had been normal.)

Table II. (Measurements in millimetres.)

	A	B	C			
	End to end	End to end	End to end		Over curve	
	(Only one leg available)		Left	Right	Left	Right
Femur	31	30	23	22	29	25
Tibio-fibula	35	33	28	25	30	30

It will be seen that the two normal specimens show good correspondence in all measurements, that the abnormal specimen diverges markedly, and further that the hind limbs are not symmetrical in this specimen. In many abnormal frogs of this series the urostyle or the pelvic girdle was bent laterally and it was obvious in the living animal. In specimen C it was depressed dorso-ventrally, which was not obvious in the living animal although the frog had a crouching appearance. The animal was so well fed as to be sub-spherical in shape, which further obscured this deformity.

Kinked tails are not often seen in black tadpoles which develop from black spawn; I have never seen one. It would seem therefore that the deformities described in frogs which developed from white spawn may be due to deficiencies in their early life.

White tadpoles can only survive if screened from direct sunlight. Does this cause a lack of vitamin D and hence some form of rickets? Since the tadpoles do produce pigment before metamorphosis does this mean that the deformities in the adult skeletons are

initiated so early in life? Could the rapid growth and early maturity be responsible for the frogs 'outgrowing their strength' and so causing the bowing of the bones? Is it possible that the diet of captive frogs is in some way deficient, resulting in abnormal development? Perhaps a combination of these factors is responsible.

Finally it has been suggested that frog spawn or tadpoles shaken up during transit could be damaged in some way and so develop abnormally. So far no work has been done on these problems and indeed we are still very ignorant of the ordinary life of the common frog as it is touched upon by the questions raised here.

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C. J. Leeke

The Proposed New Flora of Oxfordshire

Doubtless there will be a preponderance of records from Oxfordshire, as several members are engaged in collecting records for the above project. The survey is being organised by A. R. Perry, Dr A.J. Richards, and Dr S. R. J. Woodell of the Botany School, Oxford. The unit for recording is a 'tetrad' of four one-kilometre squares. Local botanists this season have been covering that part of Oxfordshire bounded by the Thames from Wallingford to Henley, and extending northwards to the 90 grid-reference line on the 1" O.S. map; this is approximately fifty complete tetrads and fifteen portions of various sizes. This work explains the preponderance of records from Oxfordshire in the Recorder's Report for Botany this year.

A. M. Simmonds

Aston Upthorpe Reserve

As a result of conservation work at the Aston Upthorpe Reserve in March, both Pulsatilla vulgaris and Orchis ustulata flowered well. The Pasque-flower successfully set seed, more than fifty heads being observed in June.

A. M. Simmonds