THE

NATURALIST:

A QUARTERLY JOURNAL OF

Natural History for the North of England

EDITED BY
W. A. SLEDGE, Ph.D., B.Sc.,
THE UNIVERSITY, LEEDS;

with the assistance as referees in special departments of

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Ralph Chislett, F.R.P.S., M.B.O.U. — W. H. Pearsall, D.Sc., F.R.S., F.L.S.
Ellen Hazelwood, F.L.S. — E. W. Taylor, C.B.E., D.Sc., F.R.S.
Mrs. Elsie M. Morehouse. — H. C. Versey, D.Sc., F.G.S.

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THE NATURALIST

FOR 1963

BIOLOGICAL PARADOX

ELLEN HAZELWOOD

Presidential Address to the Yorkshire Naturalists' Union, York, December 1st, 1962

MAY I first of all express my thanks and appreciation to you for your kind invitation to be President of the Union. Fortunately the path has been shown to me by others; in 1887 when Sir Ralph Payne-Gallwey was President and again in 1958 when my late husband was President. But there is an important difference; they were both ornithologists whereas I feel rather like the decoyed duck for *Young Shooters*. However, it is somewhat comforting to note that in its first hundred years the Union only found the courage to install its first and only woman President, Miss Lorna Scott, towards the end but now boldly honours the next at the very beginning of the second century and I trust there will be many more to follow.

As naturalists and biologists we are concerned with the flora and fauna, their habits and habitats and particularly their preservation and conservation not merely for our own purposes but on account of their importance and value to the community as a whole. In spite of education there is still a failure to understand and a lack of appreciation of our biological heritage although Nature Reserves are increasing and National Parks are established. The maintenance of their amenities and integrity, however, presents many difficulties and is by no means easy with limited finance and conflicting public and vested interests. On the other hand, vast experiments and ventures into the unknown seem to indicate that we are more interested in death than in life. One reads of millions of pounds of public money being spent on mechanical projects yet street collections appear necessary to aid cancer research, the entire income for which is from voluntary sources. Have we, in fact, lost our sense of values ? What is the difference between life and death ?

Every living cell of every living organism has an unstable organisation of a substance called *protoplasm*; the cell maintains the beautifully complex and specific orderliness of its structure only by a constant use of energy. Energy may be ' free ' or useful, or it may be entropy or useless or degraded. In the process of living the tendency is for the free energy to decline and the entropy to increase. Thus it is that the living protoplasm cannot be analysed and described as a chemical formula for this would entail such changes in the substance that it would no longer be able to utilise energy; no longer would it have the capacity to synthesise large molecules from simpler substances. The dynamic state on which protoplasm depends for its unique properties has gone. Such is the difference between the living and the dead.

Thus a living substance can be observed in motion whilst a dead substance can be examined much more closely and in great detail, but there is little comparison between the two, the missing quantity being *atmosphere*. Rather like the comparison between a Chinese sketch or one of the action paintings of Early Man on the cave walls and a sample of ' modern art ' where anatomy is exaggerated beyond the possibility of function. Perhaps this is the difference between the early naturalists who founded and built up our present Natural History Societies and the so-called ' scientists ' of today for even a sixth-former at a grammar school is nowadays referred to as such. It is the accurate and prolonged observations of these early naturalists which form the basis upon which we build and for whose original work we now introduce a new and high-sounding nomenclature as if it were all being discovered today for the first time. When one turns the pages of such fascinating treasure books as Kerner and Oliver, one cannot help wondering how much has been forgotten even though we can now count the chromosomes. Are we in fact progressing ? Which is the more vital, the living organism entire or a few of its isolated cells about which the biochemists can tell us so much ?

Co-operation between both kinds of workers is necessary if real progress is to be made as it is essential that the distant view should be available as well as the close-up for no single organism can be taken out of its environment and away from the other forms of life which live with and influence it if the living organism is to be understood. After all, what does not eat is itself eaten, hence the chain of life. Perhaps this is why so many of our learned treatises leave one with an empty feeling,

as if one has read all about the subject yet does not even make its acquaintance—it is dead. And so it is with herpetology.

The first list of British reptiles and amphibians was published in 1667 by Dr. Christopher Merrett who grouped them according to the presence or absence of their limbs but it was John Ray in 1693 who first grouped them according to whether the heart had one or two ventricles and whether the dentition was harmless or not.

In 1712 appeared the first detailed county natural history by John Morton, who listed all the reptiles and amphibians to be found in Northamptonshire, whilst a few years later Linnaeus, who had no love for these creatures, named them in Latin.

The first article on lizards and the viper appeared in the *Transactions of the Linnaean Society* in 1804 by Revett Sheppard, but it was not until thirty-five years later that the first book of reptiles appeared by Thomas Bell, *The History of British Reptiles*. In 1881 Clarke and Denison Roebuck published *A Handbook of the Vertebrate Fauna of Yorkshire* containing Roebuck's list of Reptilia and Amphibia. The only reptiles listed are the Grass Snake, Adder, Viviparous Lizard and Slow-worm, all of which continue to occur and the single records of the Leathery Turtle in Bridlington Bay in October 1871 and a dead Hawk's Bill Turtle off Redcar in 1849. The amphibians listed are the Great Crested, Smooth and Palmate Newts, Common Toad and Common Frog, all of which remain widely distributed. There is a record of the Natterjack Toad from *Mytton* on the Lancashire border which I assume to be Mitton, but I have no recent record for this species. Mitton would not appear to be an ideal locality although there is a fairly extensive piece of sandy land down by the river. I wonder whether the original animal(s) recorded had escaped from captivity or perhaps had even been released there.

There is, however, one quite exciting addition to the Yorkshire list. Some years ago specimens of the Midwife Toad (*Alytes obstetricans*) from the colony at Bedford were introduced into a garden near York where they settled successfully and where the species is now resident. Yorkshire has also added another kind of record to her list. A slow-worm caught on Suffield Moor near Scarborough was kept by Mr. Johnson at Halifax Museum where it gave birth to fourteen living young on October 2nd, 1962, plus another eight living young and six which failed to 'hatch' on October 9th, making a grand total of twenty-eight, the most ever to be recorded from a single female.

George Albert Boulenger provided us with the outstanding volumes *Snakes of Europe* and *The Tailless Batrachians of Europe*, parts 1 and 2, published by the Ray Society (1897-8), to be followed by Gerald Leighton's *Life History of British Serpents* (1901) and *Life History of British Lizards* (1903).

The year 1951 saw the publication in the *New Naturalist* series of our book of reference for many years to come, *The British Amphibians and Reptiles* by Malcolm Smith, in which this outstanding medical man, herpetologist and systematist took infinite pains to sift, collect and include a vast quantity of reputable and first-hand material from all possible sources, both British and European, under one cover.

Largely due to the influence and enthusiasm of the late Dr. Smith, the British Herpetological Society was formed and its first *Journal* appeared on June 1st, 1948. It had been hoped to run a northern branch but this proved impracticable. However, the important point here is that for the first time we now have a specialised British journal available to which we can contribute our notes and observations.

But rapid change on an enormous scale takes place throughout the country in the form of so-called development in which vast areas of beautiful country become experimental towns so that environments in which our precious wild creatures used to make their homes are now no longer available to them. No sooner is a distribution map published for a species than the map is outdated and in some remote areas it is frequently almost impossible to check early records. It is to this end that Col. Taylor is now working and we wish him every success in his formidable task. Thus it is we find how few are the specific records available to him from our own county and from V.C. 61 and V.C. 63 in particular.

The recording of the amphibians is somewhat easier than the recording of the reptiles due to the fact that in the breeding season amphibians tend to congregate in large or fairly large numbers due to the necessity of water for egg deposition and in addition to this, the Anura have loud voices so that they can be heard and consequently identified without their having to be seen, though I make no claim that their serenade is likely to bestir the emotions of even a herpetologist: here I must admit second place to the ornithologist!

The Common Frog, of course, is no stranger to any of us; we have all been reared on Marshall, but the surprising thing is that the species still survives at all. A pair of frogs is required to produce about 2,000 eggs to ensure the species' remaining constant, so that it means that within the following three years until maturity is reached all but two of them must perish. Of course, one has only to think of the predators—carnivorous larvae, fish, other tadpoles and amphibians, reptiles and birds, and last, but by no means least, the biologists themselves—to marvel that even that single pair should survive. Here I would make a plea for, having seen hundreds of frogs supplied for study purposes, it would appear that the animals could be treated a little more humanely in the cause of education and science. If life has to be taken, it should be done kindly and swiftly—or not at all.

Although probably no animal has been used so much for laboratory work, its natural history is by no means completely understood. There is a vast difference between the animal as a living creature and the body on the bench, and although much can be learned from work in the laboratory it is the living animal which shows us how it is integrated so that full appreciation can only be obtained and understood by careful study in the laboratory and patient observation of the animal living its normal existence. Even then questions may remain unanswered, problems unsolved and events and reactions unexplained for biological phenomena are inevitably complex and challenge simple or complete analysis.

As an instance, why do the sexes separate after mating so that those frogs inhabiting the marshes in the vicinity of the breeding ponds are males whilst the females are so difficult to locate ? Why do the males remain gregarious and the females solitary ? Segration of the sexes after the breeding period is not, of course, confined to frogs, e.g. our chaffinches do it and become gregarious. Swallows segregate to some extent and the sexes migrate to different places, probably made possible by the fact that the male is better adapted in its build for long distance than the female, but one cannot here claim that the female frog is any more elegant in her proportions than the male ! This type of behaviour would appear to be in some way fundamental to the animals and worthy of investigation.

During winter many adult frogs hibernate in the mud at the bottom of ponds and are the colour of the mud itself, but no matter how slowly you bring them round, they do not survive. Why ? Do we, in fact, only know the dead frog and take the living frog for granted ? In the spring of last year we had what I believe to be the first Yorkshire occurrence of albino tadpoles of the Common Frog in a pond at Settle and I am indebted to Miss Eileen Green who so kindly gave me full information about them and spared seven for me. Unfortunately, there is no information available about the parents. The frogspawn was collected from the steep-sided Lodge Pond at Settle on March 11th, 1961; it contained black embryos but scattered amongst them were batches of spawn containing white embryos. Both black and white embryos hatched on March 16th and 17th in an indoor aquarium containing a mixture of pond and tap water. A second batch of spawn containing both black and white embryos collected on March 21st hatched on March 26th and 27th, and the development of both black and white tadpoles proceeded at the same rate; the white spawn produced pure white tadpoles which, however, gradually developed pigment. Measurements of Miss Green's casualties were as follows:

Date Preserved	*Length of Tadpoles*
27th March, 1961	6 mm. and 7 mm. long
3rd April	11 mm. and 11 mm. long
5th April	9 mm. and 12 mm. long
13th April	15 mm. long
17th April	19 mm.

The seven I received were weighed on May 15th when their weights were 0·29 gm., 0·28, 0·19, 0·20, 0·17, 0·08 and 0·28 gm. respectively, thus averaging 0·21 gm. The average weight of seven normal tadpoles of comparable age was 0·29 gm. On May 29th their weights were 0·35 gm., 0·32, No. 3 had died, 0·27, 0·23, 0·15 gm., No. 7 had died, the average weight now being 0·263 gm. These tadpoles gradually darkened in colour until they were the normal dull brown but, unfortunately, none metamorphosed.

The only other albino tadpoles I have seen were from a batch of spawn at Reading in 1933, but no further information about them was available. None were reared.

Albinism and neoteny would appear to be connected although study material is very scarce and particularly so in Anura. The only records of mature examples of albino Common Frog are of a British adult female which was exhibited alive by Mr. Rowland Ward at the Linnaean Society in 1891 and one from Wiltshire which is now preserved in the British Museum. Thus there would seem to be no chance of artificially fixing an albino race as in the case of the " white " axolotls (*Amblystoma tigrinum*).

The general distribution of reptiles in Yorkshire follows the geology of the county as one might expect, the heather moors being the haunts of the lizard and adder, the lower-lying marshy ground and dykes favouring the Grass Snake and frogs. Grass Snake records need careful sifting as each year the species is imported in quantity from Europe and—how well I know it—so many escape. Whilst some of these are *Natrix natrix helvetica*, like ours, many are of Continental race.

Autotomy occurs in both our Viviparous Lizard and Slow-worm so that if we catch either of these reptiles by the tail, that organ is immediately shed at the place of contact leaving the twitching of the remnant to attract our attention whilst the now tailless reptile escapes. The fracture takes place at a weakened place across the middle of a vertebra and eventually a new tail, not so fine or long as the original is added. Such regeneration of organs has long intrigued the naturalist; what possibilities may not come to pass ? A frog can regenerate a missing limb in its early legged stage but not as an adult; a lizard never can. Recent work has shown that as the growth of other tissues takes place during the development of the tadpole, so do the number of nerve fibres decline at a rate parallel to the gradual loss of the capacity for regeneration; the normal nerve supply in the adult frog is inadequate for regeneration. An increase in the number of nerve fibres at the surface of the wound is able to satisfy the threshold requirement so that regeneration can thus be made possible.

I think nothing gives me quite the thrill of spotting an Adder so beautifully marked, sinuous, graceful and swift as it slithers out of sight into the undergrowth with scarcely a rustle. It is a joy to watch and I think part of the thrill of observing it lies in the unexpectedness of the encounter, its *atmosphere*. An Adder is part of its environment and readily feels the slightest earth tremor so that it behoves one to tread lightly if one is to succeed otherwise the most one can hope for is to see the last inch of tail fast disappearing. In early spring and late summer the Adders are otherwise engaged so that they are then less cautious than at any other time of year and it is at the latter time particularly that one is apt to tread on one unwarily and thus receive press publicity, but, after all, who could blame the creature for having bitten in self defence ?

Fortunately there are many reasons whereby one may not receive the full injection of adder venom so that the intensity of the symptoms varies, but there is always some degree of pain, swelling and discoloration at least surrounding the site of the puncture. As you know, venom is produced by the modified parotid salivary gland. Mammalian blood contains an unstable local hormone, kallidin, in an inactive state due to the presence of carboxypeptidases which destroy it. Kallikrein is an enzyme contained in salivary glands and not surprisingly, therefore, in venom too, but an inactivator for it is also contained in mammalian blood so that under normal circumstances no reaction takes place. Following an injection of adder venom, however, the kallikrein contained in the venom releases the highly active kallidin from the blood there and then. It is this interaction of the kinins which causes the muscles of the blood vessel walls to relax and so convey more blood to the area but at a reduced pressure until the capillaries become so dilated that their walls allow the blood to leak through them and thus discolour the surrounding tissues.

However, there is good in most things and although we are still far from understanding the full complexity of snake venoms, we know that some of the haemotoxic venoms contain some enzymes which cause the erythrocytes to burst and leave protein molecules. Thus in the venom of the rattlesnake we have a commercial source of enzymes which are used in the study of the structure of proteins and nucleic acids. With such our Adder can claim relationship !

Adders, like other creatures, have favourite haunts and here they are to be found sunning themselves regularly. How often do our textbooks tell us ' the mammals are " warm-blooded " animals in contrast to the " cold-blooded " animals ' and that ' reptiles have the temperature of the surrounding atmosphere ' but on what facts are such statements based ? Long years ago some experiments

were performed using a mammal and a lizard in a laboratory where it was duly recorded that the temperature of the lizard rose and fell with the temperature of the laboratory. However, fortunately for the reptiles, their normal environment does not happen to be in such confinement. Let us therefore reconsider the case of our ' cold-blooded ' reptiles in their natural habitat, at large.

Regulation of colour-response is caused by fluctuations in the amount of pituitary secretion which is itself controlled by various (e.g. thermic) receptors in the skin and which is reflexly inhibited by light acting on the retina. We all know that black pigmentation is due to the presence of melanophores which expand when cold and damp and thus cause the body to become darker in colour and thereby increase the rate at which the body can absorb radiant energy and conversely that on a bright sunny day the frogs are very light coloured—I even found one of a gorgeous uniform orange colour sitting in the sun in a pasture near Meltham—due to the contraction of the melanophores which thus expose the light pigments which reflect the infra-red radiation. Thus it would seem in this animal that the melanophores are indirectly responsible for the regulation of the rate at which heat can be absorbed and thus enable the animal to attain its threshold temperature quickly and often enough to enable it to go about its daily quests for food.

It has long been known that the body temperature of the incubating python is well over 90 deg. F. and that snakes are much more ready to strike in bright sunny weather than at other times, and more difficult to catch too, as their speed is like lightning. They are, in fact, ' heliotherms ' deriving the heat needed to energise their body direct from the sun and in order to accomplish this they have developed their habit of basking to a fine art aided by their greatly elongated body which thus exposes more surface in relation to their bulk and by this means increases the reptile's ability to absorb solar energy.

When one realises that *V. berus* has the greatest range of any snake in the world, even entering the Arctic Circle, it is obvious that every degree of available heat is of paramount importance to this animal hence the angle of body presentation and of land inclination towards the sun are also to be considered; is it by accident that in addition this reptile has a black zig-zag mid-dorsal marking or could it be that by having this prominent black mid-dorsal pattern which is so often fully presented to the sun, it is designed as a further aid to the absorption of all the possible heat rays ? On very hot days the Adder is usually to be found coiled up, thus exposing little of its intense colouration.

Reproduction is the greatest test of an animal's successful mastery of its environment and in the species under consideration the eggs are retained within the body of the female until they are fully developed when the young Adders emerge, able to fend for themselves. Thus by her behaviour the mother is able to ensure their required temperature; in the far north of their distribution where the sunny season is of such short duration the snake requires two years in which to reproduce. Hibernation, of course, solves the temperature problem in winter when the snake could not possibly absorb enough solar heat to enable it to replace the energy it would require for the acquisition of food alone. There is a wide variation in colour in the Adder, the only one of our reptiles in which sexual dimorphism occurs, and I have seen a few specimens, females, from the moors around Goathland which have a most beautiful blue belly. Melanistic forms also occur either by the darkening of the ground colour or by the spread of the mid-dorsal marking.

Blue-spotted slow-worms, var. *colchica*, have only been recorded from the south, all males, but I doubt whether this is a true state of affairs. The blue spots are a source of mystery. The only specimen I had was kindly sent to me by the late Malcolm Smith; its spots were only small and when this very fine lizard sloughed, it lost them.

The tongue of a snake, bifid, constantly flickering, always attracts attention, but if one looks carefully it will be seen that the tongue never actually touches anything; instead it, along with Jacobsen's organ, is responsible for the snake's sense of smell which perhaps enables the snake to scent its haunts and may be to locate its prey whether the prey be approaching or in retreat. To watch an Adder stalk its prey is a fascinating sight and I know of nothing to equal it for sheer stealth. I have watched the snake very carefully yet its approach is imperceptible; the rodent may glance up but, detecting nothing, quietly resumes its own business. Sinuously the Adder moves again yet somehow you find yourself wondering whether it did in fact move at all ! It is only when you take an eye's measurement between the

Adder's snout and the rodent that you can assure yourself you are not mistaken. Once within striking distance, the Adder pauses for rather longer than usual as it carefully prepares itself for the lightning strike of its fangs and thus accounts for another of the farmer's foes. It is interesting to note here that as successive pairs of fangs reach full development they gradually move forward to replace the older pair, thus ensuring the maximum efficiency of those hypodermic needles. The mechanism is so perfect that even when the snake yawns, the fangs are risen to their action positions.

Last year, the Nature Conservancy completed a three-year survey of the habits and environment of Adders and much useful information has no doubt been obtained which would certainly have gladdened the heart of W. Hudson who wrote: " When the snakists of the British Museum or other biological workshop have quite done with their snake, have pulled it out of its jar and popped it in again to their hearts' content; weighed, measured, counted ribs and scales, identified its species, subspecies and variety; and have duly put it all down in a book, made a fresh label, perhaps written a paper—when all is finished, something remains to be said; something about the snake . . . "

And today, when so much is being done to recapture the spirit of adventure, to teach biology in our schools on a larger scale than ever before, when examinees are instructed ' to show by their answers that their knowledge of the subject has been based upon the observation and study of living plants and animals ' what is in fact done ? Are the children taken out into the country to really study the living subjects in their natural homes, in their relationships with others which share their environment and thereby learn that all things have an appointed place in relation to everything else, or are the children merely supplied with an isolated living specimen on a watch-glass on a laboratory bench ? Which is the more likely to whet the child's appetite for more ? Will the child become alive to the environment in which it lives or will it become passive like the snake in the jar ? So often is the excuse made that the school is in the middle of a town so where *can* one take the children; but should it not be possible to study those animals and plants which share town life ? Is one environment any more important than another and should the aim not be to get the children interested in other forms of life around them ? Will biology be the lesson of life which it ought to be or will it merely be another subject for the G.C.E. ?

The Yorkshire Naturalists' Union has provided pioneer workers in all branches of natural science but do not let us settle back quietly to become a Union of statistic hunters and graphologists but rather let us be reawakened to the urgency of life, to look at things where they belong and in all their entanglements and thus rejuvenate our natural history societies.

May I, in conclusion, convey my thanks to my fellow members for their having borne with me for so long and may I urge upon us all a determined effort to bring up to date our knowledge of the distribution of vertebrates in Yorkshire and publish a new edition before another hundred years have passed.

Field Studies, Vol. 1, No. 4. July, 1962. Pp. 138 with photographs and drawings. Obtainable from The Field Studies Council, 9 Devereux Court, Strand, London, W.C.2. 10/-.

The current issue of this excellent journal contains five papers, two of which are of particular interest and value to marine biologists. Mr. W. Gifion Jones provides a comprehensive key to the genera of British seaweeds. The key covers blue-green, green, brown and red algae and is based on Knight and Parke's key (1931) but modified in the light of experience gained during field courses at the Marine Biology Station, Menai Bridge. From the same Station Mr. J. S. Ryland contributes a paper on the biology and identification of intertidal Polyzoa. Both papers are well illustrated and are likely to be widely used by students of marine biology in all parts of the country. Yorkshire readers will be specially interested in the article by A. Raistrick and P. F. Holmes on the archaeology of Malham Moor. This is based on the results of field work done during courses held at the Centre over the past ten years. C. A. Sinker contributes an admirable account of the history and plant ecology of the North Shropshire meres and mosses; and the remaining paper by C. L. Hopkins deals with the distribution of Hydracarina in the vicinity of Flatford Mill.

THE YORKSHIRE NATURALISTS' UNION: ONE HUNDRED AND FIRST ANNUAL REPORT

The Hundredth Annual Meeting was held on December 2nd, 1961, at Wakefield by invitation of the Wakefield Naturalists' Society.

The Presidential Address on ' Progress in the Conservation of Nature ' was delivered by the Rt. Hon. the Lord Hurcomb, G.C.B., K.B.E., and was subsequently published in *The Naturalist*, 1-10, 1962.

The Presidency for 1963 has been offered to and accepted by W. A. Sledge, B.Sc., Ph.D.

The Excursions for 1963 will be to:

V.C. 61. Risby, June 15th.
V.C. 62. Langdale End, June 29th.
V.C. 63. Meltham, July 7th.
V.C. 64. Askham Bog, July 20th-21st.
V.C. 65. Hawes (Whitsun), June 1st-3rd.

The Naturalist.—Papers accepted for publication in *The Naturalist* have never been limited by geographical or territorial considerations though it has always been concerned principally with natural history in the north of England and as the official journal of the Yorkshire Naturalists' Union, with Yorkshire in particular. The activity of many Sections of the Y.N.U. is probably no less today than at any previous time in the history of the Union yet the flow of papers by members has shown a marked decrease in recent years, especially in botany and entomology. Field notes and records dealing with notable species or with observations of interest, at present sent to sectional recorders for incorporation in the annual report of the section concerned, are often appropriate for separate and amplified treatment as Field Notes. Members are urged to send such notes to the Editor and to submit articles on their field work for publication.

Membership

At the time of writing membership of the Union comprises 2 Honorary Life Members, 11 Life Members, 460 Ordinary Members, 61 Associate Members and 41 Affiliated Societies. During the year 59 new members were elected; deaths and resignations totalled 36. Losses by death included two Past-Presidents, Dr. H. Hamshaw Thomas and Mr. A. Malins Smith. In view of the issue of a revised list of members it appears unnecessary to duplicate the information which this contains by inserting the customary list of new members and changes of address in this report.

MAMMALS, REPTILES, AMPHIBIANS AND FISHES

(J. R. Govett): 1962 has seen an increase in the number of naturalists contributing to the records of the section. I thank all who sent me notes to make this report possible. More records are needed, however, so that gaps in our knowledge of Yorkshire animals can be filled and records kept up to date. May I appeal to all those ornithologists, botanists and other naturalists who come across animals in the field to send in notes to the recorder. However trivial observations may seem often they are valuable when seen in connection with others; even negative reports are useful in assessing status and distribution.

On February 17th, 1962, a meeting of the Mammals, Reptiles, Amphibians and Fishes Section was held at Leeds University. This was a meeting of the section on its own and its purpose was to discuss ways of enlisting more support and improving the section's activities. The attendance was disappointing, only thirteen people being present. In spite of this some useful discussion took place and it was decided to hold a meeting in conjunction with a local Naturalists' Society. This plan has unfortunately not yet materialised but it is hoped to hold such a meeting in 1963. Mr. B. S. Pashby showed some specimens of Brown and Black Rats and discussed their status in Hull. He also showed some skins of the Long-tailed Field Mouse from Spurn Head. This present report covers the period October 1961 to December 31st, 1962. From this year reports will cover each year from January to December. This will be not so confusing to contributors and will bring the report into line with those of the other sections in the Union.

Mammalia

CHIROPTERA. Mr. R. Rhodes caught a Pipistrelle bat in a mist net at Adwick-le-Street, near Doncaster. A female Pipistrelle was found dying in Leeds Market on May 5th and is now in the City Museum collection (A. Brown, per J.A.). One was at Skeffling (E. Riding) on November 3rd, 1962 (A. H. Rider).

The Noctule is frequently reported from the Roundhay area of Leeds and the Long-eared Bat has been found at Burton Agnes.

RODENTIA

Long-tailed Field Mouse: Mr. T. M. Clegg reports the species as common in most habitats up to 1,200 feet above sea-level in the Sheffield area. Ackworth School Natural History Society have found that this is the most frequently caught mammal in their traps. They have done quite well in captivity.

House Mouse: This species is frequently reported living in rural habitats. Mr. P. Baldwin on noticing seedlings in his garden at Horsforth being destroyed set traps and caught three House Mice and one Long-tailed Field Mouse together with three Common Shrews.

Brown Rat: A decrease is reported in the Sheffield area but it is still common. It is frequently seen about Kirkstall Forge, Leeds and on various stretches of the River Aire. Very common in the Doncaster and Ackworth districts.

Rats: In 1961 380 Black Rats were destroyed (111 in one ship) by the Hull and Goole Port Health Authority and 49 Brown Rats in warehouses. No Brown Rats were taken on ships and no Black Rats in the warehouses. During 1961 the Health Department of Hull destroyed 18,661 rodents within the city. The usual small proportion of Black Rats were present (per B. S. Pashby).

Water Vole: The Secretary of the Brighouse Angling Society says that it is very common along the canal from Elland to Brighouse. This species seems to be plentiful in suitable habitats in many parts of Yorkshire. Common in dykes bordering Thorne Waste, Dewsbury. Fairly common in the lower river valleys of the Sheffield area. Mr. Clegg says there seems to be evidence of summer occurrence on moorland waters which are vacated in winter. J. B. Hague reports that bad pollution of the River Dearne near Mexborough does not seem to adversely affect the water vole population, neither has a drop in water level along one two-mile stretch isolated by the cutting of a new canal. One or two Water Voles are often to be seen in the 'Canal Zone' lagoons at Spurn.

Bank Vole: Remains of this species were found in an owl pellet collected on Allerthorpe Common on April 28th, 1962. Mr. T. M. Clegg reports this species more numerous than *Microtus agrestis* in the Totley suburb of Sheffield. John Armitage has trapped it in the Meanwood district of Leeds together with Long-tailed Field Mouse and Short-tailed Field Vole.

They are stated to be the next commonest small mammal after Long-tailed Field Mouse in the Ackworth district, being caught all year round on the banks of the River Went. They have done well in captivity.

Short-tailed Field Vole: One was found dead on January 4th, 1962, by B. S. Pashby in an old church burial ground in an industrial area of Hull. He also found one dead in a warehouse on the first floor in the same area on February 10th. Trapping statistics by Ackworth School Natural History Society seem to indicate that this species is not very common in that area. Attempts to keep them in captivity were unsuccessful.

Grey Squirrel: One occurred at Threshfield on June 27th, 1962. Grey Squirrels are reported from Skipton Woods and Bolton Abbey. Mr. Leonard Carr says they are fairly abundant and probably increasing in the Goathland area. This species continues to thrive throughout most of the county and is reported as increasing in numbers in the Sheffield, Leeds and Bradford areas. Mr. I. Morley reports that during the past few years the Halifax Scientific Society has taken surveys of some of the wooded areas of the Halifax district and this year (1962) Shibden Valley was the objective. It was noted with interest that the Grey Squirrel was much in evidence. This contrasts with the fact that only two have been recorded in the parish during the past twenty years.

Red Squirrel: Miss S. D. Brooks of the Upper Wharfedale Society reports that none have been seen in Grass Woods and Grassington since October 21st, 1961. There has been extensive felling in their main haunts. They have been reported

from Dewsbury but are thought to be declining in numbers. Also records have come in from Halifax woods, Newmillerdam, Wombwell, Barnsley and Sheffield where it may be increasing to the north and west of the city.

In the east of the county it has been reported from Burton Agnes, North Ferriby (in June), Wombleton, near Pickering (March 3rd), and up to three seen during the year at Burton Constable. L. Carr says that the species is probably extinct at Goathland.

LAGOMORPHA

Rabbit: Widespread throughout the county. The rabbit seems to be getting up to considerable strength in numbers in many parts of Yorkshire following decimation by myxomatosis.

Brown Hare: It is reported to be frequently seen now in Littondale whereas before the introduction of myxomatosis there were few or none; in fact one attempt at introduction in this area did not succeed (Miss S. Brooks). There are indications that this species is increasing in the Upper Wharfedale area and adjoining valleys. In general it is more common on open ground in the south of the county but the distribution appears patchy and subject to considerable fluctuation. More records are needed to ascertain the status of this animal.

On April 24th a large one was in the vicinity of the Corporation filter beds plantation at Otley Road, Leeds 16, for at least six months (C. H. Wilson).

Odd ones are frequently seen on the Humber marshes where they can be cut off by spring tides and have to swim for land (Hull Naturalists' Society). A few are seen on the Spurn Peninsula even at the point.

Blue Hare: Present in fair strength on the moors in the Bradfield-Derwent-Langsett area. Mr. T. M. Clegg counted over thirty above Derwent Reservoir on several occasions during April.

INSECTIVORA

Hedgehog: Occurs in great numbers in many parts of Yorkshire. Reported as scarce in the Goathland district. Often it penetrates into the suburbs of the towns and cities and has a very high mortality rate on the roads.

Common Shrew: A Mole Flea (*Hystrichopsylla talpae talpae* Curtis) was taken from a Common Shrew caught at Ackworth in the autumn.

Pygmy Shrew: At Totley, Sheffield, one out of thirty-four shrews trapped was of this species. It was an adult male caught on April 24th, 1962.

One was found dead at Spurn on September 23rd, 1962. It is not frequently reported but identification of live ones is unreliable.

Water Shrew: Reported from Horsforth Beck, near Leeds, in July by Mr. Baldwin who cannot recall ever seeing them there before in a long residence in the district. Has been trapped at Crosspool, Sheffield, on May 8th, 1962.

Correction to 1960-61 *Report:* Note under ' Water Vole ' of large numbers occurring at the Kirk Smeaton end of Brockadale (River Went) should refer to this species.

Mole: Is this species becoming scarcer ? Some observers believe it is. More information needed.

CARNIVORA

Fox: Statistics of foxes shot in the 1940's (provided by Miss S. Brooks) for Littondale, Upper Wharfedale and Upper Wensleydale show that a large population must reside there in spite of the constant persecution. The occurrence of foxes in a wild state within Hull poses the question, are they escaped pets ?

At least one pair were on Spurn Peninsula during 1962 and one cub is known to have been reared.

Badger: At least two pairs bred and reared cubs at Bretton. They seem to be holding their own at Methley, Horsforth, Halifax, Brockadale, Mexborough and on the Yorkshire-Derbyshire border. A sett was occupied at Burton Agnes this year and it has been reported from Scalby Nabs near Scarborough by M. Johnson. There has been evidence of occupation of Houghton Woods (E. Riding). In Hull a badger was offered for sale in a pet shop for eight guineas, but the R.S.P.C.A. are powerless, says B. S. Pashby, provided it was kept in good condition.

This species continues, like the fox, to be persecuted by people ignorant or blind to the value of this animal as a vermin destroyer. Mr. Maurice Johnson of the Belle Vue Museum at Halifax writes: ' On August 27th, 1962, I watched badgers active at a sett in Wykeham Forest. I am concerned, however, at the indiscriminate gassing of badger setts in this, a National Park area, as I found seven setts inactive due to gassing. The Forestry Commission regard the badger as beneficial to the forest economy, yet gassing is carried out on their ground.'

Otter: This species has been reported from the Arncliffe and Driffield districts. On February 17th and 18th, 1962, two were seen at Winestead, near Patrington, and on June 28th, 1962, tracks were seen by H. O. Bunce through a reed bed near Broomfleet on the Humber. An angler's report of two at a pond in the Broomfleet area confirmed Mr. Bunce's report. There have been very few reports of otters and more information would be useful.

Weasel: One was mobbed by Yellow Wagtails on August 1st, 1962, at Esholt, Bradford (K. Hardcastle). Reported frequently in gardens in the Sheffield area. At Spurn Head weasels were recorded on thirty-two occasions compared with eight reports of the stoat being seen.

Stoat: Miss Brooks reports: Before 1955 when myxomatosis struck in Littondale there were many stoats and few weasels. With the decline in the rabbit population there was a decline noted in the numbers of stoats but a subsequent increase in weasel numbers. Now that rabbits are becoming more numerous again the situation seems to be reverting to its former state.

Some white Stoats appear each winter whether cold is severe or not. A beautiful white Stoat was shot at Grassington in the last week of 1961. A pure white one was seen east of Bowes on February 10th, 1962, by John Cudworth. The stoat is reported as common in most areas of Yorkshire, but scarce at Mexborough.

Seal Species: One has again been seen in the Humber near Faxfleet. It may be the same animal as seen last year (a Grey Atlantic Seal). At Spurn seals are seen in small numbers throughout the year. Those identified showed Common and Grey in about equal numbers.

The following report appeared in the *Yorkshire Post* for December 19th, 1962: 'A Grey Seal, feeding on preserved fish in the River Ouse, has been shot near York, over 40 miles from the coast, by a lock-keeper. Mr. Frank Croft, who has operated Naburn Locks for over 40 years, shot the seal when it surfaced near the weir. He estimated its weight at about six to seven stones. Seals are reputed to eat their own weight in fish every day.' Regarding this last comment, this is typical of the wild exaggerations levelled at wild animals. G. A. Steven, who has studied seals extensively, ascertained that the Common Seal eats an average of ten pounds of food daily and on this information estimated that the Grey Seal being larger would eat about fifteen pounds. Some difference between fifteen pounds and ninety-eight pounds !

UNGULATA

Fallow Deer: Deer of this species are shot from time to time in the Bretton area (Cawthorne), usually by poachers from the towns. Fawns have been seen on occasions (E. Thompson).

It has been seen on Skipwith Common and it is occasionally seen in plantations in the Goathland district. A stag was seen at Harewood Park on March 4th, 1962 (C. H. Wilson).

Sika Deer: K. Hardcastle of Bradford reports seeing three (one male, two female) in the Stocks Reservoir district on April 24th, 1961. The stag was noted to have a very white rump, a coat dark brown on the back, shading to a paler fawn with a dark throat band from chin to chest. The face was pale fawn and the antlers were much paler than in Red Deer, rather straight with two sets of tines.

CETACEA

' Porpoises ' are often reported off the coast. Probably most of these are the Common Porpoise (*Phocaena phocaena* (Linn.)). They occurred more frequently in August and September at Spurn (P. J. Mountford) with a maximum of about fifty on one day in August.

A party of about ten small whales passed south off the Spurn Peninsula on April 11th. From their ponderous movements and relatively large size of body and

fin they were considered probably to be Pilot or Ca'ing Whales, *Globicephala melaena* Traill. by G. R. Edwards and G. R. Naylor. Three similar creatures were seen passing off-shore the following day by one of the same observers.

Reptilia

Slow Worm: A female taken at Barden Tower, River Wharfe, on April 23rd, 1962 (T. Richardson, per J.A.). F. de Boer reported one during September, 1962, at Sleightholmdale. Reported as not numerous but generally distributed locally by L. Carr at Goathland.

An adult female caught on Suffield Moor gave birth to fourteen young in the Halifax Museum live-room on September 2nd, 1962. On October 9th a further eight young were born and six unhatched eggs. This total of twenty-two live young from one female seems to be a record as Malcolm Smith gives nineteen as the highest number of young born recorded in Britain (M. Johnson). This lizard is probably more common than records would indicate.

Viviparous or Common Lizard: Reported from various localities scattered throughout the county. Small numbers have been recorded from April to September at Spurn with five on one day in April.

Grass or Ringed Snake: J. B. Hague of Mexborough reports 1962 as a good year for this species. Care has to be exercised however in assessing the status of the Grass Snake as many reports in the southern industrialised parts of Yorkshire have proved to be escapes from captivity of domesticated pets usually of the Continental form *Natrix n. natrix*. One caught whilst sunbathing at the mill of Sagar-Richards, Luddendenfoot, was believed by Mr. M. Johnson to be a wild British specimen. Mr. F. de Boer found remains of eggs in Farndale at Whitsuntide, 1962.

Adder or Viper: Adders have been reported from Dewsbury, Allerthorpe Common (E. Riding), Coxwold, Goathland and Wykeham Forest.

Amphibia

Crested Newt: Reported as very common in several widely scattered areas. More information is wanted on the distribution and status of the newts.

Common Frog: Spawn was found in South Yorkshire from March 28th onwards. Frogs have been scarcer this year and fewer tadpoles produced in the Leeds and Barnsley areas.

Common Toad: E. Thompson reports that hundreds used the dam in St. Ives estate at Bingley for their spawning gathering in spring. Reported as being commoner than frog in the Pontefract area with all ponds in the district swarming with toads in amplexus during March.

Pisces

A stretch of Crimple Beck almost four miles long from Newsom Bridge at Spofforth to where the beck joins the River Nidd suffered the destruction of thousands of fish—trout, chub, dace, roach and even eels. It was believed to have been caused by some form of pollution.

Trout are reported as occasional in the Horsforth Beck where they were formerly common (P. Baldwin).

A Pike measuring 39 in. long and weighing 23 lb. was taken from the Leven Canal in February.

Of sea fishes an Angler Fish (*Lophius* spp.) was found in an advanced state of decay at Barmston on March 11th by H. O. Bunce and on July 6th a fairly large Basking Shark was brought in by a small fishing cobble at Whitby. It had been caught in a trawl net just off-shore (L. Carr).

ORNITHOLOGY

Interim Report (H. O. Bunce): The policy of sharing the work is responsible for a new editor for 1962. The unfortunate delay in publication may prove to be inevitable with part-time editors, but members could help by sending their records to the recorders in instalments through the year, with a final batch by January 15th. The new procedure for acceptance of rarity records is a lengthy business, and descriptions of rarities should be sent in as soon as possible after the event.

The severe weather in the early months was responsible for a dearth of birds in many inland areas, with Redwings suffering as usual. Following the two great

February storms, the second Ross's Gull for the county was seen at Bridlington at the same time as several dark and intermediate Fulmars. A 'wreck' of Fulmars noted then is being investigated for *British Birds* by John Cudworth and Brian Pashby.

In the late, still cold, spring the earlier summer visitors were delayed, although some of the normally later immigrants caught up with the calendar towards the end of April. Throughout May and into June Swifts and *Hirundines* gathered over many waters and sewage farms, and many species had a poor breeding season. Reports of small parties of Crossbills came from inland and coastal areas in late June and early July.

A disastrous breeding season in more northerly countries was suggested by the early appearance of unusual numbers of waders and ducks both on the coast and inland, whilst skuas—particularly pale phase Arctics—Kittiwakes and terns were very numerous close inshore. In August and September, Greenshanks, Spotted Redshanks and Wood Sandpipers were present in many localities in greater numbers than usual.

September passed without a really good 'drift', and the autumn migration period generally, like that of spring, was more favourable to birds than to watchers. Up to late October the great thrush falls on the coast of the past two years had not been matched.

Ralph Chislett reports that at Spurn after a great, weather-impelled rush of Fieldfares and Redwings on January 1st to 4th, when large numbers were ringed, things quietened down, and spring arrivals on average were on the late side for some species. A Desert Wheatear appeared on the Humber shore near Kilnsea on April 16th and stayed a few days. Large numbers of Linnets were ringed. Little Terns and Ringed Plovers again had a poor season. The rarer autumn passage migrants did not appear until late September. Redwings first appeared in numbers on October 4th and Fieldfares on the 11th. Upwards of 4,000 Kittiwakes and 300 skuas passed south at sea on the 26th. The appearance on October 21st on the sea coast near Warren Cottage of a Black-bellied Dipper, which alighted on a groyne and allowed good views, was a new feature for the observatory.

CONCHOLOGY

(Mrs. E. M. Morehouse): The Conchological Society of Great Britain and Ireland has inaugurated a new scheme for the recording of British non-marine mollusca. The system is based on the National Grid and is to run alongside that based on the Watsonian vice-counties. The Conchological Section has undertaken, with the Yorkshire Conchological Society, the task of recording for Yorkshire and other parts of Northern England; the records to be transferred to punched cards and geographical distribution maps by the Conchological Society.

Excursions during the season have been to Topcliffe, Ripon, Wiske, Knayton, Helmsley, Snilesworth, Mount Grace Priory, Wass, Horton-in-Ribblesdale, Colt Park Wood, Ripley and Fountains Abbey besides the Y.N.U. excursions accounts of which have already been published.

Lists have been compiled of species seen and the following are of interest: a magnificent specimen of *Clausilia dubia* ssp. *cravenensis* Taylor at Horton-in-Ribblesdale by Mr. Armitage; *Vallonia pulchella* (Mull.) at Fountains Abbey; *Limax tenellus* Mull. and *Lehmania marginatus* Mull. at Colt Park Wood; *Limnaea truncatula* (Mull.) in the old fish pond, now merely moist earth, at Mount Grace Priory and *Pupilla muscorum* (L.) on the walls at the Priory. A preliminary survey at Worston near Clitheroe yielded the commoner species, including *Succinea pfeifferi* Ross.

Mr. Thompson reports on Grange Moor pond where *Physa fontinalis* (L.), *Planorbis crista* (L.) and *Acroloxus lacustris* (L.) occur, and notes that another pond nearby is almost destroyed by open-cast working. At Selby he has found that crop-spraying has had little effect on snail populations in the drainage ditches, *Planorbis planorbis* (L.) and *Aplexa hypnorum* (L.) still flourishing. Wooded slopes in Coxley Valley where *Zonitoides excavatus* (Alder) occurred were destroyed by fire but colonies still exist in Bullcliffe and Bank Woods nearby. Mr. Thompson also commented on *Pyramidula rupestris* (Drap.) which he found on extremely dry and exposed rocks on Penhill at 1,752 ft. and Hanland Hill at 1,758 ft.

ENTOMOLOGY

Lepidoptera (S. M. Jackson): This is my first report as recorder for Lepidoptera and it has certainly been a poor year in which to start. We have been used to saying in recent years that it has been the worst year for so long, but for butterflies at least this has been the worst year in living memory in Yorkshire. Only the 'Whites' and perhaps the Small Copper and Small Heath have been present in anything like the usual numbers. The long dry winter must have been beneficial to hibernating larvae, but the summer was spoiled by cold winds and lack of sun. Nevertheless, some moths, notably *A. crenata* Hufn. (Clouded-bordered Brindle) and *A. lithoxylaea* Schiff. (Light Arches) were commoner than usual, while *A. putris* L. (Flame), usually scarce, was in good numbers. In my report I mention some common species only because of their scarcity in 1962. I should like to thank all contributors and particularly Mr. N. W. Harwood for his long list of records for North Yorkshire, which show how good this area is for some species.

Initials are those of the following: H. C. Beaumont, W. Beck, J. Briggs, W. E. Collinson, N. W. Harwood, C. R. Haxby, S. M. Jackson, R. L. Kitchen, R. S. Pollard, E. Richards, C. I. Rutherford and C. C. Smith. MV, mercury vapour light.

Dira megera L. (Wall). Much less common than usual, especially in the second brood which was late and not seen until September; one was seen as late as 6/10; S.M.J.

Agapetes galathea L. (Marbled White). (61) Cowlam, near Driffield; R.L.K. (62) Staxton Quarry, one; R.S.P.

Maniola jurtina L. (Meadow Brown). Much less common around Selby and later than usual (S.M.J.) but reported to be common in N. Yorks. (N.W.H.).

Coenonympha tullia Muell. (Large Heath). (62) Flask Inn, Whitby, fairly numerous; N.W.H.

Aphantopus hyperantus L. (Ringlet). Not especially sought and there is only a report of a single specimen near Scarborough; R.S.P.

Argynnis selene Schiff. (Small Pearl-bordered Fritillary). (61) Skipwith Common, in fair numbers, late June; S.M.J.

A. euphrosyne L. (Pearl-bordered Fritillary). (62) Wilton, one; N.W.H.

A. aglaia L. (Dark Green Fritillary). (62) Wilton, fairly numerous; N.W.H. Pickering, 18/8/62; Thornton Dale, 15/9/62; E.R.

Vanessa atalanta (L.) (Red Admiral). Only reported from Halifax; W.E.C

V. cardui L. (Painted Lady). Single examples near (62) Whitby (N.W.H.); Thornton Dale, 15/9/62 (E.R.); (64) Knaresborough, on Valerian, 1/7/62 (W.B.).

Aglais urticae (L.) (Small Tortoiseshell). Less common than usual in April, and although several batches of larvae were seen there were few butterflies in August and September, presumably owing to cold, sunless weather; S.M.J.

Nymphalis io L. (Peacock). Although this was the first butterfly I saw this year, 22/4, I never saw more than one or two hibernated specimens. No larvae were seen and only five or six butterflies later, between 1/9 (much later than usual) and 6/10; S.M.J. One in N. Yorks.; N.W.H.

Aricia agrestis Schiff. (Brown Argus). (62) Burdale, 21/7/62; Pickering, 18/8/62; E.R.

Polyommatus icarus von R. (Common Blue). Only two seen near Selby (S.M.J.), but common in a colony near Halifax (W.E.C.).

Callophrys rubi L. (Green Hairstreak). Widespread on N. Yorks. moors in May; N.W.H.

Euchloe cardamines L. (Orange Tip). There seemed to be a slight increase this year and I saw it in two localities near Selby and two localities near Wetherby.

Erynnis tages L. (Dingy Skipper). This is the first year when I have not seen this near Selby and I saw only one in 1961.

Thymelicus sylvestris Poda (Small Skipper). Scarcer than usual; one, Cornelian Bay, Scarborough, 12/8/62; S.M.J.

Augiades venata s. *septentrionalis* Ver. (Large Skipper). Scarcer than usual.

Macroglossum stellatarum L. (Hummingbird Hawk). (62) Cloughton, 7/62; R.S.P.

Drymonia dodonaea Schiff. (Marbled Brown). (62) Pickering, one at MV, 2/6/62; J.B. and C.R.H.

Chaonia ruficornis Hufn. (Lunar Marbled Brown). (62) Buttercrambe Wood, a single larva on oak trunk in early July; S.M.J.

Trichiura crataegi L. (Pale Oak Eggar). (64) Birkham Wood, Knaresborough at MV; C.I.R.

Eriogaster lanestris L. (Small Eggar). (62) Webs seen at Pickering, 17/6/62, and Thornton Dale, 7/8/62; E.R.

Lasiocampa quercus s. *callunae* Palmer (Northern Eggar). Larvae very common on N. Yorks. moors; N.W.H. Only a few seen on moors near Bingley; S.M.J. and J.B.

Macrothylacia rubi L. (Fox). Common on N. Yorks. moors, N.W.H., but only one or two seen at Skipwith in late June, S.M.J., and one female at Pickering, 9/6/62 J.B.

Philudoria potatoria L. (Drinker). (62) Wilton, commonly; N.W.H. This is pleasing as it seems to have been scarce in most parts of Yorkshire, including Selby, in recent years.

Saturnia pavonia L. (Emperor). Common on N. Yorks. moors (N.W.H.), but only one seen on moors near Bingley (S.M.J. and J.B.).

Diacrisia sannio L. (Clouded Buff). (62) Whitby, one male; N.W.H. Apparently scarce now in Yorkshire.

Drepana falcatoria L. (Pebble Hook-tip). (63) Kebroyd, Halifax, 29/8/62; W.E.C. Apparently a new record for the Halifax area; I have generally found this in most places where birch abounds.

D. binaria Hufn. (Oak Hook-tip). (61) Skipwith Common, several, 9/62; J.B. (64) Harrogate; C.I.R.

Colocasia coryli L. (Nut-tree Tussock). (62) Pickering, at MV 5/5/62; J.B.

Apatele tridens Schiff. (Dark Dagger). (64) A good emergence from eggs taken at Askham bog; E.R.

A. menyanthidis View. (Light Knot Grass). (62) Several reared from larvae from Commondale Moor; N.W.H.

Ammogrotis lucernea L. (Northern Rustic). (63) Two near Halifax; W.E.C.

Agrotis clavis Hufn. (Heart and Club). (61) Waterdale, several at MV, 5/7/62; E.R. Perhaps the best record for 1962. Apart from one I took at Kilnsea I know of no other authentic records for the past 20 years in Yorkshire.

Anaplectoides prasina Schiff. (Green Arches). (64) Harrogate; C.I.R.

Hadena suasa Schiff. (Dog's Tooth). (61) Skipwith Common, one at sugar, 22/6/62; E.R. (64) Selby, one at sugar, 30/6/62; S.M.J.

H. bombycina Hufn. (Glaucous Shears). (63) Halifax, six specimens; W.E.C.

Apamea epomidion Haw. (Clouded Brindle). (64) Selby, one at sugar in the garden; S.M.J. Although occurring in woods (Bishop Wood, Gateforth) this is the first record for the garden.

A. ophiogramma (Double Lobed). (64) Headingley, Leeds, at MV, 29/7-19/8 and 1/9/62; C.C.S.

Griposia aprilina L. (Merveille du Jour). Pupae under oaks, N. Yorks.; N.W.H. (64) Brayton, three at MV street lamp, 9/62; S.M.J.

Mormo maura L. (Old Lady). (62) Pickering, one, 28/7/62; J.B. and C.R.H.

Leucania obsoleta Hubn. (Obscure Wainscot). (61) Skipwith, two, 11/7, 14/7/62; at MV; E.R.

Stilbia anomala Haw. (Anomalous). (64) Dib Scar, Grassington, one seen, 18/8/62; S.M.J.

Atethmia xerampelina Esp. (Centre-barred Sallow). (64) Brayton, 10/9/62, one at light, the first I have seen for over ten years; S.M.J. York, 3/9/62; E.R. Harrogate; C.I.R.

Omphaloscelis lunosa Haw. (Lunar Underwing). (64) Brayton, two at street lights, late 9/62; S.M.J.

Tiliacea citrago L. (Orange Sallow). (63) Cawthorne, one, 15/9/62; H. Seago. York; E.R. (64) Harrogate; C.I.R.

Cucullia verbasci L. (Mullein). Thorp cuttings, larvae plentiful in early July but still very small when they should have been mature; S.M.J.

C. absinthii L. (Wormwood). (64) Headingley, two, 27/7 and 19/8/62; C.C.S.

C. umbratica L. (Shark). (62) Scarborough; R.S.P. (64) Barlow, one, 29/6/62, the first for many years; S.M.J.

Plusia bractea Schiff. (Gold Spangle). (62) Pickering, two at MV, 28/7/62; J.B.

Zanclognatha nemoralis F. (Small Fan-foot). (63) Halifax; W.E.C. (64) Headingley, at MV, 28/8/62; C.C.S.

Scopula ternata Schr. (Smoky Wave). (62) Lockwood Beck Moors, plentiful; N.W.H. Very local in Yorks.

Trichopteryx polycommata Schiff. (Barred Tooth-striped). (64) Grassington, one; C.I.R.

Lamprotettix suffumata ab. *piceata* Steph. (Water Carpet). (62) Pickering, at least eight at MV, 5/5/62; J.B.

Venusia cambrica Curtis (Welsh Wave). (63) Causewayfoot, Halifax, one female, 7/62; J.B.

Entephria flavicinctata Hubn. (Yellow-ringed Carpet). (64) Dib Scar, Grassington, three taken in quite good condition and at least one other seen, 18/8/62 (a late date); a worn one, 5/8/62; S.M.J.

Perizoma taeniata Stephn. (Barred Carpet). (64) Grassington, one, 18/8/62; S.M.J.

Discoloxia blomeri Curt. (Blomer's Rivulet). (62) Forge Valley, two on beech trunk, 30/6/62; C.I.R.

Eupithecia extensaria s. *occidua* Prout (Scarce Pug). (61) Spurn, larvae in August and September; E.R., C.I.R.

E. tripunctaria H.S. (White-spotted Pug). (64) Barlow, a few, 7/62; S.M.J.

E. succenturiata L. (Bordered Pug). (63) Little Horton, Bradford, one at MV, 29/7/62; J.B.

E. valerianata Hubm. (Valerian Pug). (64) Grassington, one bred from larva taken 8/61 (em. 10/4/62); one larva, 5/8/62; S.M.J.

E. innotata Hufn. (Angle-barred Pug). (61) Kilnsea Warren, four larvae from Sea Buckthorn, 8/9/62; S.M.J.

E. sobrinata Hubn. (Juniper Pug). (64) Headingley, 19/8, 30/8/62; C.C.S.

Chloroclystis coronata Hubn. (V-Pug). (64) Headingley, C.C.S.

Abraxas sylvata Scop. (Clouded Magpie). (62) Wilton Woods, plentiful; N.W.H. (64) Fairly common in wood near Sherburn-in-Elmet; S.M.J.

A. grossulariata ab. *varleyata* Porritt (Magpie). (63) Little Horton, Bradford, two females on gooseberry; J.B.

Anagoga pulveraria L. (Barred Umber). (62) Pickering, four at MV 2/6/62; J.B. and C.R.H. (64) Birkham Wood, Knaresborough; C.I.R. This now seems very local in Yorkshire.

Selena lunaria Schiff. (Lunar Thorn). (62) Chalen, plentiful at light; N.W.H.

Gnophos obscurata Schiff. (Annulet). (62) Pickering, one at MV, 28/7/62; J.B. and C.R.H.

Perconia strigillaria Hubn. (Grass Wave). Common on moors in N. Yorks., 7/62; N.W.H. Very local in the county.

Procris statices L. (Forester). (62) Eston Hills, five specimens; N.W.H. (64) Selby Golf Course, 7/62, one; S.M.J.

Zeuzera pyrina L. (Leopard). (63) West Melton, Rotherham, one; H.C.B.

Aegeria culiciformis L. (Large Red-belted Clearwing). (64) Bishop Wood, three, freshly emerged, 3/6/62; S.M.J.

Scoparia dubitalis (Hueb.) (64) Wetherby, 16/6/62; S.M.J. (det. S. Wakely).

Stenoptilia bipunctidactyla (Scop.) (64) Wetherby, 12/6/62; S.M.J. (det. S.W.).

Marasmarcha lunaedactyla (Haw.) (62) Scarborough, 12/8/62; S.M.J. (det. S.W.).

Tinaea semifulvella Haw. Near Selby, 30/6/62; S.M.J. (det. S.W.).

Hymenoptera (Mrs. H. E. Flint): The season speeded up after a late start. This year the first examples of *Bombus* and *Andrena*, our earliest bees to appear, were not seen until April 8th during a spell of warm sunshine in a quarry near Boston Spa. The first sawflies were seen on April 22nd when on a sunny afternoon with excellent flight conditions there were numbers of black *Dolerus* spp. flying at Alwoodley, Leeds. This is about a month later than in 1961, but there was still very little fresh growth of vegetation for the larvae. However, on April 23rd, after the Easter sunshine, *Zaraea lonicerae* was taken, flight conditions again being excellent, a fortnight earlier than the 1959 capture at Lindley Wood. Many collecting trips have been made this year but few in good collecting weather. Despite this, the year has provided some very interesting captures and much material still remains to be named.

Only sawflies in this order have been worked during the year and the list below is of species taken by the recorder unless otherwise stated. There has been no list of additions published since the report of 1959, so the report covers the work of the last three years and includes three county and eleven vice-county records. So far the manuscript notebook on Yorkshire Hymenoptera kept by Dr. Hincks has not been discovered, so the notes below are based on the Fordham records which have now been brought up to date by the addition of the published records in *The Naturalist*.

I am grateful to my husband for collecting many of the insects and for checking some of the determinations, and to Mr. E. W. Aubrook for letting me see the specimens he collected this year, most of which are still to name at present.

**Xyela julii* Breb. (64) Ripley, a single specimen by sweeping in Holly Bank Wood, 13/5/62. Only previously reported from Forge Valley.

Pamphilius balteatus (Fallén) (64) Etchell Crags, Thorner, 8/5/1.

P. hortorum hortorum (Klug) (64) Birkham Wood, Knaresborough, 22/5/60.

**Xiphydria camelus* (L.) (63) Newmillerdam, one example, and many exit holes on old alders, 7/60. Only previously reported from Askham Bog.

†*Janus femoratus* Curtis (64) Lindley Wood, 23/5/59. Benson gives this as occurring south-east of the Wash-Severn line.

**Arge ciliaris* (L.) (63) Thorne Moor, 3/6/62. Only previously reported from Askham Bog.

**A. gracilicornis* (Klug) (62) Dalby Forest, 17/8/62; E. W. Aubrook. Only three previous Yorkshire records.

Zaraea lonicerae (L.) (64) Leathley, one male, 10/5/59; Etchell Crags, one female, 23/4/62.

Stromboceros delicatulus (Fallén) (*63) Calverley, 24/5/59. (64) Leathley, 10/5/59; Adel Dam, 27/5/60; Wigton, Leeds, 27/5/60; Bolton Abbey, 26/5/62. Stated to be a common species, it seems rather sporadic and was not seen at all in 1961.

Dolerus bimaculatus (Geoff.) (64) Breary Marsh, Leeds, 23/6/58.

**D. ferrugatus* Lep. (64) Austhorpe, Leeds, 4/5/59; Wigton, Leeds, 21/6/60.

D. triplicatus (Klug) (64) Etchell Crags, 5/6/60.

**Apethymus braccatus* (Gmel) (64) Lindley Wood, 30/8/59. Only previously from Forge Valley.

†*Eutomostethus punctatus* (Konow) (64) Breary Marsh, by sweeping in the vicinity of *Carex paniculata*, 23/6/58.

Rhadinoceraea micans (Klug) (*63) Thorne Moor, abundantly, 3/6/62. (64) Scarcroft Pond, abundantly, 9/5/60. On *Iris pseudacorus*. Only previously reported from Askham Bog.

Tenthredopsis coquebertii (Klug) (64) Farnham Mires, 7/58.

Rhogogaster chambersi Benson (64) Heselden Beck, Littondale, 18/6/61. Only previously reported from Malham (in press).

**R. chlorosoma* (Benson) (64) Grantley, Ripon, 23/5/59; J. H. Flint. Supposedly common, but only one previous record, Keighley.

Tenthredo scrophulariae L. (63) Newmillerdam, 7/60. (64) Banks of Wharfe, Arthington, 19/6/60. On *Scrophularia*.

T. acerrima Benson (61) Leavening, 7/58. (62) Cayton Bay, 8/58. (64) Farnham Mires, 7/58.

Macrophya albipuncta (Fallén) (64) Banks of Wharfe, Arthington, 6/58. Local and scarce, the only other English records appear to be Grassington, Malham and Upper Teesdale.

M. annulata (Geoff.) (64) Wothersome, 6/6/60.

M. duodecim-punctata (L.) (64) Grass Wood, 12/6/60. Only previously reported from Forge Valley and Malham.

**Priophorus brullei* Dahl. (62) Cayton Bay, 16/8/61.

†*Pristiphora crassicornis* (Hartig) (62) Cayton Bay, 15/8/62.

Nematus leucotrochus Hartig (64) Wothersome, 23/4/62, a swarm around gooseberry bushes in a wood, 23/4/62. Throughout Britain but seldom common.

**Pachynematus apicalis* (Hartig) (64) Hampsthwaite, 13/5/62. The only previous record is Bempton (Victoria County History).

Hemiptera (J. H. Flint): Work on the Hemiptera has been restricted by the generally poor weather of the summer and collecting expeditions have been unprofitable. There is, in consequence, little to report and so little satisfactory field work has been done that I do not feel justified in making any general comment. Two additions to the county list and five to the vice-counties have been made.

Only two reports have been received in response to an appeal for records of the conspicuous black and red hopper, *Cercopis vulnerata* Illig., and these new localities, together with a record of mine, lie within the general area from which this insect has previously been reported. This area is enclosed roughly within a line drawn from Doncaster through Selby, Bolton Percy, Knaresborough, Pontefract, Huddersfield to Sheffield. It seems remarkable that there are no records from V.C. 61 since it is hard to overlook this striking insect.

Except where stated, the records below have been made by me and I must express my thanks to the other contributors.

HETEROPTERA

Acalypta parvula (Fall.) (62) Troutsdale, about a dozen ex. from moss, 29/10/62; E. W. Aubrook.

†*Temnostethus gracilis* Horvath (62) Helmsley, 2/10/62; E. W. Aubrook. The first specimen of this bug seen since its separation from *pusillus* (H.-S.). As this appears to be the common species, many previous Yorkshire records of *pusillus* may refer to *gracilis*.

Orius majusculus Reut. (62) Snainton, 11/6/62; E. W. Aubrook. (*64) Golden Acre, Leeds, 6/6/59.

**Psallus salicellus* (H.-S.) (64) Adel Moor, Leeds, 8/9/62.

**Globiceps flavomaculatus* (F.) (62) Harwood Dale, in wet base of old straw stack, 1/9/62; E. W. Aubrook.

**Pantilius tunicatus* (F.) (64) Etchell Crags, Bardsey, nymphs on alder and hazel, 23/9/62. Meanwood, Leeds, nymphs on alder, 24/9/62. There are few records of this bug in Yorkshire, possibly because it has such a short adult life, late September and October only.

HOMOPTERA

Cercopis vulnerata Illig. (63) Thorne Moor, abundantly, 3/6/62 J.H.F. Brampton, in fair numbers in the churchyard during the second and third weeks in June but could not be found in other apparently suitable localities nearby; H. E. Beaumont. (64) Colton, near Tadcaster, in garden and on road verge, 6/62; Mrs. J. Payne.

†*Megophthalmus scabripennis* Edw. (62) Cornelian Bay, Scarborough, under *Lotus corniculatus* on cliffs, 8/62.

Idiocerus distinguendus Kirsch. (64) Harewood Park, on *Populus alba*, 30/9/62. Apparently much less frequent than *I. tremulae* Est., with which it was found, and much less numerous here.

**Typhlocyba carri* Edw. (64) Shadwell, Leeds, 10/9/62. Adel Moor, Leeds, 16/9/62, on oak.

Dikraneura similis Edw. (64) Etchell Crags, Bardsey, in marshy pasture, 23/9/62.

Aphalara polygoni Forst. (=*calthae* auct.) (64) Meanwood, Leeds, by sweeping *Polygonum aviculare*, 2/9/62. Also odd specimens at many places around Leeds in October. Records for *A. calthae* L. in Yorkshire probably are all of this species.

Coleoptera (E. W. Aubrook): The season has been notable for the prevalence of cold winds which have tended to keep the insects well down in the herbage. When, however, conditions have been sufficiently congenial to permit sweeping, the effort has not been without reward. Other methods of collecting, such as litter searching, have been as productive as usual.

Perhaps the most outstanding capture amongst the Coleoptera was *Dromius sigma* (Ross.), discovered at Thorne Moor for the first time by Peter W. H. Flint, a notable capture by a young collector.

Also noteworthy is *Macroplea appendiculata* (Panz.) found in a cocoon by the River Derwent, in November, 1960, and previously only known in the county from the River Wharfe and Malham Tarn. It is likely that the species is well established in the gravel areas of the Derwent between Sherburn Bridge and Foulbridge.

Records have been received from Mr. J. H. Flint and Peter W. H. Flint, in addition to those of the writer, and are respectively indicated by the appropriate initials. Two additions to the county and ten to the vice-counties are recorded.

**Dromius sigma* (Ross.) (63) Thorne Moor, 3/6/62, one specimen; P.W.H.F. This fenland relict species is well known at Askham Bog where it was rediscovered in 1945 after a lapse of over 100 years, and it may be equally at home at Thorne.

Ochthebius dilatatus (Steph.) (64) Wothersome, near Thorner, in flight near lake, 23/4/62; J.H.F.

Coelostoma orbiculare (F.) (62) Snainton Mere, 7/6/60; E.W.A.

Agathidium nigripenne (F.) (63) River Calder, Kirklees, 3/6/62; E.W.A.

A. laevigatum (Er.) (62) Foulbridge, 16/9/62, in litter; E.W.A.

A. varians Beck (64) Adel Dam, Leeds, in grass tufts, 11/3/62; J.H.F.

†*Neuraphes minutus* (Chaud.) (62) Sherburn Bridge, near Brompton, 3/8/62; E.W.A.

Ptinella denticollis (Fair.) (63) Elland, 16/3/61; E.W.A.

P. aptera (Gr.-M.) (63) Smith Wood, Farnley Tyas, 4/9/62; E.W.A.

Metopsia gallica (Koch) (64) Scarcroft, Leeds, in grass tufts, 29/10/61; J.H.F.

**Proteinus atomarius* (Er.) (63) Smith Wood, Farnley Tyas, 5/6/62; E.W.A.
**Euplectus signatus* (Reich.) (63) Smith Wood, Farnley Tyas, 4/9/62; E.W.A.
Brachygluta fossulata (Reich.) (62) Strensall, 12/6/60; E.W.A.
Byturus ochraceus (Scrib.) (62) Brompton Beck, 13/6/62; E.W.A.
Epuraea melanocephala (Marsh.) (63) Mollicar Wood, Huddersfield, 3/6/61; E.W.A. *(64) Temple Newsam, Leeds, 20/5/62; J.H.F.
Enicmus fungicola (Thoms.) (61) Skipwith, 23/6/60; (63) Cawthorn, 8/5/48; E.W.A.
Corticaria impressa (Ol.) (62) Topcliffe, 15/6/60; (64) Askham Bog, 1/5/60; E.W.A.
Pseudotriphyllus suturalis (F.) (62) Helmsley, 2/10/62; E.W.A.
Subcoccinella 24-punctata (L.) (62) Foulbridge, numerous, 1962; E.W.A.
**Cis nitidus* (F.) (62) Helmsley, 4/9/60; (64) Askham Bog, 27/7/46; E.W.A.
Hedobia imperialis (L.) (62) Yedingham, 11/6/62; E.W.A.
Stegobium paniceum (L.) (63) Huddersfield, frequent; E.W.A. One previous record for V.C. 63 (Bradford, 1905).
†*Dorcatoma chrysomelina* (Sturm.) (63) Cawthorne, bred from powdery fungus, June, 1947; E.W.A.
**Metoecus paradoxus* (L.) (61) By Scorbrough Beck, Leconfield, frequent 1954-60; P. L. Gravett.
**Aphodius sordidus* (F.) (63) Dalton, Huddersfield, at light, 20/8/46; E.W.A.
Serica brunnea (L.) (62) Cayton Bay, 14/8/62; Staxton, 16/8/62; P.W.H.F.
**Macroplea appendiculata* (Panz.) (62) Yedingham, River Derwent, adult in cocoon in flood refuse, 13/11/60; E.W.A.
Lochmaea crataegi (Forst.) (63) Lindrick Common, 24/5/62; J.H.F.
**Psylliodes cuprea* (Koch.) (63) Dalton, Huddersfield, 18/3/48; E.W.A.
Attelabus nitens (Scop.) (63) Thorne Moor, 3/6/62; P.W.H.F.
Polydrusus tereticollis (Deg.) (63) Storthes Hall, 5/6/62; E.W.A.
Sciaphilus asperatus (Bons.) (64) Saw Wood, Thorner, 8/10/61; J.H.F.
Brachysomus echinatus (Bons.) (64) Birkham Wood, Knaresborough, 7/5/61; J.H.F.
Dorytomus dejeani (Faust.) (64) Golden Acre, Leeds, 24/4/62; J.H.F.
D. rufatus (Bedel.) (64) Wyke, near Leeds, 13/10/61; J.H.F.
**Anisandrus saxeseni* (Ratz.) (61) Skipwith, 23/6/60; E.W.A.

BOTANY

(Miss D. R. Walker): Although the winter of 1961-62 brought very little snow, there was much frost and persistent strong winds. The February hurricanes caused very severe and extensive damage to woodland and hedgerow timber. The coldest March for over forty years was followed by continued cold weather which delayed the onset of spring and all reports agree that plants were four to six weeks late in flowering until well on in the year. Although *Ranunculus lenormandi* is recorded as flowering at an altitude of 1,000 ft. on January 28th and *Tussilago farfara* on February 10th at Kirkburton, *Petasites albus*, which was seen in bud a few days later, was no further advanced on March 11th.

In the East Riding primroses and violets were fully a month later than the 1961 flowering dates in the same localities. Fly and Green Winged Orchids were about a fortnight late, but with the advent of warmer weather flowering speeded up and by the end of June was almost normal. The severe frost of May 31st seriously damaged what on May 26th had been a magnificent bed of *Menyanthes trifoliata*. In the West and North Ridings flowering continued to be two or three weeks late with very many plants, though as the season progressed others flowered normally. Heather has been very poor, but in the Huddersfield area cranberry is reported as flowering better than usual and in some of the moorland cloughs marsh violets were profuse.

The strong winds which have occurred at such frequent intervals throughout the spring and summer have torn and seared hedges, trees and even herbaceous plants. Wind effects in some places were quite spectacular. Trees in the main street of Topcliffe village were almost bare of leaves in the upper part where the full blast had caught them, whilst lower branches, sheltered by the houses, were unharmed. Near Easingwold a field of potatoes was cut off at ground level by blown sand in one of the July gales and similar reports have come from other parts of the North Riding. Although the foliage of most trees has suffered more or less severe damage by the high winds, Sycamores in many places have produced an excellent crop of fruits, as have Ash and Oak. Wild Roses have been particularly good this year and have

been followed by a profusion of hips. Brambles were very late, the fruits being still mostly green in late September.

Plant Records (C. M. Rob): The late season, the strong winds that reached gale force on many occasions and the lack of sunshine have not encouraged field work, but the records which have been submitted are of considerable interest and a larger number than usual appear below.

The publication, in the early months of the summer, of the *Atlas of the British Flora* has eased the task of the Recorder as it is now a simple matter to check the known and recorded distribution of most plants in Yorkshire. Although there has not been time to get a full picture of the flora of the five vice-counties, it is already obvious that there is still a lot of work for the Flowering Plant Section to do.

So far only thirteen species are recorded from every 10 km. grid square in the county; two trees, Ash and Hawthorn, six Compositae, including Daisy and Groundsel, and both Ribwort and Greater Plantain. About eight species are missing from a single square, and it is certain that they are all there for the finding, while about the same number are absent from two or three squares. It will be interesting to see how many more species are recorded from all 186 grid squares in Yorkshire. Of these 186 squares, two have between 550 and 650 species recorded so far; these are the Ripon-Catton square and one at Bawtry which is partly in Yorkshire and partly in Nottinghamshire. Many of the records which appear below are of plants new to a particular 10 Km. square, others such as *Hypericum montanum* at Grass Woods and *Silaum silaus* near Semerwater are given as pre-1930 in the *Atlas*.

The best find of the year, and the only new vice-county record is for the Orchid *Epipactis phyllanthes* G. E. Sm., which has been found by Mr. M. Densley on the magnesian limestone in vice-county 64. A separate account of this important addition to the flora of West Yorkshire will appear in *The Naturalist* in the near future. (See page 29).

Miss Norman reports that the increased working of some of the lime quarries in the Tadcaster district has had a marked effect on the flora. Deadly Nightshade (*Atropa belladonna* L.) is almost extinct in Jackdaw Quarry, although fairly abundant in other quarries in the area. She also records *Apera interrupta* (L.) Beauv. from Staxton, V.C. 61. This is a new locality for the plant which has been known from the nearby Flixton Sandpit for over forty years. Mrs. Houseman has a long and interesting list of alien plants from the Otley, Bradford and Huddersfield areas. In addition she has started to work on the roses and has sent in the first records of this genus that we have had for a number of years. Mrs. Holloway sends a record of the Limestone Polypody (*Thelypteris robertiana* (Hoffm.) Slosson), from Forcett Quarry, between Richmond and Winston-on-Tees where it was found by Mr. Milburn of Richmond. Mrs. Holloway herself found it in the Whinstone quarry near Middleton-in-Teesdale; both are new localities for the fern. Wall Whitlow-grass, a rare plant in V.C. 65, is still plentiful on the small area of wall near Hartforth, where it has been known for about twenty years. There was a distinct decrease in the number of plants in both 1960 and 1961, but this year there were more than for several years, although the plant has not extended its range, being confined to a very small area of road-side wall. Small Wintergreen (*Pyrola minor* L.) has been known in the Harlow Carr pinewoods for some years. A new station in the woods almost in the town of Harrogate is an interesting and welcome extension of the plant's range in this district. Elsewhere in the county, tree felling and other changes in land use have destroyed some of its stations. *Orobanche reticulata* Wallr. has been better than usual at the Ripon locality, in spite of the recent ploughing of a considerable amount of the ground where it occurs. The lesser Broomrape (*O. minor* Sm.) has turned up on the newly-made grass verge of the A.I. about two miles north of the Sinderby flyover. Grass verges there have produced fine crops of mushrooms and the Broomrape was found by Mr. Beaumont on a fungus foray. The whole stand, about six spikes, was mown down a few days later.

Melancholy Thistle (*Cirsium heterophyllum* (L.) Hill) is abundant in all the upper dales, but it is a rare plant in the lower reaches of all the rivers and the discovery of several plants by the Ure below Tanfield Mill (a district fished and botanised by your recorder for many years) was unexpected. The plants were all growing below the winter flood-line and will no doubt have been washed down from the upper Dale.

Mr. Seaward sent in specimens of *Juncus maritimus* Lam. from a small area in the Bran Sand marsh at Teesmouth. Unfortunately, this area is being used as a refuse tip by Eston R.D.C. and the future of the Rush is very uncertain.

Spring Figwort (*Scrophularia vernalis* L.) is erratic in its appearances; only in the Burril locality near Bedale, where it has come up every year for at least thirty years, is there any continuity. This year a single spike was noted by the roadside at Middleton Tyas (where it was last seen in 1938) by Mrs. Holloway and C.M.R. on the same day, at different times. Unfortunately the plant was destroyed the following day. Perhaps this is what has happened in past years, and the plant may not be quite as erratic as it has appeared to be.

I should like to thank all who have sent in records, and ask that they will do the same next year. By next summer we should, with the *Atlas*, have had time to work out what has been missed and what we have to look out for, and I feel sure more species of flowering plant will be added to those already figured in Yorkshire in the *Atlas*. Much remains to be done in completing the detailed distribution of many species in Yorkshire. Many are certain to be present in areas where as yet they are unrecorded and I feel sure that other unexpected species await discovery comparable with the finding last year of *Corallorhiza* in two localities in West Yorkshire and Mr. Densley's discovery this summer of the rare Helleborine, *Epipactis phyllanthes*, in the West Riding.

Key to Contributors.—Miss E. Crackles, Mrs. J. E. Duncan, the Rev. P. M. Garnett, D. R. Grant and T. Schofield, Miss R. Hemming, Mrs. F. Houseman, Mrs. J. Holloway, F. Murgatroyd, Miss M. M. Norman, C. M. Rob, the Rev. C. E. Shaw, and E. Thompson.

Plant Records

Phyllitis scolopendrium (L.) Newm. (63) Hinchcliffe Mill, Holme, Huddersfield; F.M.

Dryopteris borreri Newm. (64) Cow Close, Ilkley Moor; J.E.D.

Thelypteris robertiana (Hoffm.) Slosson (65) Forcett Quarry and quarry near the railway, Middleton-in-Teesdale; J.H.

Berberis vulgaris L. (64) Roadside near Spofforth; D.R.G. and T.S.

Papaver lecoqii Lamotte. (64) Waste ground, Boston Spa, 1961; Miss R. Kilby. By river bank, Boston Spa, 1962; Dr. Nelson. Near Cross Streets Inn, Austwick, 1962; J. Anderson. (65) Richmond; C.M.R.

Corydalis claviculata (L.) DC. (64) Langbar; J.E.D. Copra Bank, West End, Washburn Valley; F.H.

Rorippa microphylla (Boenn.) Hyland (62) Keld Head, Pickering; R. H.

Alliaria petiolata (Bieb.) Cavara & Grande. (63) Brookfoot, Halifax; F.M.

Viola palustris L. (61) Houghton Woods; E.C.

Hypericum maculatum Crantz (63) Roadside bank near Saddleworth; C.E.S.

H. montanum L. (64) Grass Woods; Miss H. Lefevre.

Sagina maritima Don (62) Saltburn; C.M.R.

Arenaria serpyllifolia L. (63) On lime rubble near Brookfoot, Halifax; F.M. Not seen in the Halifax district for more than sixty years.

Geranium phaeum L. (62) Plentiful in the church yard, Old Byland; Miss M. Dickenson.

Impatiens parviflora DC. (63) Near Fixby Hall Golf House, Fixby Park, Halifax; F.M.

Ononis repens L. (63) Saddleworth Station; C.E.S.

Lathyrus montanus Bernh. (61) Little Wood, North Newbald; E.C.

Fragaria vesca L. (63) Upper Shibden Valley, Halifax; F.M.

Rosa sherardii Davies. f. *resinoides* (Crep.) W.-Dod. (Det. R. Melville). (64) Otley; F.H.

R. sherardii Davies = *R. afzeliana* Fr. *sensu* W.-Dod (Det. R. Melville) (64) Lofthouse-in-Nidderdale; F.H.

Ribes spicatum Robson (64) Bolton Abbey; R. Collins. (65) Riverside, Billy Bank Wood, Richmond; C.M.R.

Pimpinella major L. (63) Roadside near Cawthorne; P.M.G.

Silaum silaus (L.) Schinz & Thell. (65) Semerwater; J.H.

Polygonum minus Huds. (65) Near Hauxwell; C.M.R.

Salix repens L. (63) Greenfield; C.E.S.

Pyrola minor L. (64) Pinewoods, Harrogate; Miss D. Walker.

Symphytum tuberosum L. (65) Roadside, North Ellerton; J.H.

Scrophularia umbrosa Dumort. (62) Rievaulx, 1953; R. Collins.

S. vernalis L. (65) Roadside near Middleton Tyas; C.M.R. & J.H.

Mimulus moschatus L. (63) Marsden Clough; P.M.G. (64) Near Stean Village, Nidderdale; Y.N.U. Bot. Sect. Meeting.
Veronica catenata Pennell (61) Holme-upon-Spalding Moor; E.C.
V. anagallis-aquatica L. (61) Holme-upon-Spalding Moor; E.C.
Orobanche minor Sm. (65) Grass verge of Great North Road near Healam Bridge about two miles north of Sinderby flyover; G. Beaumont.
Galeopsis speciosa Mill. (64) Rawdon; D.R.G. and T.S.
Nepeta cataria L. (64) Roadside between Spofforth and Ribston; D.R.G. and T.S.
Mentha × *gentilis* L. (Det. R. Harley). (63) Bingley; F.H.
Littorella uniflora (L.) Aschers. (62) Lockwood Beck Reservoir; D. Seaward.
Wahlenbergia hederacea (L.) Reichb. (63) Marsden Clough, near Holme, Huddersfield, 1961; Miss J. Robinson. Wessenden Valley, above Marsden, 1944; R. S. R. Fitter.
Asperula cynanchica L. (64) Ledston Hall; P.M.G.
Valeriana dioica L. (63) Cook's Study, near Holme, Huddersfield, 1961; Miss J. Robinson.
Artemesia absinthium L. (63) New Monckton Colliery; P.M.G.
Cirsium heterophyllum (L.) Hill (65) Riverside near Tanfield Mill; C.M.R.
Juncus compressus Jacq. (64) Wharfe Wood, Austwick; J. N. Frankland.
Luzula pilosa (L.) Willd. (61) Little wood near North Newbald; E.C.
Epipactis phyllanthes G.E.Sm. (64) On the Magnesian Limestone near Aberford; M. Densley. New to West Yorkshire.
Dactylorchis fuchsii (Druce) Vermeul. × *D. incarnata* (L.) Vermeul. (61) Allerthorpe Common; E.C.
D. incarnata (L.) Vermeul. × *D. maculata* (L.) Vermeul. (61) Allerthorpe Common; E.C.
D. praetermissa (Druce) Vermeul. (61) Kelsey Hill Gravel Pits, Keyingham; E.C.
D. purpurella (T. & T. A. Stephenson) Vermeul. (61) Near Snake Hall, Hotham; F. Bower.
Typha angustifolia L. (61) Holme-upon-Spalding Moor: E.C.
Scirpus maritimus L. (62) Layerthorpe Brick Pits, Foss Islands, York; A. Wegener.
Eleocharis acicularis (L.) Roem. & Shultz (63) Disused canal side, Notton; C.M.R.
Carex laevigata Sm. (63) About Denby Dale and Langsett Moors; E.T.
C. pallescens L. (64) Ramsgill; E.T. Near Stean village, Nidderdale; Y.N.U. Bot. Sect. Meeting.
C. paniculata L. (64) Langbar; J.E.D.
C. polyphylla Kar. & Kir. (65) Easby, near Richmond; C.M.R.
C. extensa Gooden. (61) By edge of canal, Spurn Point; E.C.
Poa compressa L. (63) Slaithwaite; F.M. By roadside Brighouse; C.E.S.
Alopecurus aequalis Sobol. (63) By disused canal, Notton, near Wakefield; C.M.R.
Apera interrupta (L.) Beauv. (61) Sand pit, Staxton; M.M.N.

ALIENS AND CASUALS (Mrs. F. Houseman and C. M. Rob)

All the twenty-five members who have helped to produce this list are agreed that it has been a poor year for alien plants; yet some good work has been done and the number of records submitted is higher than usual. Only about a quarter appear below, these being mainly plants new to a vice-county or, if the species is one that has been mapped in the new *Atlas*, new to the 10 km. square, and established aliens which are competing with native vegetation and look like becoming permanent residents in the locality. The records of *Polygonum cuspidatum* in the *Atlas* are very incomplete, the plant is well established in many places and should be recorded next season. Oxford Ragwort *Senecio squalidus* is another under-recorded species, occurring in many places quite remote from any railway; *Cardaria draba* is spreading north and will no doubt become more common as time goes on, judging by its spread in the southern half of Britain, while the pink flowered Bindweed *Calystegia pulchra* has turned up in four new localities. The nursery garden at Carthorpe has been derelict for over fifty years but *Achillea grandiflora* has persisted there and seems likely to remain unless the hedge is removed. The record for *Luzula luzuloides* near Bleamoor tunnel is almost on the vice-county boundary, but according to the *Comital Flora* is just in 64. This is the locality given in the *Atlas*; Mr. Shaw's discovery of the plant at Mossdale Head is a new record for V.C. 65.

Your Recorder of alien plants thanks all who have helped in the past year and hopes for even more records in 1963.

Papaver lateritium C. Koch (62) Grassy hillside, Saltburn; Y.N.U. Excursion. (65) Waste ground near houses, Richmond; C. M. Rob and J. Holloway.
Corydalis solida (L.) Sw. (64) Wood near Boston Spa; Miss R. Kilby.
Eruca sativa Mill. (62) Great Ayton, a possible birdseed introduction; I. C. Lawrence.
Rapistrum rugosum (L.) All. (62) Wheatfield between Tollerton and Shipton; A. Wegener.
Cardaria draba (L.) Desv. (62) Layerthorpe brickponds, York; A. Wegener. (63) Doncaster; D. Grant and T. Schofield. (64) Ben Rhydding and Addingham Station; Mrs. F. Draper. (65) Roadside, Scotton, Catterick Camp; C. M. Rob and Miss M. Dickenson.
Atriplex hortensis L. (63) Waste ground, Keighley; F. Houseman.
Ononis salzmanniana Bois. & Reut. (62) Garden at High Kilburn where birdseed had been thrown out; Mrs. J. Galley, per C. M. Rob.
Vicia lutea L. (63) Barnsdale; Mrs. M. Pyrah.
Lathyrus hirsutus L. (63) Barnsdale; Mrs. M. Pyrah.
Potentilla recta L. (64) Bolton-by-Bowland; J. N. Frankland.
Sedum spurium Bieb. (65) Old wall about half-mile north of East Hauxwell village; C. M. Rob.
Peltiphyllum peltatum (Torrey) Engler (62) Established in the grounds of Poole Sanatorium, Nunthorpe, Middlesbrough; I. C. Lawrence and F. Houseman. (65) River shingle, Kirby Fleetham; Mrs. K. Horne.
Epilobium nerterioides Cunn. (64) Force Gill; F. Murgatroyd.
Caucalis platycarpus L. (62) Topcliffe Station; C. M. Rob.
Heracleum mantegazzianum Somm. & Levier (62) Clifton, York; A. Wegener. (64) Monk Fryston; E. Thompson.
Polygonum cuspidatum Sieb. & Zucc. (63) Kirkheaton, Huddersfield; Miss R. Hemming. (64) Roadside, Buckden in Wharfedale; C. M. Rob.
Fagopyrum esculentum Moench. (64) Ledstone Park in rough, shrubby ground; Rev. P. M. Garnett.
Rumex dentatus Rech. (63) Halifax; F. Murgatroyd.
R. palustris Sm. (63) Halifax; F. Murgatroyd.
R. pulcher L. (63) Halifax; Miss M. McCallum Webster, per F. Houseman.
Linaria repens (L.) Mill. (61) Sandpit, Staxton; M.M.N. (63) Near Rotherham; F. Newton.
Calystegia pulchra Brummitt (62) Eversley, Forge Valley; C. M. Rob. (64) Clapham; F. Houseman. (65) Newby Wiske; C. M. Rob. Pickhill; G. Beaumont.
Mentha longifolia (L.) Huds. var. *horridula* (Det. R. Harley) (63) Bingley; F. Houseman.
Petasites fragrans (Vill.) C. Presl (63) Lofthouse, near Wakefield; D. R. Grant.
P. japonicus (Sieb. & Zucc.) F. Schmitt (64) Clapham Woods; Mr. and Mrs. Illingworth.
Senecio fuchsii C. C. Gmelin (64) Established and spreading near Bolton-by-Bowland; J. N. Frankland.
S. squalidus L. (63) By river, Keighley; F. Houseman.
Achillea grandiflora Friv. (65) Hedge near old Nursery Gardens, Carthorpe and Jervaulx Abbey grounds; C. M. Rob.
Cicerbita macrophylla (Willd.) Wallr. (63) Near canal, Rodley; D. R. Grant and T. Schofield. Bingley; J. Anderson. (64) Three places in and near Clapham; F. Houseman. Roadside near Pool Bank; M. M. Norman and B. Mortimer.
Luzula luzuloides Dandy & Willmott (64) Aqueduct over railway a little south of Bleamoor Tunnel, Dentdale; J. C. Gardiner, 1959. (65) Railway embankment, Mossdale Head; G. A. Shaw.
Bromus arvensis L. (64) Baildon; F. Houseman.
Hordeum jubatum L. (62) Disused railway siding, Topcliffe Station; C. M. Rob.
Agropogon littoralis (Sm.) C. E. Hubbard (*Agrostis stolonifera* × *Polypogon monspeliensis*) (63) Halifax, in field where shoddy manure had been used; F. Houseman.

Bryology (G. A. Shaw): The usual two meetings of the Bryological Section have been held during the year, the first in April at Newthorpe and Huddleston quarries, and the second in September on Ilkley Moor.

Three species new to Yorkshire have come to my notice during the year. These are:

Rhabdoweissia crenulata (Mitt.) Jameson (64) Crevice in wet slate rocks, Twistleton Glen, Ingleton, January 1960; M. C. F. Proctor (*B.B.S. Trans.*, Vol. 4, Part 1).
Campylopus introflexus (Hedw.) Brid. (64) Found by F. E. Branson on 18th March, 1962, at Birstwith on replanted slope at the side of the Pateley Bridge road, opposite to Ross Bridge.
Aphanolejeunea microscopica (Tayl.) Evans (64) Twistleton Glen, Ingleton, September, 1960; M. C. F. Proctor (*B.B.S. Trans.*, Vol. 4, Part 1).

New Vice-County Records

Ditrichum cylindricum (Hedw.) Grout (64) Bank by path through wood, Clapham; September, 1961; Finch (*B.B.S. Trans.*, Vol. 4, Part 2).
Dicranum flagellare Hedw. (64) On ash trunk by roadside west of Malham Tarn House, September, 1960; M. C. F. Proctor (*B.B.S. Trans.*, Vol. 4, Part 1).
Mnium rugicum Laur. emend. Tuomikoski (65) Calcareous flush in Deepdale, near Barnard Castle, August, 1960; Perry and Appleyard (*B.B.S. Trans.*, Vol. 4, Part 2).

Other Interesting Records

Dicranum strictum Schleich. (64) Fountains Abbey and Brimham Moor; F. E. Branson.
Fissidens pusillus Wils. ex Milde (64) Huddleston Quarry; Y.N.U. Bryol. Excursion.
Leptodontium flexifolium (Sm.) Hampe (64) Burley Moor, near Lanshaw Delves; Miss M. Dalby.
Scorpidium scorpioides (Hedw.) Limpr. (64) Burley Moor, near Lanshaw Dam; Miss M. Dalby.
Riccia sorocarpa Bisch. (62) Huby Common; Miss C. M. Rob.
Blasia pusilla L. (62) Huby Common; Miss C. M. Rob.
Leiocolea badensis (Gottsche) Jorg. (64) Huddleston Quarry; Miss M. Dalby on Y.N.U. Excursion.

It is proposed to hold our two meetings in 1963 in the Fountains Abbey area in the spring, and in upper Wharfedale in the autumn.

Mycology (R. Watling): The committee has once again held two successful forays, the spring meeting at Cloughton and the autumn foray at Slaidburn.

A number of interesting finds were recorded at Cloughton, amongst which the most noteworthy was *Monilinia johnsonii*, on hawthorn fruits. As was to be found at the autumn foray the ground was dry in most areas visited and ' hands and knees ' searching was always necessary.

The autumn foray yielded very few unusual agaric records. The more interesting fungi recorded were the hypogeal species, *Elaphomyces granulatus* and *Melanogaster ambiguus*. The *Elaphomyces* was found in woods both at Slaidburn and at Whitwell, and in the latter locality many of the fruit bodies were parasitised by *Cordyceps ophioglossoides*.

Mycologically the year has been unpredictable; one area would provide good collections whilst another area, often quite close, would be quite barren. Some woodlands and pastures have been earlier than usual, others late or unproductive. The low temperatures and cold winds this year have hardly favoured a good agaric season.

I have received no notes on fungi so this report must rest on the accounts of the Section's two forays. I have now completed the revision of the fungus flora of the Parish of Halifax. Records have been added up to and include 1960 and the whereabouts of herbarium material to substantiate earlier collections now annotate Crossland's list.

A Saury Pike (*Scombresox saurus*) at Kilnsea.—On November 13th, 1962, an unusual fish (13½ in. long) was found on the Humber shore near the East Riding village of Kilnsea, and was brought to the museum for identification on the 22nd. Despite a resemblance to the Garfish (*Rhamphistoma belone*), the detached finlets behind the dorsal and anal fins, together with the short beak and minute teeth, show clearly that the specimen is of the uncommon Saury Pike, or Skipper. Unfortunately, it was not possible to preserve the specimen.—David A. E. Spalding, Hull Museums.

[See *Nat.* 1944, p. 103, for Scarborough and Filey records.—Ed.]

YORKSHIRE
INCOME AND
Year ending

EXPENDITURE

1961 £ s. d.		£ s. d.	£ s. d.
	GENERAL PRINTING:		
30 7 2	Members' Cards	34 16 8	
45 0 8	Circulars	60 0 10	
			94 17 6
	The Naturalist:		
464 17 2	Members' and Exchange Copies	513 7 7	
14 7 5	Extra Pages and Illustrations	1 7 3	
7 6 6	Editor's Expenses	5 10 4	
			520 5 2
	SUNDRY EXPENSES		
23 18 7	Officers' Expenses	27 17 2	
1 13 6	Duplicating and Stationery	38 15 6	
1 0 0	Subscriptions: Council for Nature	1 0 0	
3 0 0	Bank Charges	2 15 0	
8 5 0	Exhibition Expenses...	– – –	
			70 7 8
91 6 11	EXCESS INCOME OVER EXPENDITURE		59 12 11
£691 2 11			£745 3 3

BALANCE SHEET

1961 £ s. d.		£ s. d.	£ s. d.
	ACCUMULATED FUNDS—GENERAL:		
100 0 0	Booth Fund	100 0 0	
100 0 0	Cheesman Fund	100 0 0	
250 0 0	R. C. Fowler-Jones Legacy	250 0 0	
100 0 0	E. G. Bayford Legacy	100 0 0	
			550 0 0
550 0 0			
	MYCOLOGICAL FUND:		
10 5 10	Balance brought forward	29 18 1	
19 12 3	Sales of Cortinarius	15 10 10	
			45 8 11
	ORNITHOLOGICAL FUND:		
100 0 0	Balance brought forward	100 0 0	
3 0 0	Interest on Investment	3 0 0	
26 0 0	Donations	26 0 0	
129 0 0		129 0 0	
29 0 0	*Less* Expenditure	29 0 0	
			100 0 0
	LIFE MEMBERS' ACCOUNT:		
150 0 0	Balance brought forward	149 15 0	
15 15 0	New Life Member	– – –	
165 15 0		149 15 0	
16 0 0	*Less* Transfer to Subscriptions...	15 0 0	
			134 15 0
	GENERAL RESERVE		
150 9 0	Balance Brought forward	150 0 0	
	Less Cost of Centenary Dinner	11 19 4	
	,, Additional Cost of Centenary Number of *The Naturalist*	31 9 6	
			106 11 2
	SUSPENSE ACCOUNT		
15 15 0	Balance Brought Forward	15 15 0	
	Less Cost of Brochure	15 15 0	
			– –
	SUNDRY CREDITORS		
	Estimated Cost of July *Naturalist*	130 0 0	
	Subscriptions paid in advance	20 5 0	
	Others	17 13 4	
41 4 4			167 18 4
	INCOME AND EXPENDITURE ACCOUNT:		
222 10 1	Balance brought forward	313 17 0	
91 0 11	*Add* Excess of Income over Expenditure	59 12 11	
			373 9 11
£1350 9 5			£1478 3 4

NATURALISTS' UNION
EXPENDITURE ACCOUNT
October 31, 1962

1961					
			INCOME		
£	s.	d.		£	s. d.
550	12	0	Subscriptions	559	19 10
45	6	9	Donations	21	7 0
28	0	10	Tax recovered	90	2 6
8	15	6	Sale of Mycological Reprints	7	0 1
4	14	9	Sale of other Publications	13	11 5
21	7	6	Interest on Investments	21	7 6
32	5	7	Bank Interest	31	14 11
£691	2	11		£745	3 3

October 31, 1962

1961						
£	s.	d.		£	s.	d.
			INVESTMENTS (Nominal Value):			
100	0	0	Booth Fund—3½% Conversion Stock	100	0 0	
100	0	0	Cheesman Fund—3½% War Stock	100	0 0	
100	0	0	Nicholas Fund—3% British Transport	100	0 0	
200	0	0	General Fund—4% Consols (Bank of England)	200	0 0	
159	10	11	,, ,, 4% Consols (P.O.)	159	10 11	
659	10	11		659	10 11	
235	0	0	*Less* Reserve for Depreciation	235	0 0	
424	10	11				424 10 11
			DEPOSIT ACCOUNT:			
			York County Savings Bank	747	6 9	
			Add Interest accrued	30	17 3	
796	9	1				778 4 0
			CURRENT ACCOUNT:			
95	12	1	Westminster Bank			266 12 0
			SUNDRY DEBTORS			
			Subscriptions unpaid	9	0 0	
			Less Reserve for Bad Debts	7	0 0	
				2	0 0	
33	17	4	Sundry receipts not Credited	6	16 5	
						8 16 5
£1350	9	5				£1478 3 4

Market Value of Investments approximately £440 0 0

We have audited the foregoing Income and Expenditure Account of the Yorkshire Naturalists' Union with the books, records and vouchers produced to us and certify the same to be in accordance therewith and with the information and explanations we have required.

WHITHAM, SMITH, MITCHELL & Co., Chartered Accountants,
4-6 Harrison Road, Halifax.

JOINT VERTEBRATE SECTION MEETINGS, 1962

THERE were two meetings this year, on March 10th and October 13th. Both were well attended, particularly in the evening, 150 being present on the first occasion and 168 on the second. A. H. B. Lee was the able Chairman on both occasions.

At the March meeting A. J. Wallis was unable to be present to give the 1961 Ornithological Report, but R. Chislett gave a report on activities at Spurn during 1961, followed by J. Cudworth on ' The November 5th, 1961, Blackbird Immigration on the East Coast '. H. O. Bunce then gave a brief résumé of ' The Spread of the Collared Dove in Yorkshire '. Fulmars provided the next topic, specimens of skulls, bills, wings and complete birds provided by Messrs. Dickens, Ryder and Pashby were described expertly, in detail, by J. Cudworth. After the tea interval C. Winn gave an illustrated talk in which he gave details of the Sand Martin and Swallow roost at Fairbairn, and listed the recoveries of some of the large number ringed. D. J. R. Potter showed his film of Fairburn and the roost, and gave an amusing and much appreciated commentary. The principal speaker of the evening session was Miss C. M. Acland describing a six-month tour of African Game Reserves. Both the larger African mammals as well as some of the birds were illustrated by colour slides. With each slide the speaker usually had an interesting anecdote.

In October the main speaker at the Joint Meeting in the afternoon was Dr. Winifred Frost of the Freshwater Biological Station at Windermere. She gave an outline of their work on fishes in the lake and spoke in some detail on three of the nine species found there. After the tea interval, G. R. Edwards gave a comprehensive account of birds seen during his sea voyages during the past few years. He dealt first with migrant land birds, waders and gulls, at sea and on board ship. He then went on to describe the various groups of pelagic species, showing, with the aid of colour slides of his own excellent paintings, the distinguishing features of some of the more unfamiliar groups. His talk was profusely illustrated with colour slides of such widely separated places as Tristan da Cunha, Suez, Antarctica, etc., and of birds in flight taken from the ship, and at the nest. Finally he provided a cine-film showing some of the survey work being undertaken in Graham Land with fascinating and often amusing shots of penguins and other species of Antarctic bird.

J. K. FENTON, *Hon. Convenor.*

ORNITHOLOGICAL SECTION MATTERS

Recorders.—A. Walker has, unfortunately, had to relinquish the office of recorder for V.C. 64. Will observers (both full members and affiliated) please send any further records they have for 1962 and subsequently, to the new recorder, J. R. Mather, 44 Aspin Lane, Knaresborough.

Spurn Bird Observatory.—The new Secretary is J. K. Fenton to whom all general matters should be referred, but bookings should be made direct to " The Warden, Spurn Bird Observatory, Kilnsea, Patrington, near Hull." Visitors intending to feed at the Crown and Anchor are advised to let Mrs. Robinson know in advance.

Protection of Birds Act (1954).—An order under the above Act has removed the Sparrow Hawk from schedule two, as from Wednesday, December 5th, 1962. The Sparrow Hawk is now a protected species.

Toxic Chemicals.—It is becoming increasingly evident that the effects of seed-dressings and sprays are more insidious than was formerly even suspected. The R.S.P.B. (The Lodge, Sandy, Beds.) is anxious to collect as much information as possible about the deaths of birds due to toxic chemicals. Information about side-effects, and fresh specimens should also be sent to the R.S.P.B.

R. F. DICKENS (*Hon. Sec.*).

Slow-worm Record.—A female slow-worm (*Anguis fragilis*) was caught on Suffield Moor near Scarborough, and kept at Belle Vue Museum, Halifax.

On October 2nd, 1962, it gave birth to fourteen living young, but one of them, measuring 84 mm. in length, drowned in a water bath a few minutes later. On October 9th it produced a further eight living young (one of which measured 83 mm.) and six additional ones which failed to hatch. Dissection of the latter revealed that two were infertile and one, which had been seen to be moving inside the membrane, measured 70 mm. The remaining three youngsters were all well formed and measured 30 mm., 30 mm. and 65 mm. respectively.

This would appear to be the greatest number of young from one female slow-worm ever recorded in Britain.—M. JOHNSON, Belle Vue Museum, Halifax.

AUTUMN FORAY AT SLAIDBURN
September 22nd to 24th, 1962

W. G. BRAMLEY

THE Autumn foray was well attended and the district visited was entirely new ground to the Section. Fungi were not plentiful, however, in any of the localities investigated, the cause lying probably in the low summer and autumn temperatures rather than with unsuitability of the terrain. Despite the rather sparse collections, more than thirty species unrecorded either for the county or vice-county were identified during the foray. Of these *Hymenogaster ambiguus* was a notable find. No Yorkshire records for this hypogeal species appear to have been made since those in Massee and Crossland's *Fungus Flora of Yorkshire*. *Elaphomyces granulatus*, which is probably the commonest hypogeal species, was found in two widely separated localities, in one of which—at Whitewell—the fruit bodies were spread over an area of 50 sq. ft. under birch saplings and many specimens were parasitised by *Cordyceps ophioglossoides*.

At the Sectional Annual General Meeting Mr. Roy Watling gave the Chairman's address on ' Mapping Macromycetes ' in which he explained the scheme formulated by the European Committee for the detailed distribution studies of selected species of fungi. Examples were given to illustrate the working of this new mycological project and considerable discussion of the scheme took place after the address.

Dr. C. Booth of the Commonwealth Mycological Institute was elected Chairman for the coming session and Dr. T. Hering of the Nature Conservancy, Grange-over-Sands, was elected Secretary. This foray brought Miss Grainger's long and devoted service as Secretary to the Mycological Section to a close. Prior to the business meeting the Chairman, on behalf of all the members of the Section, presented Miss Grainger with a bouquet of flowers and a voucher for the purchase of flowering shrubs and bulbs of her choice. We thank Miss Grainger once again for all her work over the many years she has been in office.

At this meeting also the last page of the current minute book of the Section, which was commenced in 1915 by Secretary A. E. Peck, was filled. The volume will be duly deposited with the Union's archives.

B = Browsholme Park. S.R. = Stocks Reservoir.
D = Dunsop Bridge. W = Whitewell.
S = Slaidburn.
† Not in Mason & Grainger's *Catalogue of Yorkshire Fungi*.
* Not in Mason & Grainger's *Catalogue of Yorkshire Fungi* for V.C. 64.

**Boletus erythropus* (Fr. ex Fr.) Secr., B, D.
†*B. holopus* Rostk. apud Sturm., S.R.
B. luridus Schaeff. ex Fr., S.
†*B. reticulatus* (Schaeff.) Boud., S.
**Clitocybe aggregata* (Schaeff. ex Secr.) Gillet, W.
†*Collybia cookei* (Bres.) Arnold, W.
**Cortinarius crocolitus* Quél., S.R.
†*C. pseudosalar* Lange, B.
Galerina mniophila (Lasch) Kühn., B, S.
**G. vitaeformis* (Fr.) Moser (=*rubiginosa*).
†*Gymnopilus penetrans* (Fr. ex Fr.) Murr., S.R.
†*Hebeloma leucosarx* Orton, W.
**Hygrophorus chrysaspis* Metrod, S.
†*H. flavescens* (Kauffm.) Smith & Hesler, S, S.R., W.
†*H. marchii* Bres., B.
**H. nigrescens* (Quél.) Quél., S.R.
**H. russocoriaceus* Berk. & Miller, S, S.R.
**Inocybe bongardii* (Weinm.) Quél., S.R.
**I. calamistrata* (Fr.) Gillet, S.
**I. petiginosa* (Fr. ex Fr.) Gillet, B.
**Lactarius tabidus* Fr., S.R.
†*Naucoria luteofibrillosa* (Kühn.) Kühn. & Romagn., W.
Pleurotus ostreatus (Jacq. ex Fr.) Kummer, on *Crataegus*, W.
†*Psathyrella chrondoderma* (Berk. & Br.) A. H. Smith, S.R.
†*Russula betularum* Hora, W.
†*R. laurocerasi* Melzer, S.R.

Russula nitida (Pers. ex Fr.) Fr., S.R., W.
†*R. mairei* Singer, B.
†*R. rosea* Quél., W.
†*R. sardonia* Fr., D.
†*R. versicolor* J. Schaeff., W.
**Tricholoma ustale* (Fr. ex Fr.) Kummer, B.

Fomes annosus Fr., on *Crataegus*, S.
Lenzites betulina (L.) Fr., B.
Oxyporus (*Fomes*) *populinus* (Fr.).
Polyporus chioneus Fr., S.
**P. stipticus* (Pers.) Fr., S, W.
†*Trametes rubescens* (A. & S.) Fr., B.
**Hymenogaster ambiguus* (Vitt.) Tul., B.

Cordyceps ophioglossoides (Ehrh.) Link., W.
Elaphomyces granulatus Fr., S, W.
Otidea onotica (Pers.) Fuckel, W.

Y.N.U. BRYOLOGICAL SECTION ON BURLEY MOOR, September 8th, 1962

G. A. SHAW

Although Burley Moor is essentially a gritstone area, with much acid peat bog, yet here and there in the area visited a marked tendency towards a more basic flora is evident.

The lower portion of Coldstone Beck produced *Hygrohypnum luridum* (Hedw.) Jennings, *Hyocomium flagellare* B. & S., *Pohlia albicans* (Wahl.) Lindb., *Oligotrichum hercynicum* (Hedw.) Lam. & DC., *Dicranella squarrosa* (Starke) Schp., one small patch of *Blasia pusilla* L., an abundance of *Barbilophozia floerkei* (Web. & Mohr) Loeske, and *Scapania undulata* (L.) Dum. The dry Woofa Bank, evidently somewhat more basic than the surrounding moorland since wild thyme grew here, had *Leptodontium flexifolium* (Sm.) Hampe in plenty. From here the party made its way towards the upper Lanshaw Dam, being shown on the way *Chiloscyphus polyanthos* (L.) Corda in a rill. A small bog by Lanshaw Dam (pH 6·4) showed its basic character by producing *Scorpidium scorpioides* (Hedw.) Limpr., *Drepanocladus revolvens* (Sm.) Warnst., *Ctenidium molluscum* (Hedw.) Mitt., and *Pellia fabbroniana* Raddi. Here also were *Dicranella cerviculata* (Hedw.) Schp. and *Riccardia pinguis* (L.) S. F. Gray.

Other bryophytes seen during the day included *Dicranum bonjeani* De Not., *Campylopus flexuosus* (Hedw.) Brid., *Bryum pseudotriquetrum* (Hedw.) Schwaegr., *B. capillare* Hedw., *Mnium punctatum* Hedw., *Aulacomnium palustre* Hedw., *Philonotis fontana* (Hedw.) Brid., *Fontinalis antipyretica* Hedw. (confined to just one part of Coldstone Beck), *Campylium stellatum* (Hedw.) Lange & C. Jens., *Drepanocladus fluitans* (Hedw.) Warnst., *D. exannulatus* (B. & S.) Warnst., *Cratoneuron filicinum* (Hedw.) Roth, *Acrocladium stramineum* (Brid.) Richards & Wallace, *Polytrichum gracile* Sm., and *Mylia anomala* (Hook.) S. F. Gray.

The Section's thanks are due to Miss M. Dalby for so ably leading the party and showing us most of the bryophytes mentioned above, and also for giving us the benefit of her increasing knowledge of the local *Sphagna*, and finally for entertaining us so hospitably at her home in Menston.

Keys to the British species of aquatic Megaloptera and Neuroptera, with ecological notes, by **D. E. Kimmins.** Second edition. Pp. 23. Freshwater Biological Association. Scientific Pub. No. 8, 1962. 2/6.

Covers the six species in the genera *Sialis*, *Osmylus* and *Sisyra* and includes an account of their life histories. It deals with adults and larvae. It would have been advantageous, and there is room, to enlarge the keys to permit separation of the adults included from those, e.g. Hemerobiidae, with terrestrial larvae, but this is a useful pamphlet for freshwater biologists.

J.H.F.

***Epipactis phyllanthes*—a plant new to West Yorkshire.**—In the *Naturalist* 1955, 28, the diseovery of the orchid *Epipactis phyllanthes* G. E. Sm. in East Yorkshire was announeed and in an artiele in the following issue (1955, 65) Dr. D. P. Young discussed the distinguishing features of this species and commented upon its distribution. As mentioned in Dr. Young's artiele, this is an uncommon and very variable orchid whieh oeeurs in scattered localities in such eounties as Kent, Suffolk, Flintshire, and also on the coasts of Lancashire and Glamorgan. Its diseovery in the East Riding added a new species to the Yorkshire flora.

I had occasion to visit the Laneashire loeality on August 13th, 1962, and saw many examples of this plant in its sand dune habitat. Coineidentally, on the following day, I discovered a small group of *E. phyllanthes* var. *pendula* in an entirely new loeality, the Aberford–Barwick-in-Elmet district of V.C. 64. A speeimen was sent to Kew, where identification was eonfirmed by Mr. V. S. Summerhayes, and also subsequently by Dr. D. P. Young, who has made a speeial study of the genus.

The small eolony was found growing under dense, mature beeeh trees amongst dead leaves, on ground almost devoid of other vegetation, but several specimens of ivy and Enehanter's Nightshade were also growing in the vicinity. The soil was well drained and highly caleareous, typieal of other habitats for the speeies, the underlying formation being magnesian limestone.

This diseovery forms the seeond record of *E. phyllanthes* for Yorkshire, and a new one for V.C. 64. The variety *pendula* is also new to the county, as the plants in the East Yorkshire loeality were of the variety *vectensis*.

I am indebted to Mr. V. S. Summerhayes of Kew, and Dr. D. P. Young for the interest they have shown in this discovery, and also for confirmation of my identifieation.—M. Densley.

***Trocheta subviridis* in Yorkshire.**—During an exehange of letters dealing with botanical matters the writer was surprised to receive from Dr. W. A. Sledge a note, which had been sent to him by Mr. R. F. Diekens, on the capture of a land leeeh in South Yorkshire. The speeimen had been found at Ferrybridge by Mr. T. W. Vale and had been sent to the Ministry of Agrieulture and Fisheries where it had been identified as *Trocheta subviridis*. This speeies, whieh is sometimes known as Dutroehet's Land Leeeh is seldom reeognised when seen and its distribution is very patehy. Many years ago a number were taken in an old land drain at Far Headingley, Leeds, by Mr. Philip Hartley, and as far as the writer is aware the Ferrybridge occurrenee is only the seeond time this species has been reeorded in Yorkshire.

T. subviridis is truly amphibious, often forsaking running water for moist land in seareh of its food whieh eonsists of earthworms and inseet larvae, whieh it swallows whole. It also seems fond of streams and ditehes contaminated by sewage. Other recorded habitats are old outside lavatories and the drains leading away from them and regions noted for their wet elay soils attraet them. Leeehes as a group suffer from a laek of workers and no doubt this in part aceounts for the few Yorkshire reeords for this speeies.

The writer would like to thank both people eoncerned for their interest and co-operation in bringing to his notiee this interesting record of an obseure member of our fauna.—E. Thompson.

The Ferruginous Duck (*Aythya nyroca*) in North Yorkshire.—From mid-September onwards, Mrs. Malone of Seampston Hall beeame aware that two unfamiliar ducks were present on her lake in the park. She invited Sir Charles Riehmond Brown to visit the spot but by then only one of the birds was present. He obtained good views of a bird about the size of a Tufted Duek but of a general ehestnut colour, with darker wing mantles. The under tail eoverts were white and when it took wing the seeondaries formed a nearly white bar. The bird was seen by the writer on Oetober 7th, in eompany with the above named, and it was agreed that it eould only be a female of the above species. Mrs. Malone, the daughter of the late W. H. St. Quintin, had already eome to this eonelusion.

Unlike the Tufted Ducks, which also visit the lake, these birds avoided the open water and kept to the edges of the reed-beds. They were much wilder and when disturbed had the ability to rise nearly vertically out of the reeds. The eall sounded like ' tek-tek-tek '.

In *Yorkshire Birds* Mr. Chislett notes nine previous County records for this unusual visitor.—E. Wilfred Taylor.

Aberrant Specimen of Great Northern Diver.—On March 18th, 1962, at Sand-le-Mere, about 2 miles north of Withernsea, the writer found the dead body of a Diver on the beach. It was seen by several people that evening, and after comparing the bill, wing, and tarsus measurements (see below) with those given in the *Handbook*, and noting that the shafts of the primary feathers were white, shading to brownish-white at the tips, all were of the opinion that the bird was a White-billed Diver (*Gavia adamsii* Gray), as indeed it looked from the appearance of the bill with its straight upper mandible, and up-tilted lower one, and pale horn or ivory colour. It was preserved by Mr. Alfred Rider, who declared it to be an immature female in, at least, its second winter. The bird was later taken to the Liverpool and the British Museums, where Mr. R. Wagstaffe and Messrs. Galbraith and Colston all declared it to be a Great Northern Diver (*G. immer* Brünn). It would appear therefore that bills are only partially diagnostic in these two species of diver. Abnormalities of bill are not very rare among many species. The danger of identification through reliance upon one supposedly diagnostic feature, especially between closely related species, both of which show plumage variation according to season and age as well as individual variation, is here well exemplified.

The writer is indebted to Dr. and Mrs. White for their help in getting the bird identified. The skin is now in the Hull Club's collection, in the Hull Museum.

Measurements.—Bill: tip to feathers, 92 mm.; tip to nostril, 71 mm.; depth at angle, 20 mm.; depth at base, 26 mm. Wing: 374 mm. Tarsus, 90 mm.—B. S. Pashby.

Immature—Adult Proportions and Behaviour in Black-headed Gull Flocks.—Since the publication of our note under the above heading (*The Naturalist*, July–Sept., 1956, p. 114) we have been able to extend our observations and confirm our conclusions concerning the flocks at Grange-over-Sands, north Lancashire. The following tables record our counts to date:

Ornamental Gardens	*Samples*	*Adult*	*Imm.*	*Imms. as approx. per cent. of total*
8/9/59	2	20	5	20
27/9–1/10/55	22	159	135	46
28/9–1/10/62	4	115	12	10
1–2/11/59	8	218	52	19
24–29/11/55	3	98	32	25
25–28/12/55	13	292	99	25
24–26/12/56	4	114	12	10
24–27/12/57	14	309	109	26
27–28/1/56	7	119	51	30
13/2/57	1	17	4	20
23/2/57	2	72	7	9
Shore and Fields near Kents Bank				
8/9/59	2	150	3	2
15/9/59	1	16	0	0
27/9–1/10/55	12	408	58	12
30/9–1/10/62	2	107	2	2
31/10–2/11/59	5	157	1	1
24–29/11/55	3	56	3	5
25–28/12/55	3	30	2	6
25–26/12/56	3	53	2	4
25–27/12/57	9	179	7	4
27–28/1/56	3	39	2	5
13/2/57	2	32	0	0

The percentage of immatures in the total no doubt varies according to breeding season success—1955 appears to have been a good year—but invariably, in winter, it is higher in the ornamental gardens than on the shore and fields. Possible reasons for that are discussed in our original note.—K. G. Spencer and A. Welch.

Obituary

HAROLD WALSH
(1881–1962)

It is with much regret that we record the death on October 29th, 1962, of Harold Walsh of Luddendenfoot, a former Recorder for the Bryological Section of the Y.N.U.

Walsh was a true successor to that line of working men naturalists which the Calder Valley has produced over the years; men such as John Nowell and James Needham who, born with no advantage of affluence and receiving but little formal education, yet by dint of hard work and application to their studies, became proficient in their own particular line and well known far beyond the confines of their valley. Walsh left school at the age of 10 to work half-time and at 13 had a full-time job in a worsted mill. His interest in bryology dates back some considerable time, for about 1916 he was attending a biology course at Halifax given by the late Norman Walker of Leeds University. Walsh showed Walker a prepared slide he had made showing pollen development on the stigma of Evening Primrose and, in Walsh's words, Walker 'gave him a bob' for it as an encouragement, saying it would be useful to him at the University. About this time he made a hand microtome at the machine tool shop where he worked, and with this and some simple apparatus—'a small spirit lamp, a metal plate and Oxo tins for paraffin'—he was able to prepare slides of botanical material. He was for many years one of the mainstays of the now defunct Ovenden Naturalists' Society, and was its President for many years. The wide extent of his interests is shown by the list of subjects on which he lectured to that Society. In addition to botanical themes we find such titles as 'The Starfish', 'Pond Life', 'Respiration', 'Malaria', 'Gravity and the Root', 'Plankton', 'Locusts and Related Insects', 'Gleanings from the Life of Luther Burbank', 'Bone and Allied Structures', and 'The Ecology of the Little Owl'. It may also be put on record that he found two Woodlice (*Porcellio laevis* and *Metoponorthus pruinosus*) new to the Halifax parish.

Walsh joined the Y.N.U. in 1945, and the British Bryological Society in 1946. He was Recorder for the Bryological Section of the Y.N.U. from 1946 to 1952, when he handed over to Mrs. J. Appleyard. During this period he was a regular attender at field meetings, though his prime interest was always in the flora of his own neighbourhood. He made many additions to this flora, one of the most remarkable being his discovery in 1947 of a solitary plant of *Buxbaumia aphylla* on a wall near Hebden Bridge. This important specimen is now lodged in the Ingham Herbarium at Leeds University. In addition to many short notes, his most important publications were 'Notes on the distribution of *Schistostega osmundacea* (Dicks.) Mohr in the Parish of Halifax' (*The Naturalist*, 1948); 'Geotropism and Phototropism in the Sporophyte of *Splachnum sphaericum* (L. fil.) Sw.' (*The Naturalist*, 1947); and his major work, 'Supplement to the Mosses and Hepatics of the Flora of Halifax' (*The Naturalist*, 1957), in which he reviewed the present status of the bryophytes as compared with that given in Crump and Crossland's *Flora* of 1904.

G. A. Shaw

BOOK REVIEWS

Brain and Behaviour in Cephalopods, by **M. J. Wells.** Pp. iv+171 with 1 plate and 53 text figures. Heinemann, London and Toronto, 1962. 16/-.

This is the first of a series of monographs on recent developments in biology. Its author, Martin Wells, is an acknowledged expert in the field of cephalopod behaviour and this account deals with animals of which he has had direct experience; indeed he is writing largely about his own work. There are sections on the structure of cephalopods, especially of the brain; on behaviour in natural and experimental situations, and on learning. The concluding section deals with the little that is known concerning brain and behaviour in *Nautilus*.

This book is written with all the enthusiasm and attention to detail of the expert, yet the style remains lucid and eminently readable throughout and the text is illustrated by some 50 excellent line drawings. Although aimed primarily at the specialist, it will undoubtedly be read with profit and pleasure by a much wider audience. It sets a high standard for the rest of the series and by current standards the price is modest.

J.M.D.

The Migration of Birds, by **Jean Dorst.** Pp. 476, with numerous maps, graphs, etc. Heinemann, 1962. 50/-.

In Dr. Sherman's translation of the book first published in Freneh in 1956, English readers may now more readily study this important contribution from the direetor of the Freneh Natural History Museum. The translation is so exeellent that one is rarely aware either of an Ameriean influence or of a Freneh original.

Important knowledge aequired since the earlier French edition has necessitated a complete revision, and by incorporating the additional information, Dorst (not to be confused with the German worker, Rudolf Drost) now gives an up-to-date, eomprehensive, world-wide survey of the many aspeets of bird migration and of the various teehniques employed in studying it. The faet that the bibliography runs to 52 pages, gives a clear indieation of the thoroughness of the author's researches. Although many of the 130-odd maps have been published before, they also have been brought up-to-date and improved in one way and another. They are models of elarity and invaluable in summarising at a glance many of the topies discussed in the text.

Chapters dealing with typical patterns of groups of migrants and with migration routes in Eurasia and America are eomparatively detailed. The effects of different geographical and climatic faetors in the two great land masses are eompared. Information from the southern hemisphere and on some of the sea-bird migrations will be new to many readers whose watehing has been limited to Western Europe. Methods of studying migration are discussed, including the ringing sehemes in many eountries. Our own annual contribution unfortunately appears meagre through the omission of a nought; about 20,000 a year should, of course, be 200,000. Invasions and similar types of movements are dealt with and a very detailed chapter on orientation gives accounts of mueh recent experimental work. It is useful to have all this information brought together with the valuable comments on it. The author frequently draws attention to the dangers of drawing general conelusions and of over-simplifying; he is nevertheless not afraid to advance new and stimulating ideas.

This is a monumental work which every serious ornithologist should regard as a ' must '. A section on the physiological stimuli of migration is in parts difficult for the layman but otherwise the book is easily readable and pleasantly free from the jargon which bedevils so mueh present-day seientific literature.

R.F.D.

The Return of the Osprey, by **Philip Brown** and **George Waterston.** Pp. 223 with 18 photographs. Collins, 1962. 21/-.

This book deals primarily with the now familiar story of the return to Scotland of the Osprey as a breeding species. Almost a third of the book, however, is devoted to chapters (some by additional authors) on the re-establishment of Avocets, on Black-tailed Godwits, and on other ' lost ' species whieh have reeently returned to Britain. Exactly half the photographs, too, are of these other speeies. In fairness the title should have been more comprehensive and the authorship should have included, at least, ' and others '.

The story of the Ospreys' several attempts to breed and of the perils they had to face, makes good reading. There is an almost ' whodunit ' atmosphere about the presentation. The seetion on the natural history of the Osprey gives a good deal of useful information on distribution, breeding behaviour, ete. The photographs of all the species mentioned are generally excellent, especially some of those of Ospreys. It is perhaps a pity that some rather less satisfactory ones of the Scottish birds are included without pointing out that they were taken under vastly different conditions from those in Sweden and elsewhere.

Although the Avoeet's return has already been proelaimed, it is a good plan to link together in this one book the several achievements of the Royal Soeiety for the Protection of Birds in proteeting and eneouraging species whieh one hopes may again become firmly established as British breeders. Incidentally, intending purehasers—and all ornithologists should have this book—will further the work of the R.S.P.B. by ordering copies (21/- post free) direct from the Soeiety at The Lodge, Sandy, Beds.

R.F.D.

A Glossary for Bird Watchers, by **Michael Lister.** Pp. 96. Phoenix House Ltd. 8/6.

In this follow-up of the author's glossary in his earlier *Bird Watchers' Reference Book,* English, French, German and Dutch terms used in ornithological publications are brought together, defined, and in many cases their author and origin given. It does not claim to be exhaustive but it is nevertheless difficult to find any explanation for the inclusion of such everyday terms as rump, back, roost, field-glasses, and nest-boxes, while omitting such a term as faecal-sac for instance,

It is useful to be able to go to a single volume for Bergmann's Rule or Mayr's Rule or a host of specialised ornithological terms. There are useful cross-references after the English words to those of the same meaning in the other languages; but putting foreign terms in italics, *in groups,* between the main English terms, does not make for the easiest reference.

With the present trend in scientific writing for inventing new terms and complex explanations, such a glossary as this is likely to become out of date very quickly. It serves to underline how unnecessary so many of these terms are. Poikilothermous, we learn, is synonymous with cold-blooded. With apoptilous and eutaxic we are referred to diastatastic and later find that stichoptilous requires us to 'see' one, 'Cf.' another, and means the same as the third of these three. And these are all English! One can only regret that authors cannot express themselves in good simple English which would have made the present glossary largely unnecessary.

R.F.D.

Between the Sunlight and the Thunder: the Wild Life of Kenya, by **Noel Simon.** Pp. 384 with one coloured plate, 26 photographs and many maps. Collins, London, 1962. 30/-.

The author, who was deputy director for the Royal National Parks in Kenya and founder of the Kenya Wild Life Society, writes with first-hand knowledge of the changes taking place in Kenya and the neighbouring territories. In his opinion human interference has profoundly affected the balance of the wild life, resulting, during the present century, in the extinction of seven species and a great reduction in the numbers of those remaining. This is due to shooting and poaching but still more to the destruction of the pastures by imported herds of domestic cattle.

Much has been done by the creation of game reserves and the appointment of game wardens, but much more would be possible if the natives, particularly the Masai, could be brought to realise that the controlled cropping of the native animals can be made much more profitable than the grazing of cattle. It is well known that the wild animals, with their diverse feeding habits, do not destroy the pastures and bring about soil erosion.

This is a book that should be read by all who wish to preserve for the future a representative selection of the varied forms of animal life that, a few decades ago, roamed the African Continent in incredible numbers.

E.W.T.

Animals of East Africa, by **C. A. Spinage.** Pp. 160 with 48 photographs and 6 in colour. Collins, 1962. 30/-.

What an excellent thing it turned out to be for so many of us when Clive Spinage went to join the Kenya Police in Africa. He thus came into contact with the wild life which he found so irresistible that after two years he changed his way of life so that he could make more use of his opportunities. Thus it came about that this naturalist with a wonderful eye for a picture was able to let us share with him these truly delightful encounters backed by all kinds of interesting and lesser known facts and observations about the animals portrayed. It is difficult to select from these splendid photographs anything for special mention but I think the double illustration of 'an elephant herd in the Euphorbia tree country of western Uganda' is quite superb whilst the 'Lesser flamingoes preening in the early morning on Lake Nakuru, Kenya', is something of infinite beauty and delight.

This is not just another book of African wild life: it is a book which one cannot afford to miss, and one from which I have derived much pleasure. I whole-heartedly recommend it and I look forward, in joyous anticipation, to further treats from Clive Spinage.

E.H.

The Morphology of Pteridophytes, by **K. R. Sporne.** Pp. 192 with 28 text figures. Hutchinson University Library, 1962. 12/6.

The morphology of living pteridophytes has been studied so intensively and for so long that comparatively little information not available in other texts is to be expected, though the recent discovery of *Stylites* was a notable addition to knowledge and the inclusion of a description of it in this book gives a welcome new look to the account of the Isoetales. With the exception of the Gymnosperms no other group of plants can compare with the Pteridophyta in the extent to which knowledge of fossil types has revealed past evolutionary change and hence made possible phylogenetic deductions. And new fossils or new information about previously imperfectly known types steadily accumulates. It is therefore especially for its incorporation of recent discoveries in palaeobotany relevant to problems of morphology and phylogeny within this group, that this book will be found most useful. The Pteridophyta are well covered by text-books but Dr. Sporne's book is likely to become widely used by undergraduates for it covers its field competently to the level required by degree students, is well balanced, up-to-date and inexpensive. The crowding of the illustrations on the small pages does not make for ease of reference and the organ referred to as a stem on page 174 is labelled a root in the accompanying illustration.

W.A.S.

Welsh Ferns, by **H. A. Hyde** and **A. E. Wade.** Fourth edition. Pp. x+122 with 12 plates and 70 figures. National Museum of Wales, Cardiff, 1962. 15/-.

The present edition of this excellent handbook has been revised and rearranged throughout. The two recently distinguished species of *Polypodium* are included—with illustrations—and illustrations have been added of the pinnules of *Dryopteris abbreviata* and *D. borreri*. Many varieties included in previous editions have been omitted but descriptions of hybrid ferns receive more attention and sections on hybrids and on chromosomes have been added to the introduction. The section in the introduction of earlier editions dealing with classification which was largely inspired by Bower's writings, has been omitted and the classification and sequence now follow that adopted in Dandy's *List of British Vascular Plants*, including, unfortunately, the retrograde transference of the Ophioglossaceae from the beginning to the end of the family sequence. Welsh records have been brought up-to-date and the plates in this edition have been transferred to the end of the book. The price is double that of the last edition though there are fewer pages; but the book has now been provided with a cloth cover. Despite its title, *Welsh Ferns* includes all British ferns and it is unquestionably the best descriptive account available of the British fern flora.

W.A.S.

Water Beetles and other things: half a century's work, by **Frank Balfour-Browne.** Pp. viii+219. Blacklock Farries and Sons Ltd., Dumfries. 25/-.

For more than sixty years Professor Balfour-Browne has assiduously collected, studied and recorded the British water beetles and since his retirement thirty years ago they have been his principal interest.

The present volume, after a brief autobiographical account, deals with aspects of the water beetles that particularly interest him. Only the specialist will study the chapter on the history of the list of British species in which he criticises the application of the Law of Priority about which he is well known to feel strongly—so strongly that he repeats his arguments almost verbatim in a later chapter—but the chapters on recording, life histories, and habitats contain much of wider appeal. In discussing the longevity of *Dytiscus* he mentions the curious behaviour of the Chalcid parasite *Melittobia acasta* where, when a virgin female is isolated, she lays a solitary egg which she carefully tends, nursing the hatched larva until pupation. If deprived of this larva she repeats the process and will continue many times. All these eggs produce males. Deprived of a male, she produces one herself. After mating she lays the normal batch of 300 eggs, most of which are female. The book is interspersed with such fascinating digressions.

On collecting and habitats he inspires one to a fresh consideration of the possibilities of one's own locality. Many local species are to be found where water trickles through *Sphagnum* or the only water to be seen is in one's own footprints in the swamp.

He is depressing on the subject of many famous fenland haunts, including Askham Bog. The glory has departed and nothing can prevent the evolution which will further spoil these places as homes of aquatic life.

A chapter on the origin of the British water beetle fauna vigorously attacks the proponents of the theory that certain now flightless insects could only have crossed from the mainland to an island *via* a land bridge. He supports his case with many records. Inspired by disagreement, it will provoke further argument. My sympathies are with Balfour-Browne. There is a chapter on ' Problems ', suggestions for further work, and a bibliography of 64 pages. This includes 60 Y.N.U. reports that contain references to water beetles (and often duplicates the entry under the name of the author).

The book has its faults. It is sometimes repetitive. The index is poor. But the enthusiasm of the author makes it a most refreshing book.

J.H.F.

Echinoderms, by **David Nichols.** Pp. 200 with 26 text figures. Hutchinson University Library, London, 1962. 12/6.

One of the main difficulties in reviewing this book is to identify the audience for which it is intended. The chapters on the anatomy of modern forms are altogether too brief for the needs of a student who has not studied the group and yet have little to offer to one who has; on the other hand the naturalist is given the scantiest account of the behaviour and ecology of these extraordinary creatures. For a professional zoologist there is considerable interest in the phylogenetic speculations, but they are nearly all old friends and anyhow are healt with very cursorily; for example the view, strongly supported by the author, that crinoids can be derived from eocrinoids depends for its plausibility mainly on a satisfactory explanation of the different relationship of the skeleton in the arms and thecae of the two types, but this difficulty is simply ignored. Perhaps the book can be recommended best to honours students as a starting point for those discussions on the origins and inter relationships of the great animal groups which, engendering more heat as the evidence becomes more tenuous, are one of the fascinations of classical zoology.

T.K.

Animal Geography, by **Wilma George.** Pp. 142 with numerous text illustrations and maps. Heinemann. 21/-.

Zoogeography is a very broad speculative subject and this book is restricted to the land vertebrates and in particular the mammals. It is divided into four sections. In the first, after an introduction on map projections, Miss George describes the characteristics of each of the zoogeographical regions of the world. The second section outlines the major geographical and zoological changes which have occurred in geological time, and an attempt has been made in section three to correlate these to explain modern distributions. This section also includes some discussion of the theories of land bridges and continental drift. The final section deals with island faunas.

The maps are clear and uncluttered with detail. The marginal sketches are attractive and with the maps form an integral part of the text, to make the book both instructive and stimulating. This book should be of considerable interest to naturalists and students of zoology.

J.B.

Goma the Baby Gorilla, by **Ernst M. Lang.** Translated by Edmund Fisher. Pp. 62 with 56 photographs. Victor Gollancz, 1962. 21/-.

Goma is the first gorilla to have been born in Europe and as her mother, an inmate of Basle Zoo, did not appear to know what to do with her, she was adopted by the Director and his wife who brought her up in their own home as the baby of the family. Dr. Lang has carefully recorded her development and behaviour both in script and picture and in closest detail until at eighteen months old, Goma once again took up residence in the Zoo but with Pépé, another baby gorilla which had been reared with foster parents in the Cameroons and brought over to be her companion. Goma was so very childlike that this book will endear itself to all fond parents and those interested in the growth and behaviour of the gorilla.

E.H.

Forever Free, by **Joy Adamson.** Pp. 192 with 91 photographs and 8 in colour, Collins & Harvill Press, 1962. 25/-.

This third book of Joy Adamson's needs no introduction; it is every bit as fascinating as her others though so sadly telling us of the death of Elsa whom we have all come to know and to love. It describes the ups and downs of Elsa's cubs and the trials and tribulations of her foster parents during the necessitous capture and transfer of the cubs to new territory in the Serengeti some 700 miles away. Like the other two narratives concerning Elsa, this last one will have a wide appeal to all who are interested in lions and love the wild.

E.H.

British Mesozoic Fossils. Pp. 205, 72 plates. British Museum (Natural History), London, 1962. 12/6.

This, the second of a series of handbooks intended ' to enable those without experience to know what fossils they may expect to find and to identify for themselves those they have collected ' maintains the high standard of the first. Yorkshire naturalists will find this volume of particular value because it includes many fossils found in the Jurassic rocks of the north-eastern part of the county and in the Cretaceous of the Wolds. 72 plates, with excellent, clear drawings of over 350 fossils make this handbook a real bargain.

H.C.V.

Geology of the Country around Clitheroe and Nelson. *Mem. Geol. Survey Great Britain.* Pp. 346, with 12 plates and 22 text figures. H.M.S.O., London, 1961. 45/-.

The memoir describes in great detail the results of the re-survey of this classic area of north of England geology. The famous Clitheroe reef-knolls, the Millstone Grit of Pendle Hill and district, and the ground described by R. H. Tiddeman in his classic pioneer work on glaciation are all fully discussed. It will stand as an invaluable work of reference for a long time, and those merely concerned with fossil collecting are catered for by a list of no fewer than 474 fossil localities.

H.C.V.

Report on the Birds of the Doncaster District, 1961. Compiled by the Doncaster Ornithological Society and edited by F. Horner and R. J. Rhodes. Doncaster Museum Publication, No. XXIX. 3/-.

This is an example of what a local society, with 94 members, can do when energetically and capably organised, and encouraged and helped by a municipal museum and art gallery and its Director (M. E. F. Gilmour). Included are four plates from photographs; a map of the ten mile radius from Doncaster showing rivers and canals, reservoirs, marshes, heaths, woods, and built-up areas; secretary's and recorders' reports; report of the ringing committee (4,990 birds were ringed); report of the editors; and ' Classified List '. A very interesting report of 36 pages to be read and filed by any Yorkshire ornithologist who aspires to knowledge of distribution and unusual occurrences in the county. Items of special interest were supplied to the vice-county recorders of the Y.N.U. One of the year's lectures describes a visit to the Spurn Bird Observatory. I am glad to note that records of ringed birds recovered, no matteer by whom ringed, are included under the heads of the species concerned and not in a separate tabulation; among such is a Great Skua ringed in Shetland as young on 22/5/58, found dying near Mexborough on 16/3/60. The Society is much indebted to Mr. Gilmour who will enjoy the whiff of fresh air brought into the museum by field ornithologists.

R.C.

Migration Report of Giggleswick School Natural History Society, by **D. H. Parkin** and **F. J. Roberts.** 9d.

An introduction refers to the Grey Phalarope seen in autumn 1959 at Settle Sewage Farm, and hopes to provide further migrational information from there, and this is fulfilled by occurrences of Whimbrel, Spotted Redshank, Greenshank, Knot, Little Stint, Sanderling, Ruff and Turnstone. It is surprising what regular watching produces at many places. The authors show awareness of the importance of dates to records but miss on occasion; absence of dates can be seed for doubt. Observation in the spring term of 1961 shows much improvement.

R.C.

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Edited by

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with the assistance as referees in special departments of

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Contents

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ORNITHOLOGICAL SECTION

THE inclusion in the Spring Vertebrate Section Meeting of the item 'A Discussion on the Effects of the Hard Weather, 1963', prompted a number of members to suggest that we ought to collect as many records as possible of these effects on bird life with a view to summarising them for a paper in *The Naturalist*.

Will members therefore write to me at the address below giving any observations they may have. I suggest that they list them as far as possible under the following headings: Movements preceding, during and after the Arctic spell; unusual visitors to the observer's area or garden; unusual behaviour resulting from the hard winter; casualties, or injuries, directly attributable to it; dates of observations and reduced or increased numbers.

It was also suggested at the meeting that we should try during the summer months to estimate what effects there were on breeding populations. All records are, of course, valuable, but, *in particular*, will members please look out for Redshank, Lapwing, Heron, Coot, Moorhen, Black-headed Gull, Song Thrush, Blackbird, Dunnock, Skylark and Wren numbers to see if there has been any marked change in the numbers of pairs breeding in a given area.

R. F. DICKENS,
Ridgefield,
Glasshoughton Hill,
Castleford.

SUBSCRIPTIONS

Y.N.U. Subscriptions for 1963 (**20/-**) were due on January 1st, and should be sent to The Assistant Treasurer, Mr. G. A Shaw, Botany Dept., The University, Leeds, 2.

Exchange copies of the following periodicals may be had on loan from The Editor of *The Naturalist*, The University, Leeds 2, on receipt of stamped addressed envelope:

British Birds.
Bird Notes.
Bird Study.
Essex Naturalist.
The London Naturalist.
Irish Naturalists' Journal.
Transactions of the Lincolnshire Naturalists' Union.
Transactions of the British Mycological Society.

Copies of Mr. A. A. Pearson's Papers, Mycena, The Genus Inocybe, and second editions of British Boleti and The Genus Russula, price 2/6 each, and Mr. P. D. Orton's Cortinarius Part 1 and 2, price 7/6 each, may be obtained from the Editor of *The Naturalist*.

THE STATUS OF THE ROCK PIPIT (*Anthus spinoletta* ssp.) IN THE WEST RIDING OF YORKSHIRE

G. R. NAYLOR

INTRODUCTION

In Yorkshire generally, over the past few years, the Rock Pipit seems to have increased considerably, if not as a breeding bird then certainly as a passage migrant, particularly in autumn.

This increase may, of course, only be apparent and could be explained by the fact that more observers are now able to recognise this rather difficult species. However, the fact remains that the general increase (real or apparent) is reflected by a number of occurrences—not all of which have been published—in the West Riding during the past seven or eight years.

Certainly up to 1952, when *Yorkshire Birds* was published, there were no records of Rock Pipits away from the coastal areas of the North and East Ridings. However, there are a number of occurrences of the very closely related Water Pipit (*Anthus spinoletta spinoletta*), but these were in the North Riding, near Pickering.

The systematics of the *spinoletta* group of pipits are perhaps not fully appreciated and quite a number of sub-species have been described. Since the identification of sub-species by call note is not a procedure within the scope of the average ornithologist, it is quite possible that some of the West Riding records may refer to races other than *A. spinoletta petrosus* (Rock Pipit). Nevertheless, when it has been possible to make full descriptions, all the West Riding birds have been of this race and it is therefore reasonable to assume that most, if not all, the other records also refer to this sub-species.

RECENT INLAND OCCURRENCES

Turning now to the present status in the West Riding, the records come from two main areas. Firstly those from areas adjacent to the Rivers Aire, Calder and Don and, secondly, those from Eccup Reservoir, which is situated between the Aire and Wharfe valleys and which has been intensively watched for the last few years.

Below is a list of all known records (including unconfirmed ones).

1955—February 27th, at Fulneck (between Leeds and Bradford), a single bird. This is an unconfirmed report.

1959—October 8th, at Eccup Reservoir, three birds.
November 8th, at Swinton, near Mexborough (River Don), one caught and ringed.

1960—September 27th, at Eccup, a single bird flying west.
October 16th, at Eccup, two flying west.
November 6th, at Hangthwaite, Doncaster, a single bird.

1961—February 26th, at Fairburn, a single bird.
March 4th, at Fairburn, a single bird.
September 24th, at Fairburn, two birds.
October 8th, at Fairburn, two birds; also at Eccup, a single bird.
October 15th, at Fairburn, a single bird; at Eccup, five single birds passed over during the day, but may not all have been different.
October 22nd, at Fairburn, a single bird.
October 23rd, at Fairburn, a single bird.
October 25th, at Fairburn, a single bird.
November 1st, at Eccup, a single ' probable '.
November 5th, at Fairburn, a single bird.
November 12th, at Adwick-le-Street Sewage Works, Doncaster, two birds.
November 25th, at Fairburn, a single bird.

1962—April 8th, at Eccup, a single bird flying west.
October 7th, at Eccup, two single birds flying west; also at Adwick-le-Street Sewage Works, a single bird—eventually flew south-west.
October 10th, at Eccup, three birds flew west.
October 12th, at Eccup, a single bird.
October 13th, at Fairburn, a single bird.
October 14th, at Eccup, two single birds.

October 18th, at Eccup, a single bird.
October 20th, at Thrybergh Reservoir, Rotherham, a single bird.
October 24th, at Eccup, a single bird flying west; also at Armthorpe Sewage Works, Doncaster, a single bird.

Thus there are some 45 individuals involved in occurrences on 32 dates since 1955.

The records listed above are comparable with those from the London area where there are records of over 60 occurrences between 1923 and 1954. The table below summarises the records and shows clearly that the majority of records are in October —both in the West Riding and in the London area.

Month	*West Riding*	*London*	*Month*	*West Riding*	*London*
January	No records	5 records	July	No records	No records
February	2 records	8 records	August	No records	1 record
March	1 record	7 records	September	2 records	1 record
April	1 record	4 records	October	20 records	22 records
May	No records	No records	November	6 records	5 records
June	No records	No records	December	No records	12 records

In the West Riding, records cover the periods February 26th to April 8th and September 24th to November 25th.

The peak period of activity in the West Riding is the period October 7th to 26th and although this period will presumably vary from year to year, it seems reasonable to assume that Rock Pipits are to be expected particularly between the second and fourth weeks of October, with an overlap of up to a fortnight on either side. Spring occurrences are very few and far between and will be discussed at greater length later. Perhaps the most surprising results of this analysis are, firstly the lack of records in September and the sudden ' rush ' after the first week of October, and, secondly, the complete absence of records during the winter, i.e., in December and January, in view of the fact that Rock Pipits are to be found wintering quite well up the Humber—at least as far as Brough.

SPRING RECORDS

Spring records of Rock Pipits are very few. In fact there are only four and one of these is unconfirmed. It is interesting to note, however, that there are a number of records of Water Pipit in the county, the dates of which correspond to those included above as Rock Pipits. One of these records—Knaresborough Sewage Farm on April 18th, 1958—is within the area covered by this analysis and it is quite possible some of the spring records of Rock Pipit may refer to the typical race as there appears to be no evidence to the contrary.

COMPARISON WITH OTHER AREAS

Records from the London area have already been quoted. Apparently there are no inland records for Lincolnshire or Lancashire—the latter being particularly surprising in view of the westward direction of many of the West Riding birds which were recorded as passing over. Perhaps the most significant comparison is with Nottinghamshire where the Rock Pipit enjoys the status of ' rare passage migrant '. Single birds have been recorded in 1947, 1955 and 1960 and there were several in the autumn of 1956, with up to seven birds at one time. Most of the occurrences have been at Nottingham Sewage Works, which area lies adjacent to the River Trent and would support a theory that birds pass inland along the line of the Humber and thence along the valleys of the Trent, Aire, Don, etc., and possibly to the west coast.

FACTORS INFLUENCING THE OCCURRENCES OF ROCK PIPITS

Any attempts to account for occurrences of Rock Pipits by reference to weather conditions have proved somewhat fruitless. However, it may be significant that

75 per cent of the records from Eccup Reservoir are on days of, or following, easterly winds and on days of overcast conditions with or without rain or mist.

One interesting fact that has emerged is that the Rock Pipits are very rarely seen in association with Meadow Pipits (*Anthus pratensis*) and most of the records from Eccup are on days when Meadow Pipit passage has not been well marked. Perhaps this is not so surprising when it is realised that most of the Meadow Pipits in the area in autumn are birds passing south or south-east from the Pennines, whilst most of the Rock Pipits pass in a westerly direction and may be either birds which are moving south, down the east coast and then crossing the country, or possibly birds of continental origin.

Finally, it has also been noted that some of the Rock Pipits were associated with Pied Wagtails (*Motacilla alba*), but this may only be a reflection of similar feeding habits.

CONCLUSION

Rock Pipits have been recorded in the West Riding of Yorkshire only since 1955, but with increasing frequency. Most records cover the period of the second to fourth weeks of October and refer to birds either flying west or feeding near water or at sewage farms.

At this point it may be said that the first indication of the presence of the species is usually the call note which, although bearing a similarity to that of Meadow Pipit, is quite distinct, once the observer is familiar with the calls of both species. Identification of Rock Pipits on the ground is based on the generally dark appearance, along with the dark legs and greyish outer tail feathers, as opposed to the pale legs and white outer tail feathers of the Meadow Pipit.

ACKNOWLEDGEMENTS

I should like to thank Messrs. R. J. Rhodes and A. F. G. Walker who were kind enough to supply details of records from some of the areas mentioned.

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[The more intensive watching by more and more observers in recent years is itself a factor that increases the difficulties of accurate periodic comparisons of status. For more records to be made today of a decreasing species than were made, say, ten or twenty years ago is quite possibe. R.C.]

OBSERVATIONS ON AN EAST YORKSHIRE POPULATION OF THE HOUSE MOUSE (*Mus musculus* Linn.)

T. M. CLEGG

During the last two years I have examined about two hundred specimens of the House Mouse (*Mus musculus*) from a variety of Yorkshire habitats. As one might expect, a considerable range of colour variation was encountered in this sample. The extremes varied from almost black above and dark grey below to sandy brown above and cream or straw coloured below. This variation is a well-known feature of the species but in the past a number of sub-species were created on colour differences alone. However, L. Harrison Matthews (1952) and other recent authors place all the British House Mice, with the exception of the St. Kilda sub-species, *Mus musculus muralis* Barrett-Hamilton, in the sub-species *M. m. domesticus* Rutty.

Amongst the localities from which I collected or received mice was the Spurn Bird Observatory at Kilnsea, East Yorkshire, and this was the population on which the following observations were made. The specimens from this locality were lighter in colour than any others in the series. During the period February 1961 to

October 1962 I examined thirty-seven examples, which were caught in the observatory cottage or corn store, and all showed similar colour characteristics. On their dorsal surfaces they were light, sandy-brown, grizzled to a certain extent with darker brown, but paler than a series of specimens of the Wood Mouse (*Apodemus sylvaticus*), collected near Sheffield, which formed the best comparison with them. Below, they ranged from sandy-buff to a creamy straw shade and lacked any of the greyness normally found in the House Mouse. Barrett-Hamilton (1910-24) discusses local variation and mentions several cases of similar colouring amongst outdoor populations of this species. Those for example living out of doors on the Isle of May and on Fair Isle are described as being light and tawny in colour.

Fourteen of those trapped at Spurn were preserved as cabinet skins and used for comparison with examples from other areas. Most of those examined but not preserved were collected between December 1961 and February 1962 when an immigration into the observatory cottage took place, presumably to avoid the severe weather conditions which prevailed at the time. Specimens of Wood Mouse and Short-tailed Vole (*Microtus agrestis*) were also trapped indoors during this period.

In June 1962, through the kindness of the Irish National Museum authorities, I was able to compare the Spurn specimens with some from North Bull Island in Dublin Bay. The latter belonged to a remarkably pale, sandy-coloured population formerly designated as *M. m. jamesoni* Krausse. H. L. Jameson (1898) discovered this population living amongst open sand hills and suggested that their colouring might have arisen as a result of natural selection. This form apparently evolved in quite a short period as the island was a mere sand bar at the beginning of the nineteenth century. Colonisation probably occurred after 1823 when a bridge was built between the island and the mainland. The form was well established by the time of Jameson's visit in 1895. For comparative purposes I used the fourteen Spurn examples referred to earlier and eight skins of *M. m. jamesoni* which were collected between October 1895 and February 1897. In the case of the latter the earlier specimens were the palest and those of later date appreciably darker. The Spurn examples matched those at the 1897 end of the series.

The Irish population lived mainly out of doors and under the circumstances their sandy colouration could be the result of natural selection. The Spurn mice, however, appear to live entirely indoors and repeated trap setting on the sandy warren around the observatory gave no evidence of House Mice anywhere except in the actual buildings. The winter immigration does suggest that links are maintained with other populations but no House Mice were trapped at the lifeboat cottages or coastguard station farther down the peninsula and the people living near the Point had no knowledge of the species.

SUMMARY

1. Nearly two hundred specimens of the House Mouse from various Yorkshire localities were examined. Those from Spurn Bird Observatory formed part of a noticeably pale-coloured population.
2. Specimens from this locality were found to be similar to others from a predominantly sandy habitat in Ireland.
3. The House Mouse appears to be an indoor animal at Spurn and to be absent from buildings near the tip of the peninsula.

ACKNOWLEDGEMENTS

I would like to express my gratitude to Mr. Ralph Chislett, the chairman of the Spurn Bird Observatory Management Committee of the Yorkshire Naturalists' Trust, for his help with this project. Mr. P. J. Mountford, the Warden of Spurn, helped enormously by sending me mice which were caught in his de-infestation campaigns. Mr. J. Cudworth and Mr. C. Bower also directed specimens to me and the former gained me some from other localities. My wife gave me a great deal of help in the preparation of cabinet skins.

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THE RÔLE OF SHEEP IN THE DEGENERATION OF BRACKEN ON ILKLEY MOOR

J. H. FIDLER

DURING the survey of Ilkley Moor by the Wharfedale Naturalists' Society, it was noticed in September 1961 that a patch of bracken (*Pteridium aquilinum* (L.) Kuhn), near the head of Backstone Beck (Cow Close Gill on the O.S. map) was being eaten by sheep. Later that year a further small area was found in the same condition to the west of Black Beck which lies at the other end of Ilkley Moor.

Bracken is not normally a food plant of sheep and indeed it may sometimes prove poisonous to them, but they are known to feed on it occasionally. Bracken poisoning of cattle is well known in all parts of the world. The damage to the plants caused by the sheep is sometimes associated with a progressive degeneration of the stand, as was recorded by Garrett Jones in 1958 and stated by him to be even more widespread in 1961.

In October 1962 members of the Society again visited these parts of Ilkley Moor and it was noted that the same patches were this year more heavily grazed, and the fronds had decreased both in size and number. A more detailed survey of the surrounding stands of bracken showed that grazing by sheep and degeneration of the bracken covered a much wider area than these two patches; in fact about five acres in all have now been recorded. These various tracks appear to fall into four, presumably successive, stages:

(1) The fronds are comparable in size and number to those in adjoining ungrazed areas, but most of the pinnae are stripped off. This gives a rather open appearance tothe area, it being filled with almost bare rhachises and having a number of sheep tracks running through it.

(2) The fronds are not more than two-thirds the height of those in the untouched areas and the pinnae are almost completely stripped off. Sheep tracks have increased considerably and the bare standing rhachises are left in hummocks about 3-4 feet across, intersected by paths which are filled with trampled fronds.

(3) Fronds are few and much shortened, sticking up through the hummocks of old dead fronds. None appear to have grown in the paths between the hummocks.

(4) Only hummocks of dead grey fonds are left, with the broken trash between much pulverised.

In 1962, both patches which had been noted the previous year, were now in Stage (2). On the other (east) side of Backstone Beck other areas were found, each of about $\frac{1}{3}$ acre, in Stages (1), (3) and (4), while about $\frac{1}{4}$ mile farther south there was a separate area of about two acres in Stage (1). To the west of Black Beck a further two to three acres were found with the bracken in Stages (1) and (2). A closer examination of an adjoining stand of crowberry (*Empetrum nigrum* L.) showed that the ground had been occupied previously by bracken which had now all but disappeared.

So far there is no record of the grazing of bracken on this moor until the latter half of summer, and there is no indication of the biting of the main stem of young fronds as noted by Garrett Jones (1961). If this remains the case, it may give a clue to the cause of this phenomenon. For example, it seems possible that the bracken may be degenerating for some other reasons than just the grazing by sheep and that the sheep find the dying bracken more palatable than that in the more vigorously growing areas. No doubt the biting, and even more so the trampling of the sheep, would accelerate this degeneration and Garrett Jones has shown that the bracken can sometimes recover if protected from sheep. Moreover Conway and Stephens (1954) have stated that if a bracken stand is to be greatly reduced, it must be severely cut—at least three times in the period from May to July—for three consecutive years, and even then it is still capable of recovery if cutting is discontinued.

A notable feature in the Backstone Beck region was that the damage caused by the sheep ceased abruptly at a line running roughly east and west, and this line was in the same position in both years. There was here no physical separation by a path or gully as noted by Garrett Jones. This suggests that the degeneration is restricted to a particular clone, throughout which the infection spread, while adjoining clones are less easily infected. However, as Garrett Jones (1961) points out, the foci of grazing can jump a gap impassable by the rhizomes. This is apparent on Ilkley

Moor where the grazed areas are on both sides of the upper reaches of Backstone Beck which here runs over bare rock, and the bracken growing in the gully itself is free from grazing. The possibility of the soil becoming 'bracken-sick' has been suggested by Braid (1947), but as yet no causative micro-organism or virus has been isolated from the degenerating stock.

From an aerial photograph taken in May 1947, bracken does not appear to have been growing at that time in the areas around Backstone Beck, where it is now degenerating. It did, however, appear to be present in the gully and north of the line at which the grazing now stops. The 1947 vegetation west of Black Beck is less clear in the photograph. It would seem possible, therefore, that only the younger stands are being attacked. Conway and Stephens point out that the older rhizomes contain much larger reserves of food and are therefore less liable to degenerate when the fronds are destroyed. Both degenerating areas are near the altitude limit (the 1,000 ft. contour) for bracken on this moor, and the stock may well have been weakened by small changes in climate.

On Ilkley Moor the bracken stand has normally little undergrowth apart from a thin scatter of bilberry (*Vaccinium myrtillus* L.). Where the bracken is completely dead to the east of Backstone Beck, bilberry has grown through the hummocks and is also heavily grazed by the sheep. Garrett Jones states that in Wales grasses such as *Agrostis* rather than *Nardus* rapidly colonise the areas freed from bracken. On Ilkley Moor, where the rainfall is rather less than on the Welsh hills, the deep trash formed by the trampled fronds does not readily form a good seedbed and although mat-grass (*Nardus stricta* L.) is the main grass species present in these two areas, there is little sign of its becoming established when the bracken is dead. A very vigorous stand of crowberry grows between the patches of degenerating bracken near Black Beck and there are signs that this plant is rapidly succeeding the bracken both vegetatively and by seed. Indeed in this area the degenerating plants have little chance to reach Stages (3) and (4) before they are invaded and smothered by crowberry.

During the future course of the survey the Society hopes to keep close observations on the developments in these areas.

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Bird, by **Lois** and **Lovis Darling.** Pp. xviii + 261 with 193 drawings by the authors. Methuen & Co. Ltd., London, 1963. 30/-.

This well-produced book, with its profusion of excellent drawings, is arranged in three parts. The first part is devoted to the history of life, the history of birds and evolution. The second deals exclusively with birds and describes the part played in their lives by instinct, display, learning, the reproductive cycle, social behaviour, and migration. Part 3 deals with anatomy and physiology and the anatomical structure of a pigeon is, as it were, dissected and explained in the presence of the reader.

The authors have collected together a great deal of up-to-date information relating to birds and this is conveyed to the reader in a clear and simple style. While many derive great pleasure by observing the external beauty of form and movement of the living bird it is probable that few have given the same attention to the means whereby a bird is internally adapted to fill a particular nitch in the scheme of nature. As the authors, step by step, reveal the intricacies of the anatomy of a pigeon they are able to convey to the reader a sense of wonder and awe at what nature has been able to achieve.

This book is particularly recommended to the amateur ornithologist, who should be equally interested in the external and internal characteristics of the subjects of his study.

E.W.T.

A PRELIMINARY SURVEY OF THE BRYOPHYTES OF ILKLEY MOOR

Edited by Mary Dalby for the Wharfedale Naturalists' Society

Two of the most interesting features arising from the Wharfedale Naturalists' survey of Ilkley Moor have been the rapid ecological changes which have taken place over the last fifty years and the distribution of the vegetation, both of which are reflected in the bryophyte flora. Lying to the north-east of the Rombalds Moor massif separating the valleys of the Wharfe and the Aire the area under review lies within the boundaries of the Ilkley U.D.C. and comprises Ilkley and Burley moors. The northerly aspect of the lower slopes is particularly favourable for bryophytes.

Although the moor is predominantly acid, the pH ranges from 3.4 to 7, thus providing a variety of habitats and a flora which varies from the true acid loving bryophytes to such calcicoles as *Scorpidium scorpioides* and *Cratoneuron commutatum* var. *falcatum*. On the high moor these more basic areas appear to be related to old moraines where the ice has pushed limestone boulders down from the higher dales. Some of these, notably Lanshaw Delves, have actually been worked for the lime which they contain and drainage from them can alter the pH considerably. On the lower slopes there has been an extensive landfall from Rocky Valley to Barmishaw and here the rough boulder-strewn slopes have occasional basic springs and localised flushes. Other more basic areas also occur in Coldstone ravine, near Black Beck and below the Swastika stone.

The high moor consists largely of cottongrass bog, some heather and extensive areas invaded by crowberry, the most successful colonist. The lower slopes are bracken or crowberry covered, with a small amount of matgrass. It has been thought convenient to try to comment on the bryophyte flora by describing it partly by habitat and partly by associations. In many cases there is overlapping, but an attempt has been made to put each plant into its most typical habitat.

One of the most abundant and widespread mosses of the moor is *Orthodontium lineare*, readily recognised in winter and spring by its myriads of pale brown capsules. This moss was first recorded in Yorkshire at Bolton Abbey in 1924, and in 1930 was first observed on Ilkley Moor by Miss L. I. Scott. This was followed by a note in the *Naturalist* in 1932 recording it at Backstone Beck (Cow Close). During the last thirty years, therefore, since it was first observed on the moor it has proved a most successful colonist only rivalled in this respect by the crowberry. It grows abundantly not only on dry and eroding peat banks, which appear to be its favourite habitat, but also in sheets on the bare peat of the upper moor, colonising burnt areas, on tree stumps and even on the drying out tussocks of the hare's tail cotton grass. There is an interesting study of the history of this moss by W. H. Burrill in the *Naturalist* of December, 1940, where he describes it as ' a true breeding, very fertile, fixed mutation of *Orthodontium gracile* which has been known in this country since 1833 '.

Other mosses widespread and common on the peat are *Campylopus flexuosus*, *C. piriformis*, *Pohlia nutans*, *Ceratodon purpureus*, and on peaty banks *Dicranella heteromalla*, *Tetraphis pellucida*, *Mnium hornum* and the hepatic *Calypogeia muelleriana*.

Many accidental and some controlled fires occur on the moor; the latter on the remaining areas of heather burn quickly and do not go deep into the peat. If rain comes soon after the burning the ground is quickly recolonised, but in some of the accidental fires the damage goes deep and the fire may smoulder in the peat for weeks. These areas take a long time to be recolonised especially if a dry period follows, and it may be years before the barest covering of vegetation returns. Together with those plants already mentioned as colonising peat other early colonists include *Polytrichum piliferum*, *P. juniperinum*, *P. gracile* and *Funaria hygrometrica*.

The few remaining areas of heather (*Calluna vulgaris*) are for the most part on the high moor and the plants are small and stunted for they are heavily sheep grazed. Dense areas are rare so that the peat colonisers are still able to flourish. On the lower slopes heather is sparse and confined to small dry areas where *Leucobryum glaucum* is its typical companion, but very localised. Crowberry (*Empetrum nigrum*), being a plant which produces large quantities of debris by its manner of growth, chokes much of the surrounding vegetation, but its commonest neighbour is the hepatic *Barbilophozia floerkei* which sometimes grows to a luxuriant plant in the shadow of the crowberry before that plant engulfs it. Bracken grows

also in such dense stands that other vegetation is crowded out and only peat colonisers have been associated with it. Bilberry (*Vaccinium myrtillus*) frequently grows with *Dicranum scoparium*.

In the rough matgrass turf such a thick carpet of rhizomes is formed that very little can penetrate, but in the shorter turf of the path edges and trampled parts a variety of mosses may be found. These include *Rhytidiadelphus squarrosus, Hypnum cupressiforme* var. *ericetorum, Atrichum undulatum, Mnium undulatum, M. cuspidatum, M. longirostrum, Eurhynchium praelongum* and in wetter places *Plagiothecium undulatum*. Occasionally found are *Drepanocladus uncinatus, Lepidozia reptans,* and in one spot in Spicey beck ravine, *Breutelia chrysocoma*.

Even the cottongrass bogs of the high moor are now being invaded by crowberry which often grows on the crowns of the tussocks and can be seen trailing down into the wet peat and helping by its debris to dry up the habitat. Here, between the tussocks, the silky trailing stems of *Drepanocladus fluitans* and *D. aduncus* are abundant together with the hepatic *Gymnocolea inflata*. As the tussocks die and dry out a variety of bryophytes invade the dying sheaths including *Orthodontium lineare, Calypogeia fissa* and *Cephalozia connivens*.

Where rushes are dominant in the upland bogs they are almost invariably accompanied by *Sphagnum recurvum, Lophocolea bidentata, Acrocladium stramineum* and *Polytrichum commune,* which generally grow luxuriantly in this habitat. In Lanshaw and Crawshaw bogs where conditions are slightly more basic than most of the moor (pH about 6·4 and the habitat more open and free from rushes) some very interesting bryophytes occur. A localised area was discovered by members of the London Natural History Society when they visited the area at Whitsun, 1962, where conditions are basic enough for *Scorpidium scorpioides, Pellia fabbroniana* and *Ctenidium molluscum* to grow, the first submerged in a small leat and the last, surprisingly, in wet peat. Other bryophytes found here were *Mylia anomala, Drepanocladus revolvens, D. exannulatus, Aulacomnium palustre* and *Riccardia pinguis*. Crawshaw Moss has yielded also *Scapania irrigua, Riccardia multifida, Campylium stellatum, Fissidens adianthoides, Acrocladium cuspidatum* and *A. giganteum*. This last moss is of interest because Lees wrote in *Ilkley, Ancient and Modern* (1885), '*H. giganteum*. In a rill on the moor, over against the Cow and Calf rocks, very local although plentiful in one place; a fine and rare moss, discovered a very few years ago by Dr. J. S. Wesley.' This ' rill ' seems to have disappeared now from near the Cow and Calf but the moss has been found both at Crawshaw Moss and Lanshaw. *Dicranum bonjeani* has been found near Coldstone beck and near Carr Bottom reservoir, and Miss U. K. Duncan found *Mnium seligeri* and *Pohlia annotina* in wet ground up Spicey beck.

Lanshaw Delves and Woofa Bank are basic enough to appear as green islands among the heather and crowberry and on Woofa Bank *Leptodontium flexifolium,* although not particularly calcicolous, grows fairly freely.

The flushes of the lower slopes fed by a series of springs show the usual flora of *Philonotis fontana, Brachythecium rivulare, Bryum pallens, B. pseudotriquetrum, Mnium punctatum* and the vivid green masses of *Dicranella squarrosa*. Where the water is more basic these species are accompanied by *Sphagnum squarrosum* and below White Wells there is in addition a flourishing stand of *Cratoneuron commutatum* var. *falcatum,* the only place on the moor where this has been found. *Cratoneuron filicinum* was found near Carr Bottom in September 1962 by Mr. F. E. Branson at the Y.N.U. meeting.

The five main streams cutting the lower slopes have an interesting distribution of species. *Scapania undulata* is the dominant hepatic of submerged and wet rocks of the three easterly streams, while *Nardia compressa* dominates the westerly ones although the *Scapania* is also present. *Fontinalis antipyretica* has been found only in one small area of Coldstone Beck (the most easterly stream) and here too are *Hygrohypnum luridum* which grows also near the Tarn, and an abundance of *Hyocomium flagellare,* also in small quantity in Black Beck. *Riccardia sinuata* has been found in one small spring near the Swastika stone, and *Scapania curta* on wet rocks up Black Beck. Other submerged plants include *Eurhynchium riparioides* and *Chiloscyphus polyanthos* which is particularly luxuriant in a leat near Woofa Bank. *Cephalozia bicuspidata* grows on wet rocks and although a minute plant is conspicuous because of its abundance, and in deep shade up Spicey Beck *Fissidens pusillus* has been found.

Wet clay banks yield *Oligotrichum hercynicum* and the hepatic *Blasia pusilla,* both found only in Coldstone ravine and the latter sparsely in one small area.

Polytrichum aloides may be abundant in places and *Conocephalum conicum* and *Pellia epiphylla* are widespread and common. *Diplophyllum albicans, Dicranella cerviculata, Pohlia albicans, Fissidens taxifolius* and *Calypogeia arguta* also occur in this habitat. On detritus beside the streams grow *Dichodontium pellucidum, Solenostoma sphaerocarpum* and *Nardia scalaris,* the latter in great abundance near the Gill Head reservoir. An atypical form of *Brachythecium rutabulum* has also been found on wet rocks in the ravines.

Most of the boulders and crags of the moor are of millstone grit which yields little or no foothold to mosses, so that there are few true saxicolous species except in the deep crevices of sandstone rocks at the Cow and Calf quarry, Cow Close ravine and near Cowper's Cross where the tiny fernlike plants of the luminous moss, *Schistostega pennata,* can be found. Most of the rocks, however, are rough and uneven and here pockets of peat accumulate and are colonised by such mosses as *Ceratodon purpureus* and the shade loving *Isopterygium elegans.*

On the man-made stonework of tarns, reservoirs and walls are *Bryum capillare, Tortula muralis, Barbula recurvirostra, B. unguiculata, B. cylindrica* and *Dicranoweissia cirrata,* and near paths *Barbula convoluta, Amblystegium serpens* and *Bryum argentium* with its variety *lanatum.* The absence of any species of *Grimmia* or *Rhacomitrium* was puzzling until the discovery this year of *Rhacomitrium fasciculare* on a wall at Gill Head reservoir.

The Sphagna merit fuller description owing to their complexity and the fact that they are less commonly studied. There are fourteen species and varieties on the moor. The most abundant is *S. recurvum,* often growing with rushes but sometimes forming unbroken stretches on the high moor especially in the area below Crawshaw Moss. It is a robust plant, generally green but occasionally turning an orange colour but never red. It belongs to the *Cuspidata* group of which *S. cuspidatum* itself is widespread, growing in very wet places or even submerged and characterised by its long, almost setaceous branches and leaves. *S. squarrosum* occurs as an almost constant indicator of more basic areas. It is a beautiful Sphagnum, looking almost prickly with its spreading leaves, though as an illustration of the great variability of the Sphagna, there is a non-squarrose variety which also grows on the moor near Willie Hall's spout. *S. squarrosum* grows abundantly in flushes near Coldstone and below the White Wells, and may often be found fruiting. *S. teres,* the other member of this group, has been found only once in a bog near Weary Hill quarries. It is a very close relation of *S. squarrosum,* but does not generally show the squarrose feature of the leaves except after drying and in much less degree than typical *S. squarrosum.*

Most of the members of the *Acutifolia* group of Sphagna can become a beautiful red though on the moor they attain only a very mild pink. Presumably this inability to change colour is due to some quality of the light as plants in shade will remain green. One can only suppose that it is air pollution which prevents them from becoming the rich crimsons and rusts of the Scottish and Welsh highlands. *S. plumulosum* is a protean plant appearing in every habitat where Sphagnum grows, generally in dense cushions but sometimes lax and scattered when growing in wet bogs. It can be distinguished in the field by its small capitulum and by a peculiar rainbow sheen which is especially noticeable in a dry specimen. *S. nemoreum* and *S. rubellum* both occur but only in a mild pink, the colour often confined to the stems. These are localised and rare. *S. russowii,* which is a new vice-county record, occurs near one small spring and only in very small quantity. Here it is a dainty plant, fairly lax and characterised by a pink stem, but this is atypical as normally it is tinged with livid red and rather robust for a member of the *Acutifolia* group. *S. fimbriatum,* the only other member of this group found on the moor, is a slender plant growing in dense cushions near streams or beside rushes. It never turns red.

S. subsecundum is present on the moor as its two varieties, var. *inundatum,* which grows only in very wet places and is abundant in the upper tarn which is now much overgrown by vegetation, and var. *auriculatum* which is often submerged, when it becomes an atypical friable and feathery looking moss. Typically it grows as scattered robust shoots, often orange, with large capitula and the stems looking woolly with numerous branches and large stem leaves.

S. compactum has been found in only one area near the water hut below White Wells. Here it grows on a dryish bank with stunted heather and *Leucobryum glaucum,* which it superficially resembles in its mode of growth. It is dense and low to the ground.

The plants belonging to the last group of Sphagna represented on the moor are more robust and have short hooded leaves which give the stems a blunt look. Two species have been found, often very alike and identified for certain only microscopically. *S. papillosum* is generally brown in colour and shorter, it is widespread and has a dark stem. *S. palustre* is generally lighter in colour and may be a whitish green. Both grow on the drier tussocks and are widespread and common.

Perhaps enough has been written to give some idea of the great variety of the bryophyte flora even in an area so frequented by the public as Ilkley Moor. This is advisedly called a ' preliminary report ' for much still remains to be done, especially in the working out of associations with other vegetation and animal life in order to get a true picture of the ecology of the moor.

Our thanks are due to all who have helped in the survey and especially to Miss U. K. Duncan without whose constant help and patience in identifying specimens it could never have been completed. The nomenclature follows Richards and Wallace for the mosses and Jones for the hepatics.

FIELD NOTES

Insects on Meanwood Tip, Leeds.—As around other cities, so on the outskirts of Leeds many once famous localities for entomologists, e.g., Adel Moor and Roundhay Lime Hills, have sadly deteriorated and one must go farther afield or turn to recent man-made habitats in the search for specimens. One such is the old quarry in Meanwood Woods used as a Corporation refuse tip. The greater part of the surface remained undisturbed for many years and was covered by dense vegetation, but a couple of years ago most of it was bulldozed to a new level. Over this new surface vegetation is developing once again. Prominent among the plants now are stands of Mugwort (*Artemisia vulgaris* L.) and patches of Scentless Mayweed (*Tripleurospermum maritimum* (L.) Koch), Knotgrass (*Polygonum aviculare* L.) and Yarrow (*Achillea millefolium* L.) and on September 2nd, 1962, I examined these for insects with some success. Mugwort yielded plenty of the bug *Plagiognathus albipennis* (Fall.), a species scarce (or overlooked) in Yorkshire for the only three records are all from V.C. 62, while *P. chrysanthemi* (Wolff) was common among the herbage, probably feeding on the Yarrow and Scentless Mayweed. *Megalocoleus molliculus* (Fall.) was found on the Yarrow, and this bug again is one that is probably overlooked for the only other Yorkshire records are from Arthington and Bridlington. Scentless Mayweed produced *Ceuthorrhynchus rugulosus* (Herbst). Knotgrass supported numbers of the small Psyllid *Aphalara polygoni* Forst.

This tip has previously produced the very local ground beetle *Feronia angustata* (Duft.), usually found on burnt ground and first discovered in the north of England at Middleton, Leeds, in 1939. It is a beetle of temporary habitats, disappearing when vegetation covers the site. Another ground beetle, *Amara convexiuscula* (Marsham), which was once restricted to salt-marshes, and which now seems to be spreading inland on just such sites as this, has also been found here. Protected on all sides by the walls of the quarry or woodland, this is a sun trap in summer when it becomes alive with insects. Examination of other similar habitats could prove a profitable change for many collectors.—J. H. Flint.

The Water Shrew, *Neomys fodiens* in the City of York.—Mr. A. W. Ping, a member of the Union who lives well within the boundary of York, is in the habit of setting a mouse-trap in his tool-shed. In summer time the victims are chiefly House Mice, *Mus musculus*, but in the winter months, Field Voles, *Microtus agrestis*, Bank Voles, *Clethrionomys* (*Evotomys*) *glareolus*, and Wood Mice, *Apodemus sylvaticus* have been caught in some numbers.

On February 13th, Mr. Ping brought me a Water Shrew which he had just taken from the trap and this has now been added to Mr. Adam Gordon's collection of mammal skins.

This specimen was of the melanic type, the under parts being only a little lighter than the upper. The remarkable points about this capture are as follows:

1. That a Water Shrew, usually associated with rapidly flowing streams should ever visit York.
2. That it should have wandered at least 500 yards from the river Ouse.
3. That it should ever have entered a tool-shed.
4. That, in spite of the arctic weather it should have been in excellent condition.

E. Wilfred Taylor.

CLADOCERA (CRUSTACEA) FROM PENNINE MOORLAND

O. W. HEAL

The Nature Conservancy, Merlewood Research Station, Grange-over-Sands, Lancashire.

THE present survey records Cladocera taken from pools, tarns and reservoirs on or near to the Moor House National Nature Reserve, which is an area of blanket bog and mixed-moor, 1700-2800 ft. (516-851 m.) above sea level in the northern Pennines. Crisp (1962) records the Corixidae and describes the aquatic habitats in the area, while Gorham (1956) gives chemical analyses of waters from the reserve.

WATER BODIES STUDIED

The water bodies may be arbitrarily grouped into (1) pools and (2) tarns and reservoirs (Crisp, 1962). Those sampled are listed in Table 1 with National Grid References and altitudes and are arranged in approximate order of size.

1. *Pools.* These are less than about 100 sq.m. in area, with a maximum depth of about 2 m. Some pools formed in surface depressions contain much *Sphagnum*, others developed on bare eroded peat have little or no vegetation. Mine workings have resulted in the formation of a number of pools which have stony bottoms at least partly covered by peat. The mine pools have chemically rich water (pH about 7·0, total ionic concentration greater than 1·8 m-equiv./l., calcium greater than 15 mg/l.) compared with the natural moorland pools (pH about 4·0, total ions about 1·0 m-equiv./l., calcium about 1·0 mg/l.) (Gorham, 1956). The pool vegetation comprises *Sphagnum cuspidatum* Ehrh. ex Hoffm., *S. subsecundum* Nees, *S. recurvum* P. Beauv., *Eriophorum angustifolium* Honck., *Juncus effusus* L., *Equisetum fluviatile* L., *Callitriche* sp. and *Potamogeton natans* L., the last three species occurring mainly in mine pools.

2. *Reservoirs and tarns.* Of the five water bodies in this category only Knock Ridge Tarn (NY 736304) is naturally formed, the others resulting from damming of valleys or hillsides. They range in size from 500 to 20,000 sq.m. The proportion of peaty and stony shore varies greatly, Knock Ridge Tarn (NY 736304) being mainly peat bottomed while Rotherhope Mine Reservoir (NY 699423) is largely stony. Lady Vane Pot (NY 753347) with chemically rich water, pH 8·1 (Gorham 1956) has a relatively rich flora with well-defined zones of *Chara*, *Equisetum fluviatile*, *Potamogeton natans*, *Carex rostrata* Stokes and *Juncus effusus*. The other reservoirs and tarns, with chemically poorer water, have much less vegetation consisting mainly of *Glyceria fluitans* (L.) R. Br., *Juncus* spp., *Equisetum fluviatile*, *Eriophorum angustifolium* and green filamentous algae on the stones.

METHODS

Samples were collected from different shore types and, where possible, from open water using a plankton net attached to a 2 m. pole. Most pools were sampled on a number of occasions during 1958 and the tarns and reservoirs in June, 1962. Cladocera were identified after Scourfield and Harding (1958).

RESULTS

Ten species and varieties of Cladocera were recorded from the 23 water bodies (Table 1). Most of the species are known to be restricted to acid waters or to have a wide ecological range. The number of species found is small when compared with lists from Lake District ' moorland ' ponds (Smyly, 1952, 1957), but the latter have a wider range of shore types and vegetation and are chemically richer than most of the waters examined here. However, the chemically rich mine pools and Lady Vane Pot (NY 753347) which also has a rich vegetation contained only three forms of Cladocera (Table 1). This may result from the isolation of these water bodies from other rich waters; or from the temporary nature of the small pools and the presence of iron precipitates in Lady Vane Pot (NY 753347). Fryer (1955) comments that deposits of ferruginous material are usually associated with the complete absence of Crustacea. The present list is more comparable in size with that of Fryer (1955) who recorded only five species of Cladocera from very acid waters on *Eriophorum*—moor near Huddersfield.

Of the four species which occurred in 20% or more of the water bodies (Table 1), *Chydorus sphaericus* and *C. sphaericus* v. *coelatus* occurred over the whole range investigated and these are known to be widely distributed forms. *Scapholeberis mucronata* was found mainly in the larger pools and was sometimes abundant in open

water as well as among weeds. This is also a widely distributed species known to be tolerant of acid waters (Fryer, 1955). *Bosmina coregoni* v. *lilljeborgi* was the commonest species in the open water of the larger pools, tarns and reservoirs. This

TABLE 1

THE OCCURRENCE OF CLADOCERA IN SOME PENNINE WATER BODIES.
The sites are arranged in approximate order of size, and those with chemically rich water are marked *.

Nat. Grid Ref.	Altitude (in ft.)	Approx. area (sq. m.)	No. samples	*Scapholeberis mucronata* (O. F. Muller)	*Bosmina coregoni* v. *lilljeborgi* (Sars.)	*Acantholeberis curvirostris* (O. F. Muller)	*Acroperus harpae* Baird	*Alona quadrangularis* (O. F. Muller)	*Alona affinis* (Leydig)	*Alonella excisa* (Fischer)	*Alonella nana* (Baird)	*Chydorus sphaericus* (O. F. Muller)	*Chydorus sphaericus* v. *coelatus* Schoedler
Pools													
NY 759339*	1750	3	4									+	+
NY 758328*	1800		2									+	+
NY 762330	1800		6								+	+	+
NY 765327	1800		1									+	
NY 765327	1800		1									+	
NY 765327	1800		1									+	+
NY 765327	1800		1									+	
NY 758328*	1800		4									+	+
NY 758328*	1800	10	9									+	+
NY 765327	1800		3		+	+				+	+		+
NY 758328*	1800		14									+	+
NY 748315	2050		2	+	+	+						+	
NY 704351	2550		1										
NY 757325	1900		19	+		+			+	+	+	+	+
NY 748315	2050	30	1	+									+
NY 704354	2500		2									+	+
NY 702349	2650	50	3				+					+	+
NY 765327	1800		10	+	+	+				+	+	+	
Tarns and reservoirs													
NY 783330	2000		8									+	
NY 753347*	1750	600	11					+				+	+
NY 699423	1200	5000	6	+	+							+	
NY 736304	2500	5000	7		+								
NY 698399	1650	20000	6		+							+	
			122	5	6	4	1	1	1	3	4	19	13

agrees with Smyly (1958) who found it to be characteristic of open waters in high tarns which had total ionic concentrations of less than 0·8 m-equiv./l.

Acantholeberis curvirostris was recorded from four of the larger acid pools which agrees with Scourfield and Harding (1958) and Smyly (1958) who found it virtually confined to shallow acid tarns, 1-2 m. deep and particularly common near *Sphagnum*. Crisp and Heal (1958), working in western Ireland, recorded it most abundantly in 'lily-pools' less than 0·4 ha. (1 acre) in area and 2 m. deep, but it was also found in considerable numbers in the two largest lakes studied, 40-50 ha. (100-130 acres) and at least 7 m. deep.

Samples from pools were collected in April, July, September and November, 1958. Conclusions from these are limited by the extent of the survey but only

Chydorus sphaericus, *C. sphaericus* v. *coelatus* and *Alonella excisa* were recorded in April (6 pools, 18 samples), and only small numbers were found. *C. sphaericus* was abundant in the other months contrary to the observations of Smyly (1952, 1957) who found it to be abundant usually in spring and sometimes in winter, but scarce or absent at other seasons. He points out that this species is known to vary greatly in seasonal and annual abundance. All species were recorded in the summer samples and five (*C. sphaericus* v. *coelatus*, *Alonella excisa*, *Acantholeberis curvirostris*, *Bosmina coregoni* v. *lilljeborgi* and *C. sphaericus*) in November, the last three species being present in large numbers in some samples.

In addition to the species recorded here, Dr. J. Phillipson (personal communication) recorded *Alona rustica* Scott, *Alonopsis elongata* Sars and *Ceriodaphnia quadrangula* (O. F. Muller) in a short survey of some water bodies on the Moor House Reserve in 1954. *Alona rustica* in particular is associated with acid waters (Fryer, 1955).

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SUMMARY

1. Ten species and varieties of Cladocera were recorded from 22 moorland pools, tarns and reservoirs, 1,200-2,650 ft. above sea level in the northern Pennines.
2. *Chydorus sphaericus* and *C. sphaericus* v. *coelatus* were widely distributed; *Acantholeberis curvirostris* and *Scapholeberis mucronata* occurred mainly in the larger pools while *Bosmina coregoni* v. *lilljeborgi* was the main species where open water was present.
3. *C. sphaericus* was more abundant in summer and autumn than in spring, contrary to the observations of Smyly (1952, 1957).

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A Keeper's Tale, by **Fred Speakman.** Pp. 165 with frontispiece, 21 engravings and map. Bell, 1962. 18/-.

Keeper Butt recalls memories of two generations of gamekeeping in Epping Forest, of encounters with bird catchers and poachers among others and of the changes which have taken place in country and country life during the last hundred years. He is not enthusiastic about the transition from the old days of private service and the absolute loyalty which so often went with it, to the modern days of public engagement.

The casual reader would no doubt find the book of interest. Some country recipes for home-made wines have also been included.

GRASS DISEASES AT MALHAM TARN

OLIVER L. GILBERT

MALHAM TARN, high up in the Craven Pennines, is surrounded by great areas of semi-natural grassland. Within three miles of the Tarn, more than thirty species of grass occur. During 1960-62 I spent some time studying the parasitic diseases of these grasses and found twenty-seven species and subcategories of fungi on twenty-three hosts. This is an account of the more interesting records.

SMUTS

Ustilago striiformis was collected on *Dactylis glomerata, Festuca rubra, Agropyron repens* and *Sesleria albicans*. April to October is the best time to find this smut which is never very abundant. It has not previously been recorded on *Sesleria* in this country. In spite of much *Arrhenatherum elatius* in the area, *Ustilago avenae* was found only on the south face of Gordale Scar where there was 5 per cent. infection. The bunt, *Tilletia holci*, can be collected on *Holcus lanatus* and *H. mollis* along wood margins in July. Undetermined species were noted on *Trisetum flavescens* and *Anthoxanthum odoratum*.

RUSTS

These were disappointing as they included only the commonest species such as *Puccinia coronata, P. poarum, P. agropyrina, P. holcina, P. poae-nemoralis*, etc. The most abundant were *P. dispersa* on *Deschampsia caespitosa* and *P. baryi* which by September was doing great harm to every stand of *Brachypodium sylvaticum* in the area.

MILDEW

Very common and found on nine hosts. Cleistothecia were rare and seen only on *Agropyron repens* and *Festuca gigantea*.

LEAF FLECKS AND SPOTS,

As expected, *Mastigosporium rubricosum* was rife on *Dactylis*. The var. *agrostides* which has smaller spores and a red margin to the lesion, was frequent on *Agrostis* spp. and *Calamagrostis epigejos*.

Rhynchosporium orthosporum and *R. secalis* were found causing scald on *Dactylis* and *Agropyron repens* respectively. Both are sporadic around the Tarn and must be looked for in sheltered places.

In spring, Blotch and Char spot caused by *Septogloeum oxysporum* is common on *Arrhenatherum*, becoming scarce again by June. On *Agrostis tenuis* it appears later and forms a much blacker charspot stage.

The following *Helminthosporiums* were recorded at one time or another. *H. siccans* on *Lolium perenne* and *Festuca pratensis, H. vagens* on *Poa pratensis, H. stenacrum* on the lower leaves of *Agrostis tenuis, H. dictyoides* on *Festuca arundinacea*.

Halo Spot, *Selenophoma donacis*, regularly develops on the culms of *Dactylis* and *Cynosurus* from July onwards.

INFLORESCENCE DISEASES

Commonest in this group is *Claviceps purpurea* which occurs up to 2,200 feet, the highest place in the area. The most susceptible grasses are *Lolium perenne, Molinia, Nardus* and *Glyceria* spp. Other hosts included *Sesleria albicans*. Stager has described the disease on *Sesleria* as a new species, *Claviceps sesleriae*, which produces larger conidia in the sphacelial stage. It occurs sparingly on scree slopes behind Malham Tarn and also on Scout Scar near Kendal. These may be the first two British records.

Choke (*Epichloe typhina*) was collected twice on *Helictotrichon pratensis* and frequently on *Agrostis tenuis* and *A. stolonifera*. Compared with a similar sized area in southern Britain, Choke is rather rare in the Craven Highlands.

Twist (*Dilophospora alopecuri*) was first described exactly 100 years ago on wheat and has since been found on several wild grasses. At Malham it affects *Dactylis* and *Agrostis tenuis*, the amount varying greatly from year to year.

A thick deposit of pink spores on flag leaves of *Holcus lanatus* was identified as *Fusarium avenaceum*. It is not uncommon in late summer and frequently prevents the inflorescence from emerging naturally.

The known distribution of several of the diseases recorded in this survey is very limited, so their presence in this small upland area suggests that some of them are far commoner than the records indicate.

NOTES ON FOUR INTERESTING FUNGI FROM BRAMHAM PARK

J. D. LOVIS

Volvariella murinella (Quél.) Moser apud Gams

A single specimen of this rare fungus was found by the author on the edge of a ride in Bramham Park, V.C. 64, on October 7th, 1961. Apart from the first British record from Mickleham Downs (1), the only other record for this country known to me is from the lawns of Reading University, where it was found by P. D. Orton and F. B. Hora in 1955 (2). There is no previous Yorkshire record. This medium-sized species (cap 27 mm., stem 50 × 4 mm. in the Bramham specimen), is perhaps most easily confused with *V. taylori* (Berk. & Br.) Sing., but is satisfactorily distinguished by the entirely silky fibrillose cap being of *uniform* colour (pale mouse grey in my specimen), and the *pale* volva. In the Bramham specimen the volva was the colour of very pale milky coffee outside, in contrast to the dark olive-brown or grey-olive of *V. taylori*. My grateful thanks are due to Mr. P. D. Orton for confirming the identification. The specimen has been lodged in the Herbarium of the Royal Botanic Gardens, Edinburgh.

A Leeds University mycology class field trip to the south woodlands in Bramham Park on October 7th, 1962, produced three fungi of exceptional interest, described below.

Ramariopsis pulchella (Boud.) Corner = *Clavaria bizzozeriana* Sacc.

A small group of this tiny but beautiful Clavaria was found by Mrs. Bernard Kilby on a small piece of wood embedded in the soil surface. This fungus is described by Cotton and Wakefield (3), as very rare in Britain, and there is no previous record from Yorkshire.

Corner (4, p. 645) is of the opinion that this plant has been mistaken for small states of *Clavaria zollingeri* Lév. (*C. amethystina* sensu Cotton and Wakefield), the only other violet British Clavaria, even though these two species are quite distinct in colour, in stature, in mode of branching, and in the dimensions of the basidia and spores.

The present collection of *Ramariopsis pulchella* was bright violet in colour when fresh, paling with age, with clubs only about 1·25 cm. high and 0·5–1·0 mm. broad, branching only near tips, but then sometimes in a complex manner, the branches always diverging, and agreeing very well with the description ' divaricate with somewhat digitate ends.' The spores are very small, measuring (3·5)–4 × (2·5)–3μ, agreeing with Corner's figures, 3–4·5 × (2–)2·5–3·5μ, in contrast with the 4–7 × 3–5μ spores of *C. zollingeri*, which also lack the gutta found in *R. pulchella*, and clearly seen in the Bramham material when mounted in cotton blue in lacto-phenol. One further characteristic of the spores, their ornamentation, requires some explanation, since whereas Cotton and Wakefield describe the spores as smooth, Corner describes them (in common with all other spp. of *Ramariopsis*), as minutely echinulate or verrucose, with spines less than 0·5μ long. The spines are indeed exceedingly small, and I was unable to discern them convincingly even with an oil immersion objective when using a microscope equipped with an ordinary two-lens Abbé condenser. However, the spines, although minute, could clearly be seen when critical illumination was employed on an instrument of research quality equipped with an objective and condenser of better performance. In view of this experience, it is not surprising that Cotton and Wakefield described the spores of this species as smooth. The voucher material is still in the possession of the author.

Lactarius glaucescens Crossland.

This species of *Lactarius* was first described by Charles Crossland in 1900 in *The Naturalist* (5), from specimens gathered by James Needham in Wade Wood, Luddenden-dean, near Halifax. Although not recognised by Rea (6) or by Pearson and Dennis in their 1948 ' Revised List of British Agarics and Boleti ' (7), and omitted by Mason and Grainger (8), this species was included by Pearson in his 1950 monograph of *Lactarius* (9), and appears in the 1960 ' New Check List of British Agarics and Boleti ' of Dennis, Orton and Hora (10).

In his 1950 monograph, Pearson comments that this fungus had not been observed in recent years, and indeed there appear to be no records from 1916 until quite recently when it has been found several times, but only in N. W. Scotland (11).

The present rediscovery in Yorkshire is therefore of some interest. Only one specimen was found, collected by Dr. W. A. Sledge, but this specimen is remarkably close to Crossland's original description and illustrations. This fungus is evidently very closely related to the much more familiar *L. piperatus* (Scop. ex Fr.) S. F. Gray, and could only too easily be overlooked for an unusually small specimen of that species. The diagnostic characteristic of *L. glaucescens* is the property of the milk in changing colour on exposure from milky white to a glaucous green colour, the milk of *L. piperatus* being unchangeable. This colour is quite distinct from that of the changed milk of all other British Lactarii. The changed milk of *L. blennius*, which is nearest in colour, is of a distinctly more grey hue. A further distinctive feature of this species recorded by Crossland is the behaviour of the flesh and milk in 5% formalin. A slice of the cap of the Bramham specimen was left overnight in formalin, and the cut surface turned a bright blue colour, varying from a bright cobalt to pale ultramarine. The spores are not remarkable, corresponding to type L1 or L2, as is characteristic of all the species in the section *Albati*.

Undoubtedly some confusion exists concerning this rare fungus, particularly amongst continental authors. Even Pilát (12), who appreciates the diagnostic features of *L. glaucescens*, nevertheless equates this species with var. *pergamenus* (Swartz. ex Fr.) J. Lange of *L. piperatus*, an attitude contrary to that of British authors, by whom *L. piperatus* var. *pergamenus* is usually regarded as differing from the type mainly in its narrower stem, but not in the behaviour of its milk. Certainly it would assist clarification of the status of *L. glaucescens* if mycologists were to make a general habit of examining the behaviour of milk of specimens of *L. piperatus* that they encounter.

The Bramham specimen was sent to the Royal Botanic Gardens, Kew, and grateful thanks are due to Mr. D. A. Reid for confirmation of the identification.

Pluteus umbrosus (Pers. ex Fr.) Kummer

A single specimen of a most striking species of *Pluteus* found by Mr. M. H. Taylor has been identified by Mr. D. A. Reid of Kew as *P. umbrosus* (Pers. ex Fr.) Kummer. The cap, 8 cm. across, is covered by an anastomosing pattern of ridges densely covered with erect scales of a very rich chocolate brown colour, the depressions between the ridges having a less dense covering of these scales, exposing the pale yellow ochre ground colour. The edge of the cap is frilly with scales, and the pale pink gills have a conspicious dark brown edge. This species has not previously been recorded for V.C. 64.

My thanks are due to Mr. W. G. Bramley for assistance in checking records.

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An Introduction to Nature, by **Richard Martin.** Pp. 120 with numerous illustrations by Rein Stuurman. Blandford Press. 12/6.

Most branches of natural history receive mention in this book though the text is slight and its appeal lies wholly in Rein Stuurman's attractive illustrations of which there are over 100 in colour and over 130 in black and white. These should be of use in arousing the latent interest of potential naturalists or stimulating that of boys and girls in which the interest has already been aroused.

A CATALOGUE OF DERBYSHIRE FUNGI
PART I—AGARICS AND BOLETI

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No comprehensive catalogue of fungi in Derbyshire has been published to date. In 1908-1909, ' A First List of Derbyshire Agarics ' was compiled by Thomas Gibbs, an active mycologist and member of the then Derby Midland Railway Natural History Society, whose fungus forays were regular autumnal events. This first list included all known records of agaric collections extant, and has therefore been the starting point for the compilation of a county catalogue of fungi covering all groups collected and recorded to date. As agarics have received most attention in the past from local and visiting mycologists, it was decided to revise and extend the original list of Gibbs first, and also to include the Boletus records. This constitutes Part I.

Since the publication of Gibb's list, the British Mycological Society has held five forays within the county: three at Baslow, one at Matlock and one at Matlock Bath. A sixth foray based on Sheffield in 1956, visited the county on two occasions. These records together with those of individual local and visiting mycologists have been collated. All nomenclature for Agarics and Boleti has been revised according to the check list of Dennis, Orton and Hora (1960).

The number references in parentheses which follow each record refer to records of the species under the name given or to one of the synonyms listed in the check list. *Pholiota lenta* (Pers. ex Fr.) Sing. for example, has *Hebeloma glutinosum* (Lindb.) Sacc. and *Flammula lenta* (Pers. ex Fr.) Kummer as synonyms, and is referenced 2,4,6. It appears as *two* records in ref. 2 under each of the above synonyms, and likewise *two* records were published in ref. 4. It appears under the first synonym only, however in ref. 6. In the majority of species listed, each reference number refers to a single record only.

AGARICUS L. ex Fr.

A. arvensis Schaeff. ex Secr. (2, 4, 5)
A. campestris L. ex Fr. (2, 4, 5, 6)
A. comtulus Fr. (6)
A. erythropus Pers. ex Fr. (3)
A. haemorrhoidarius Schulzer apud Kalchbr. (2, 4)
A. silvaticus Schaeff. ex. Secr. (2, 10)
A. xanthodermus Genevier (6)

AGROCYBE Fayod

A. cylindracea (DC. ex. Fr.) Maire (5)
A. erebia (Fr.) Kühn. apud Sing. (2, 4, 6)
A. praecox (Pers. ex Fr.) Fayod (2, 5)
A. semiorbicularis (Bull. ex St Amans) Fayod (2, 6)
A. temulenta (Fr.) P. D. Orton (2)

AMANITA (Pers. ex Fr.) S. F. Gray

A. citrina (Schaeff.) S. F. Gray (3, 9)
A. crocea (Quél.) Kühn. & Romagn. (11)
A. fulva (Schaeff.) Secr. (10, 11)
A. inaurata Secr. (6, 9)
A. muscaria (L. ex Fr.) Hooker (1, 4, 6, 10)
A. pantherina (DC. ex Fr.) Secr. (2, 6)
A. phalloides (Vaill. ex Fr.) Secr. (1, 4)
A. rubescens ((Pers.) Fr.) S. F. Gray (1, 4, 6, 9, 10)

ARMILLARIA (Fr.) Kummer em. Donk non Sing.

A. mellea (Vahl. ex Fr.) Kummer (1, 7, 9, 10, 11)

ASTEROPHORA Ditmar ex S. F. Gray

A. parasiticia (Bull. ex Fr.) Sing. (6)

BOLBITIUS Fr.

B. vitellinus (Pers. ex Fr.) Fr. (2, 3, 6)

BOLETUS Dill. ex Fr. em. Rea

B. badius Fr. (4, 6, 9, 10)
B. chrysenteron Bull. ex St. Amans (4, 6, 9, 10, 11)
B. edulis Bull. ex Fr. (4, 6)
B. elegans Schum. ex Fr. (4, 6, 10)
B. erythropus (Fr. ex Fr.) Secr. (4)
B. granulatus L. ex Fr. (4, 6)
B. luridus Schaeff. ex Fr. (4, 6)
B. luteus L. ex Fr. (4)
B. piperatus Bull. ex Fr. (6)
B. pruinatus Fr. ex Hök (4)
B. rubellus Krombh. (9)
B. scaber Bull. ex Fr. (4, 6, 10)
B. subtomentosus L. ex Fr. (4, 6, 9, 10)
B. testaceoscaber Secr. (6, 9)
B. variegatus Sow. ex Fr. (4)

CANTHARELLULA Sing.

C. cyathiformis (Bull. ex Fr.) Sing. (1, 4)
C. umbonata ((Gmelin) Fr.) Sing. (3)

CANTHARELLUS Adanson ex Fr.

C. amethysteus (Quél.) Sacc. (3)
C. cibarius Fr. (3, 6, 9, 10)
C. infundibuliformis (Scop.) Fr. (3)

CLITOCYBE (Fr.) Kummer

C. brumalis (Fr. ex Fr.) Quél. (1, 4, 6)
C. candicans (Pers. ex Fr.) Kummer (2, 4, 6)
C. cerussata (Fr.) Gillet (3)
C. clavipes (Pers. ex Fr.) Kummer (2, 6)
C. dealbata (Sow. ex Fr.) Kummer (1, 6)
C. ditopus (Fr. ex Fr.) Gillet (3, 6)
C. flaccida (Sow. ex Fr.) Kummer (2, 3)
C. fragrans (Sow. ex Fr.) Kummer (1, 4)
C. geoptropa (Bull. ex St. Amans) Quél. (1)
C. infundibuliformis (Schaeff. ex Weinm.) Quél. (1, 4, 6)
C. metachroa (Fr.) Kummer (3, 6)
C. nebularis (Batsch ex Fr.) Kummer (1, 11)
C. obsoleta (Batsch ex Fr.) Quél. (3)
C. odora (Bull. ex Fr.) Kummer (3)
C. phyllophila (Fr.) Kummer (1, 4, 6)
C. rivulosa (Pers. ex Fr.) Kummer (6, 9)
C. suaveolens (Schum. ex Fr.) Kummer (9)
C. vibecina (Fr.) Quél. (11)

CLITOPILUS (Fr.) Kummer

C. prunulus (Scop. ex Fr.) Kummer (2, 3)

COLLYBIA (Fr.) Kummer

Sub-genus: Collybia

C. butyracea (Bull. ex Fr.) Kummer 1, 4, 6)
C. cirrhata (Schum. ex Fr.) Kummer (3)
C. confluens (Pers. ex Fr.) Kummer (1, 4, 6, 9, 11)
C. dryophila (Bull. ex Fr.) Kummer (1, 4, 5, 6)
C. fusipes (Bull. ex Fr.) Quél. (3, 5, 6, 10)
C. luteifolia Gillet (5)
C. maculata (Alb. & Schw.) Kummer (1, 4, 6, 9, 10, 11)
C. peronata (Bolt. ex Fr.) Kummer (1, 4, 6)
C. tuberosa (Bull. ex Fr.) Kummer (1, 4, 6)

Sub-genus: Tephrophana (Fr.) Konrad & Maubl.

C. ambusta (Fr.) Quél. (1, 4, 6)
C. coracina (Fr.) Gillet (1, 4)
C. rancida (Fr.) Quél. (1)

CONOCYBE Fayod

C. tenera (Schaeff. ex Fr.) Kühn. (2, 4, 5, 6, 7, 9)
C. togularis (Bull. ex Fr.) Kühn. (2, 4, 6, 7, 11)

COPRINUS (Pers. ex Fr.) S. F. Gray

C. atramentarius (Bull. ex Fr.) Fr. (2, 4, 6, 9, 10, 11)
C. cinereus (Schaeff. ex Fr.) S. F. Gray (2, 6)
C. comatus (Müll. ex Fr.) S. F. Gray (2, 4, 6, 9)
C. disseminatus (Pers. ex Fr.) S. F. Gray (2, 5, 6, 9, 10)
C. ephemeroides (Bull. ex Fr.) Fr. (3)
C. ephemerus (Bull. ex Fr.) Fr. (2, 6)
C. filiformis Berk. & Br. (2)
C. hemerobius Fr. (3)
C. lagopus (Fr.) Fr. (2, 4)
C. macrocephalus (Berk.) Berk. (2)
C. micaceus (Bull. ex Fr.) Fr. (2, 4, 5, 6, 9. 10, 11)
C. niveus (Pers. ex Fr.) Fr. (2, 4, 6)
C. patouillardii Quél. apud Pat. (2, 4)
C. picaceus (Bull. ex Fr.) S. F. Gray (11)
C. plicatilis (Curt. ex Fr.) Fr. (2, 4, 5, 6, 9)
C. radians (Desm.) Fr. (5, 9)
C. radiatus (Bolt. ex Fr.) S. F. Gray (2, 4)
C. tigrinellus Boud. (2)

CORTINARIUS Fr.

Sub-genus Myxacium (Fr.) Fr.

C. causticus Fr. (3)
C. elatior Fr. (2, 4, 6)

Sub-genus Phlegmacium (Fr.) Fr.

C. praestans (Cordier) Sacc. (3)
C. purpurascens (Fr.) Fr. (2)

CORTINARIUS Fr.—*continued*

Sub-genus Sericeocybe P. D. Orton

C. anomalus (Fr. ex Fr.) Fr. (3)
C. caninus (Fr.) Fr. (2, 4, 6)
C. tabularis (Bull. ex Fr.) Fr. (6)

Sub-genus: Cortinarius

C. pholideus (Fr. ex Fr.) Fr. (2)
C. violaceus (L. ex Fr.) Fr. (2)

Sub-genus: Dermocybe (Fr.) Fr.

C. cinnamomeus (L. ex Fr.) Fr. (2, 3)
C. semisanguineus (Fr.) Gillet (3)

Sub-genus: Telamonia (Fr.) Fr.

C. armillatus (Fr. ex Fr.) Fr. (3)
C. brunneus (Pers. ex Fr.) Fr. (3)
C. castaneus (Bull. ex Fr.) Fr. (3)
C. decipiens (Pers. ex Fr.) Fr. (3)
C. glandicolor (F.) Fr. (3)
C. hemitrichus (Pers. ex Fr.) Fr. (3)
C. iliopodius (Bull. ex Fr.) Fr. (3)
C. leucopus (Bull. ex Fr.) Fr. (3)
C. saturninus (Fr.) Fr. (3)
C. uraceus Fr. (3)

The Sub-genera *Telamonia* (Fr.) Fr. and *Hydrocybe* were not separated by Dennis Orton and Hora in the *Check List*, pending further definition of the species contained therein (*ibid* p. 57). The species recorded in Derbyshire belonging to these two sub-genera have not therefore, been separated, but are together listed in alphabetical order.

CRATERELLUS Pers.

C. cornucopioides ((L.) Fr.) Pers. (3, 9)

CREPIDOTUS (Fr.) Kummer

C. luteolus (Lambotte) Sacc. (9)
C. mollis (Schaeff. ex Fr.) Kummer (2)
C. phillipsii (Berk. & Br.) Sacc. (2)
C. variabilis (Pers. ex Fr.) Kummer (2, 4, 6,9)

CRINIPELLIS Pat.

C. stipitarius (Fr.) Pat. (3)

CYSTODERMA Fayod

C. amianthinum ((Scop.) Fr.) Fayod (1, 4, 6)
C. carcharias (Pers. ex Secr.) Fayod (1, 4)
C. granulosum (Batsch ex Fr.) Fayod (1, 4)

DECONICA (W. G. Smith) Karst.

D. bullacea (Bull. ex Fr.) Karst. (2, 7)
D. coprophila (Bull. ex Fr.) Karst. (2, 4)
D. inquilina (Fr. ex Fr.) Romagn. (2, 4, 6, 9)
D. physaloides (Bull. ex Mérat) Karst. (3)

DERMOLOMA (Lange) Sing.

D. cuneifolium (Fr. ex Fr.) Sing. (1, 4, 6)

ENTOLOMA (Fr.) Kummer.

E. ameides (Berk. & Br.) Sacc. (2)
E. clypeatum (L. ex Fr.) Kummer (7)
E. costatum (Fr.) Kummer (2, 6)
E. jubatum (Fr.) Karst. (2, 4)
E. madidum (Fr.) Gillet (3)
E. nidorosum (Fr.) Quél. (2, 4)
E. porphyrophaeum (Fr.) Karst, (3, 9)
E. prunuloides (Fr.) Quél. (2, 4)
E. rhodopolium (Fr.) Kummer (6)

FLAMMULINA Karst.

F. velutipes (Curt. ex Fr.) Karst. (1, 4, 5, 9)

GALERINA Earle

G. badipes (Fr.) Kühn. (3)
G. camerina (Fr.) Kühn. (3)
G. cinctula P. D. Orton (11)
G. clavata (Vel.) Kühn. (9)
G. hypnorum (Schrank ex Fr.) Kühn. (2, 5, 6, 7, 9, 11)
G. mutabilis (Schaeff. ex Fr.) P. D. Orton (2, 4, 5, 6, 7, 9, 10)
G. mycenopsis (Fr. ex Fr.) Kühn. (6)
G. paludosa (Fr.) Kühn. (3, 6, 11)
G. sphagnorum (Pers. ex Fr.) Kühn. (11)
G. unicolor (Vahl ex Sommerf.) Sing. (2, 4, 5, 6, 7)

GOMPHIDIUS Fr.

G. glutinosus (Schaeff. ex Fr.) Fr. (2)
G. maculatus (Scop.) Fr. (2)
G. rutilus (Schaeff. ex Fr.) Lundell (3)

GYMNOPILUS Karst.

G. junonius (Fr.) P. D. Orton (2, 6, 9)
G. penetrans (Fr. ex Fr.) Murr. (9, 11)
G. sapineus (Fr.) Maire (2, 4, 6)

HEBELOMA (Fr.) Kummer

H. anthracophilum Maire (11)
H. crustuliniforme (Bull. ex St. Amans) Quél. (2, 4, 6)
H. fastibile (Pers. ex Fr.) Kummer (2, 4, 6)
H. hiemale Bres. (3)
H. mesophaeum (Pers.) Quél. (2, 4, 6)
H. sinapizans (Paulet ex Fr.) Gillet (2, 4)

HOHENBUEHELIA Schulzer apud Schulzer, Kanitz & Knapp

H. geogenia (DC. ex Fr.) Sing. (9)
H. reniformis (Meyer ex Fr.) Sing. (3)

HYGROPHOROPSIS (Schroeter apud Cohn) Maire apud Martin-Sans.

H. aurantiaca ((Von Wulfen) Fr.) Maire (1, 4, 6)

HYGROPHORUS Fr.

Sub-genus: Hygrophorus

H. chrysaspis Métrod (9)
H. chrysodon (Batsch ex Fr.) Fr. (2)
H. hypothejus (Fr. ex Fr.) Fr. (1, 4, 9)
H. nemoreus (Pers. ex Fr.) Fr. (3)

Sub-genus: Camarophyllus (Fr.) Fr.

H. atropunctus (Pers. ex Fr.) A. H. Smith & Hesler (3)
H. colemannianus Blox. apud Berk. & Br. (3)
H. niveus (Scop.) Fr. (1, 4, 6)
H. pratensis (Pers. ex Fr.) Fr. (1, 4, 6,9)
H. russocoriaceus Berk. & Miller (3, 6)
H. subradiatus (Schum. ex Secr.) Fr. (11)
H. virgineus (Wulf. ex Fr.) Fr. (1, 4, 6, 9, 10)

Sub-genus: Hygrocybe (Fr.) Fr.

H. aurantiosplendens (Haller) P. D. Orton (9)
H. brevispora (F. H. Møller) P. D. Orton (9)
H. calyptraeformis Berk. & Br. (1, 4, 9)
H. ceraceus (Wulf. ex Fr.) Fr. (1, 4, 6, 9)
H. chlorophanus (Fr.) Fr. (1, 4, 9)
H. clivalis (Fr.) Sacc. (6)
H. coccineus (Schaeff. ex Fr.) Fr. (1, 4, 6, 9)
H. conicus (Scop. ex Fr.) Fr. (1, 4, 6, 9)
H. fornicatus Fr. (9)
H. laetus (Pers. ex Fr.) Fr. (1, 4, 6, 9, 11)
H. lepidopus Rea (9)
H. miniatus (Fr.) Fr. (1, 4, 6)
H. mollis (Berk. & Br.) Kauffm. (9)
H. nitratus (Pers. ex Pers.) Fr. (1, 4)
H. obrusseus (Fr.) Fr. (1, 4)
H. ovinus (Bull. ex Fr.) Fr. (1, 4, 6)
H. psittacinus (Schaeff. ex Fr.) Fr. (1, 4, 6, 9)
H. puniceus (Fr.) Fr. (1, 4, 9)
H. quietus Kühn. (9)
H. reai Maire (3, 6)
H. sciophanoides Rea (3)
H. spadiceus (Scop. ex Fr.) Fr. (1)
H. subminutulus (Murr.) P. D. Orton (9)
H. strangulatus P. D. Orton (10, 11)
H. turundus (Fr. ex Fr.) Fr. (3)
H. unguinosus (Fr.) Fr. (1, 4, 9)
H. vitellinus Fr. (3)

HYPHOLOMA Fr. Kummer em. Kühn.

H. capnoides (Fr. ex Fr.) Kummer (2, 4, 6, 11)
H. elongatum (Pers. ex Fr.) Ricken (9, 11)
H. epixanthum (Fr.) Quél. (2, 4, 5, 6)
H. fasciculare (Huds. ex Fr.) Kummer (2, 4, 5, 6, 7, 9, 10, 11)
H. marginatum (Pers. ex Fr.) Schroeter apud Cohn (2, 4, 11)
H. subericaeum (Fr.) Kühn. (3)
H. sublateritium (Fr.) Quél. (2, 7, 10, 11)
H. udum (Pers. ex Fr.) Kühn. (2, 6)

INOCYBE (Fr.) Fr.

Sub-genus: Inocybe

I. bongardii (Weinm.) Quél. (2, 9)
I. cincinnata (Fr.) Quél. (3, 6)
I. eutheles (Berk. & Br.) Quél. (2, 6)
I. fastigiata (Schaeff. ex Fr.) Quél. (3, 6)
I. flocculosa (Berk.) Sacc. (2)
I. geophylla (Sow. ex Fr.) Kummer (2, 6)
I. godeyi Gillet (3)
I. haemacta (Berk. & Cooke) Sacc. (3)
I. hystrix (Fr.) Karst. (3)
I. maculata Boud. (9)
I. obscura (Pers. ex Pers.) Gillet (6)
I. pusio Karst. (11)
I. pyriodora (Pers. ex Fr.) Kummer (6)

INOCYBE (Fr.) Fr.—*continued*

Sub-genus: Clypeus (Britz.) J. Lange

I. asterospora Quél. (2, 3, 6)
I. napipes J. Lange (9)
I. petiginosa (Fr. ex Fr.) Quél. (3)
I. praetervisa Quél. (3)
I. proximella Karst. (6)
I. umbrina Bres. (11)

LACCARIA Berk & Br.

L. amethystea (Bull. ex Mérat) Murrill (1, 4)
L. laccata (Scop. ex Fr.) Cooke (6, 9, 10)
L. proxima (Boud.) Pat. (3)

LACRYMARIA Pat.

L. pyrotricha (Holmskjold ex Fr.) Konrad & Maubl. (3, 6, 9)
L. velutina (Pers. ex Fr.) Konrad & Maubl. (4, 6, 9, 10)

LACTARIUS DC. ex S. F. Gray

L. blennius (Fr. ex Fr.) Fr. (2, 4, 6, 9)
L. camphoratus (Bull. ex Fr.) Fr. (9)
L. deliciosus (L. ex Fr.) S. F. Gray (1, 4)
L. flexuosus (Pers. ex Fr.) S. F. Gray (3)
L. fluens Boud. (3, 4)
L. fuliginosus (Fr.) Fr. (3, 6)
L. fulvissimus Romagn. (10)
L. glaucescens Crossland (1)
L. glyciosmus (Fr. ex Fr.) Fr. (1, 4, 6)
L. insulsus (Fr.) Fr. (1)
L. mitissimus (Fr.) Fr. (1, 4, 6)
L. pallidus (Pers. ex Fr.) Fr. (3, 9)
L. piperatus (Scop. ex Fr.) S. F. Gray (1, 4)
L. pubescens (Fr. ex Krombh.) Fr. (3, 6)
L. pyrogalus (Bull. ex Fr.) Fr. (1)
L. quietus (Fr.) Fr. (1, 4, 6, 9)
L. rufus (Scop. ex Fr.) Fr. (1, 4, 6, 10)
L. serifluus (DC. ex Fr.) Fr. (3, 6)
L. spinulosus Quél. (2)
L. subdulcis (Pers. ex Fr.) S. F. Gray (6, 9, 10, 11)
L. trivialis (Fr. ex Fr.) Fr. (3)
L. turpis (Weinm.) Fr. (1, 4, 6, 10)
L. vellereus (Fr.) Fr. (3)
L. vietus (Fr.) Fr. (2, 4)
L. volemus (Fr.) Fr. (1, 4)

LENTINELLUS Karst.

L. cochleatus (Pers. ex Fr.) Karst. (2, 6)

LENTINUS Fr. em. Sing.

L. lepideus (Fr. ex Fr.) Fr. (2)

LEPIOTA (Pers. ex Fr.) S. F. Gray

L. cristata (Fr.) Kummer (1, 4, 6, 9)
L. excoriata (Schaeff. ex Fr.) Kummer (1, 6)
L. friesii (Lasch) Quél. (1, 2, 4)
L. mastoidea (Fr.) Kummer (3)
L. procera (Scop. ex Fr.) S. F. Gray (1, 4, 6)
L. rhacodes (Vitt.) Quél. (1, 6)
L. sistrata (Fr.) Quél. (1, 4)

LEPISTA (Fr.) W. G. Smith

L. luscina (Fr. ex Fr.) Sing. (1, 4, 9)
L. nuda (Bull. ex Fr.) Cooke (1, 4, 6, 10)
L. saeva (Fr.) P. D. Orton (4)
L. sordida (Fr.) Sing. (1)

LEPTOGLOSSUM Karst. em. Ricken

L. muscigenum ((Bull.) Fr.) Karst. (3)
L. retirugе ((Bull.) Fr.) Kühn & Romagn. (2)

LEPTONIA (Fr.) Kummer

L. chalybaea (Pers. ex Fr.) Kummer (3)
L. exilis (Fr. ex Fr.) P. D. Orton (3)
L. griseocyanea (Fr. ex Fr.) P. D. Orton (2, 4)
L. griseorubella (Lasch) P. D. Orton (2, 6)
L. incarna (Fr.) Gillet (2)
L. lampropus (Fr. ex Fr.) Quél. (2, 4, 6)
L. lappula (Fr.) Quél. (3)
L. lazulina (Fr.) Quél. (2, 9)
L. placida (Fr. ex Fr.) Kummer (3)
L. pulverea (Rea) P. D. Orton (3)
L. reaae Maire (3)
L. rosea Longyear (3)
L. sericella (Fr. ex Fr.) Barbier (2, 4)
L. serrulata (Pers. ex Fr.) Kummer (2, 4)

LEUCOPAXILLUS Boursier

L. giganteus (Sow. ex Fr.) Sing. (3, 9, 10)

LYOPHYLLUM Karst. em. Kühn. non Sing.

L. connatum (Schum. ex Fr.) Sing. (3, 6)
L. decastes (Fr. ex Fr.) Sing. (3)
L. fumosum (Pers. ex Fr.) P. D. Orton (6)
L. loricatum (Fr.) Kühn. (9)

MACROCYSTIDIA Heim

M. cucumis (Pers. ex Fr.) Heim (3, 6, 9)

MARASMIUS Fr.

M. androsaceus (L. ex Fr.) Fr. (1, 4, 6)
M. epiphyllus (Pers. ex Fr.) Fr. (1, 4)
M. graminum (Libert.) Berk. (1)
M. oreades (Bolt. ex Fr,) Fr. (1, 4, 6, 9)
M. ramealis (Bull. ex Fr.) Fr. (1, 4, 6)
M. rotula (Scop. ex Fr.) Fr. (1, 4, 6)
M. undatus (Berk.) Fr. (1, 6)

MELANOLEUCA Pat.

M. grammopodia (Bull. ex Fr.) Pat. (3)
M. humilis (Pers. ex Fr.) Pat. (1)
M. melaleuca (Pers. ex Fr.) Murr. (1, 4, 9)

MELANOPHYLLUM Vel.

M. echinatum (Roth ex Fr.) Sing. (2)

MICROMPHALE Nees ex S. F. Gray em. Sing.

M. foetidum ((Sow.) Fr.) Sing. (3)

MYCENA (Pers. ex Fr.) S. F. Gray em. Kuhn.

M. acicula (Schaeff. ex Fr.) Kummer (1, 4)
M. adonis (Bull. ex Fr.) S. F. Gray (2)
M. aetites (Fr.) Quél. (1, 4)
M. alcalina (Fr. ex Fr.) Kummer (1, 4)
M. amicta (Fr.) Quél. (1, 4, 6)
M. atrocyanea (Batsch ex Fr.) Gillet (3)
M. aurantiomarginata (Fr.) Quél. (3)
M. bulbosa (Cejp) Kühn. (9)
M. capillaris (Schum. ex Fr.) Kummer (1)
M. chlorantha (Fr. ex Fr.) Kummer (6, 9)
M. corticola (Pers. ex Fr.) S. F. Gray (6)
M. epipterygia (Scop. ex Fr.) S. F. Gray (1, 4, 6)
M. fibula (Bull. ex. Fr) Kühn. (1, 4, 9)
M. filopes (Bull. ex Fr.) Kummer (1, 4)
M. flavo-alba (Fr.) Quél. (1, 4)
M. galericulata (Scop. ex Fr.) S. F. Gray (1, 4, 5, 6, 9, 11)
M. galopus (Pers. ex Fr.) Kummer (9)
M. galopus var. *candida* Lange (6)
M. gypsea (Fr.) Quél. (2)
M. lactea (Pers. ex Fr.) Kummer (1, 4, 6)
M. leptocephala (Pers. ex Fr.) Gillet (3)
M. leucogala (Cooke) Sacc. (1, 4, 6)
M. metata (Fr. ex Fr.) Kummer (1, 4, 6)
M. olivaceomarginata (Massee & Cooke) Massee (1, 6)
M. pelliculosa (Fr.) Quél. (6)
M. polygramma (Bull. ex Fr.) S. F. Gray 1, 4, 6)
M. pullata (Berk. & Cooke) Sacc. (1, 4)
M. pura (Pers. ex Fr.) Kummer (1, 4, 6)
M. rorida (Scop. ex Fr.) Quél. (6)
M. rubromarginata (Fr. ex Fr.) Kummer (3)
M. sanguinolenta (Alb. & Schw. ex Fr.) Kummer (1, 4, 6)
M. speirea (Fr. ex Fr.) Gillet (2, 9)
M. stylobates (Pers. ex Fr.) Kummer (2, 6)
M. swartzii (Fr. ex Fr.) A. H. Smith (4, 6)
M. tenerrima (Berk.) Sacc. (1, 5, 6)
M. viscosa (Secr.) Maire (9, 11)
M. vitilis (Fr.) Quél. (3, 6)

NAUCORIA (Fr.) Kummer

N. escharoides (Fr. ex Fr.)Kummer (3, 6)
N. scolecina (Fr.) Quél. (3, 11)

NOLANEA (Fr.) Kummer

N. infula (Fr.) Gillet (9)
N. papillata Bres. (3, 6)
N. sericea (Bull. ex Mérat) P. D. Orton (2, 4)
N. solstitialis (Fr.) P. D. Orton (2, 4)
N. staurospora Bres. (9)
N. versatilis (Fr.) Gillet (3)

OMPHALINA Quél.

O. allenii (Maire) P. D. Orton (3)
O. demissa (Fr.) Quél. (1)
O. ericetorum (Fr. ex Fr.) M. Lange (1, 4, 5, 6)
O. pyxidata (Bull. ex Fr.) Quél. (3)
O. rustica (Fr.) Quél. (3)
O. velutina (Quél.) Quél. (6)

OUDEMANSIELLA Speg.

O. mucida (Schrader ex Fr.) Höhnel (1)
O. radicata (Relhan ex Fr.) Sing. (1, 4, 6, 9, 10)

PANAEOLINA Maire

P. foenisecii (Pers. ex Fr.) Maire (2, 4, 5, 6, 7)

PANAEOLUS (Fr.) Quél.

P. acuminatus (Schaeff. ex Secr.) Quél. (9)
P. campanulatus (Bull. ex. Fr.) Quél. (2, 4, 6)
P. fimicola (Fr.) Quél. (2)
P. papilionaceus (Bull. ex Fr.) Quél. (2, 4, 6, 9)
P. phalaenarum (Fr.) Quél. (2)
P. retirugis (Fr.) Gillet (2, 4, 11)
P. rickenii Hora (11)
P. semiovatus (Sow. ex Fr.) Lundell (2, 4, 6, 9)
P. sphinctrinus (Fr.) Quél. (6, 7, 9)

PANELLUS Karst.

P. stypticus (Bull. ex Fr.) Karst. (1, 5, 6)

PANUS Fr. em. Sing.

P. torulosus (Pers. ex Fr.) Fr. (1, 3, 4)

PAXILLUS Fr.

P. involutus (Batsch. ex Fr.) Fr. (2, 4, 6, 10)
P. panuoides (Fr. ex Fr.) Fr. (2, 6, 9)

PHOLIOTA (Fr.) Kummer em. Sing.

P. adiposa (Fr.) Kummer (3)
P. alnicola (Fr.) Sing. (2, 11)
P. aurivella (Batsch ex Fr.) Kummer (2, 11)
P. carbonaria (Fr. ex Fr.) Sing. (2, 4)
P. gummosa (Lasch) Sing. (9)
P. lenta (Pers. ex Fr.) Sing. (2, 4, 6)
P. lucifera (Lasch) Quel. (9)
P. muelleri (Fr.) P. D. Orton (11)
P. ochrochlora (Fr.) P. D. Orton (3)
P. squarrosa (Müller ex Fr.) Kummer (2, 4, 10)
P. subsquarrosa (Fr.) Quél. (6)

PLEUROTELLUS Fayod em. Konrad & Maubl.

P. acerosus (Fr.) Konrad & Maubl. (3)

PLEUROTUS (Fr.) Kummer s. restr.

P. cornucopiae (Paulet ex Pers.) Rolland (10)
P. dryinus (Pers. ex Fr.) Kummer (2)
P. euosmus (Berk. apud Hussey) Sacc. (1)
P. lignatilis (Pers. ex Fr.) Kummer (3)
P. ostreatus (Jacquin ex Fr.) Kummer (1, 4)
P. ulmarius (Bull. ex Fr.)Kummer (6)

PLUTEUS Fr.

P. cervinus (Schaeff. ex Fr.) Kummer (2, 4, 5, 6, 7, 9, 10, 11)
P. lutescens (Fr.) Bres. (3)
P. phlebophorus (Ditmar ex Fr.) Kummer (2, 4)

PSATHYRELLA (Fr.) Quél. em. Kühn.

P. atomata (Fr.) Quél. (2, 4, 5, 6)
P. conopilea (Fr.) Pearson & Dennis (2, 6)
P. corrugis (Pers. ex Fr.) Konrad & Maubl. (2, 4, 5, 6)
P. gossypina (Bull. ex Fr.) Pearson & Dennis (9)
P. gracilis (Fr.) Quél. (2, 4, 6, 9)
P. hydrophila (Bull. ex Mérat) Maire (2, 4, 9, 11)
P. leucotephra (Berk. & Br.) P. D. Orton (6)
P. microrhiza (Lasch) Konrad & Maubl. (2)
P. obtusata (Fr.) A. H. Smith (2)
P. pennata (Fr.) Pearson & Dennis (2, 4)
P. sarcocephala (Fr. ex Fr.) Sing. (3)
P. spadicea (Schaeff. ex Fr.) Sing. (2)
P. spadiceogrisea (Fr.) Maire (2, 4, 10)

PSEUDOHIATULA (Sing.) Sing.

P. esculenta (Wulf. ex Fr.) Sing. (2, 7)

PSILOCYBE (Fr.) Kummer s. restr.

P. semilanceata (Fr. ex Secr.) Kummer (2, 6, 9)
P. semilanceata var. caerulescens (Cooke) Sacc. (4)

RIPARTITES Karst.

R. tricholoma (Alb. & Schw. ex Fr.) Karst. (10)

RUSSULA (Pers. ex Fr.) S. F. Gray

R. aeruginea Lindblad ex Fr. (9)
R. adusta (Pers. ex Fr.) Fr. (1, 6)
R. alutacea (Pers. ex Fr.) Fr. (1)
R. atropurpurea (Krombh.) Britz. (6, 9)
R. azurea Bres. (3)
R. betularum Hora (11)
R. cyanoxantha (Schaeff. ex Secr.) Fr. (1, 4, 6, 9, 11)
R. densifolia (Secr.) Gillet (3)
R. emetica (Schaeff. ex Fr.) S. F. Gray (1, 6, 9)
R. farinipes Romell apud Britz. (9)
R. fellea (Fr.) Fr. (1, 4, 6, 9, 11)
R. foetens (Pers. ex Fr.) Fr. (1, 4, 6)
R. fragilis (Pers. ex Fr.) Fr. (1, 4, 6, 10)
R. grisea (Pers. ex Secr.) Fr. (3, 9)
R. integra (L.) Fr. (3)
R. lepida Fr. (1)
R. lutea (Huds. ex Fr.) S. F. Gray (6)
R. mairei Sing. (11)
R. nigricans (Bull. ex Mérat) Fr. (1, 4, 6, 9)
R. nitida (Pers. ex Fr.) Fr. (9)
R. ochroleuca (Pers. ex Secr.) Fr. (1, 4, 6, 9, 10, 11)
R. pectinata (Bull. ex St. Amans) Fr. (9)
R. puellaris Fr. (1, 4)
R. rubra ((Lam.) Fr.) Fr. (3)
R. sardonia Fr. (1, 4)
R. sororia (Fr.) Romell (1, 4)
R. vesca Fr. (1, 6)
R. veternosa Fr. (3)
R. virescens (Schaeff. ex Zantedschi) Fr. (1, 6)
R. xerampelina (Schaeff. ex Secr.) Fr. (3)

SCHIZOPHYLLUM Fr.

S. commune Fr. (11)

STROPHARIA (Fr.) Quél.

S. aeruginosa (Curt. ex Fr.) Quél. (2, 4, 5, 6, 9, 10)
S. albocyanea (Desm.) Quél. (2, 4, 6)
S. coronilla (Bull. ex Fr.) Quél. (2)
S. inuncta (Fr.) Quél. (2, 4, 6)
S. merdaria (Fr.) Quél. (2, 6)
S. semiglobata (Batsch. ex Fr.) Quél. (2, 4, 5, 6, 7, 9, 10, 11)
S. squamosa (Pers. ex Fr.) Quél. (2, 4, 6, 9, 11)
S. thrausta (Schulzer apud Kalchbr.) Sacc. (3)

TRICHOLOMA (Fr.) Kummer

T. argyraceum (Bull. ex St. Amans) Gillet (4, 6)
T. carneum (Bull. ex Fr.) Kummer (1, 4, 6)
T. columbetta (Fr.) Kummer (3)
T. gambosum (Fr.) Kummer (1, 5)
T. imbricatum (Fr. ex Fr.) Kummer (1, 6)
T. portentosum (Fr.) Quél. (3)
T. saponaceum (Fr.) Kummer (3, 9)
T. terreum (Schaeff. ex Fr.) Kummer (1, 4, 6, 9)
T. ustale (Fr. ex Fr.) Kummer (1, 4)
T. vaccinum (Pers. ex Fr.) Kummer (1)
T. virgatum (Fr. ex Fr.) Kummer (3)

TRICHOLOMOPSIS Sing.

T. platyphylla (Pers. ex Fr.) Sing. (1, 4, 6)
T. rutilans (Schaeff. ex Fr.) Sing. (1, 4, 6, 9, 10)

TUBARIA (W. B. Smith) Gillet

T. autochthona (Berk. & Br.) Sacc. (9)
T. conspersa (Pers. ex Fr.) Fayod (2)
T. furfuracea (Pers. ex Fr.) Gillet (2, 4, 5, 6, 9)

VOLVARIELLA Speg.

V. parvula (Weinm.) P. D. Orton (2)
V. volvacea (Bull. ex Fr.) Sing. (3)

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Queen Rearing, by **Harry H. Laidlaw, Jr.,** and **J. E. Eckert.** Pp. 165, 1 plate and 63 figures in black and white. University of California Press: agents, Cambridge University Press, 1963. 40/-.

The desire of beekeepers is to have colonies that produce the maximum amount of honey and are at the same time easy to manage. As man has improved other domesticated animals, so he has improved bee strains. The authors show how the beekeeper can do this. The natural production of queens and their fertilizing is described to show how the beekeeper can intervene in the cycle of the hive to produce more queens. This is relatively straightforward and queens are produced commercially in America on a large scale. Fertilization is more difficult. The honeybee will only mate on the wing and it is useless to confine a virgin queen with a drone and hope for a mating. If the queens fly freely they will mate with whatever drones are available. The solution, of course, is artificial insemination. This is a difficult and highly technical operation and quite beyond the scope of the ordinary beekeeper.

The processes are clearly explained and the illustrations pertinent. While primarily intended for those engaged in large scale commercial production of honey it should stimulate the enterprising beekeeper.

J.H.F.

Journey Among Men, by **Jock Marshall** and **Russell Drysdale.** Pp. 206 with numerous drawings by Russell Drysdale and end-paper maps. Hodder and Stoughton, 1962. 35/-.

The journey was round Australia in land rovers and the purpose was to observe and collect reptiles, birds and mammals. But the authors soon found themselves ' as much interested in people as in animals.' The result is an uninhibited account which centres largely round the stockmen, desert tribesfolk and aborigines, pub and store-keepers, pearl divers and other more or less picturesque characters from the coastal towns and semi-desert hinterland. There is a fairly generous sprinkling of natural history mixed with the beer and blasphemy, for those who like their natural history that way, and the brashness of the style will provoke smiles or shudders according to taste. Russell Drysdale's drawings are distinctive.

W.A.S.

BRYOLOGICAL NOTES: UNPUBLISHED LOCALITIES FOR *SELIGERIA* spp. COLLECTED BY THE LATE DR. T. H. B. BEDFORD

G. A. SHAW

THE late Dr. T. H. B. Bedford devoted much time to the investigation of the distribution of species of *Seligeria* in the north of England, and in *The Naturalist*, 1938, he published a number of records. Since Dr. Bedford's death in December, 1961, his collection of mosses has come to my notice, and the following *Seligeria* records are additional to those which appeared in 1938. The few which are not attributable to Dr. Bedford are followed by the initials of the finder.

Seligeria trifaria (Brid.) Lindb.

V.C. 64 Churn Milk Hole, Penyghent: Cold Cote, Clapham: pot holes on W. slope of Penyghent.

V.C. 65 Jingling Hole, Hell Gill, Mallerstang: High Dike, Mallerstang: Buttertubs: pot holes N. of Shaking Moss: R. Rawthey near Needlehouse Gill. Mill Gill, Askrigg; G.A.S.

Seligeria acutifolia Lindb. var. *longiseta* Lindb.

V.C. 64 Douk Ghyll Sear, Horton-in-Ribblesdale: near Claypits Plantation, Langeliffe: Conistone Dib: near Water Houses, Malham Tarn: Kail Hill, Burnsall: Oughtershaw Side: Cray Gill slope of Buckden Pike: Deepdale near Yockenthwaite: roadside (Heber side area) from Halton Gill towards Stainforth: Ribblehead: pot holes W. slope of Penyghent: near Souther Scales: Catrigg Force, Stainforth; Cowside Beck, Arncliffe: Greenhow Hill. Pot holes, Old Cote Moor near Kettlewell; G.A.S. Kilnsey Crag; J.A.

V.C. 65 E. slope of Dodd Fell: W. slope of Dodd Fell: Buttertubs: pot holes N. of Shaking Moss: Garsdale slope of Widdale Fell.

V.C. 69 The Coves, Mallerstang: Stennerskeugh Clouds.

Seligeria doniana (Sm.) C.M.

V.C. 64 S. slope of Dodd Fell; Oughtershaw Side; pot holes W. slope of Penyghent: Catrigg Force: Conistone Dib.

V.C. 65 Fleet Moss: Buttertubs: pot holes N. of Shaking Moss: E. and W. slopes of Dodd Fell: High Dike, Mallerstang. Millfield Gill, Askrigg; G.A.S.

V.C. 66 Bollihope Burn: Burtree Fell (Weardale-Allenheads road).

V.C. 67 Swinhope Burn near Spartylea: limestone exposure S. of Roman Wall near Borcovicus: Whitelee, Ayle Burn.

Seligeria pusilla (Hedw.) B. & S.

V.C. 60 Leek Fell.

V.C. 64 S. slope of Dodd Fell: Oughtershaw Side: pot holes W. slope of Penyghent: near Southerscales. Fountains Fell; G.A.S. Ireby Beek near Masongill; G.A.S.

V.C. 65 Jingling Hole, Hell Gill, Mallerstang: Hell Gill beck; W. slope of Dodd Fell: Whernside: Buttertubs: pot holes N. of Shaking Moss: Penny Farm Gill.

V.C. 66 Bollihope Burn.

V.C. 67 Whitelee, Ayle Burn.

V.C. 69 The Coves, Mallerstang: Hell Gill Beck.

Seligeria recurvata (Hedw.) B. & S.

V.C. 64 Norber Sike; G.A.S. Keeker's Gill, Austwick; G.A.S. Ravensgill, Pateley Bridge; G.A.S.; Crummackdale; G.A.S.

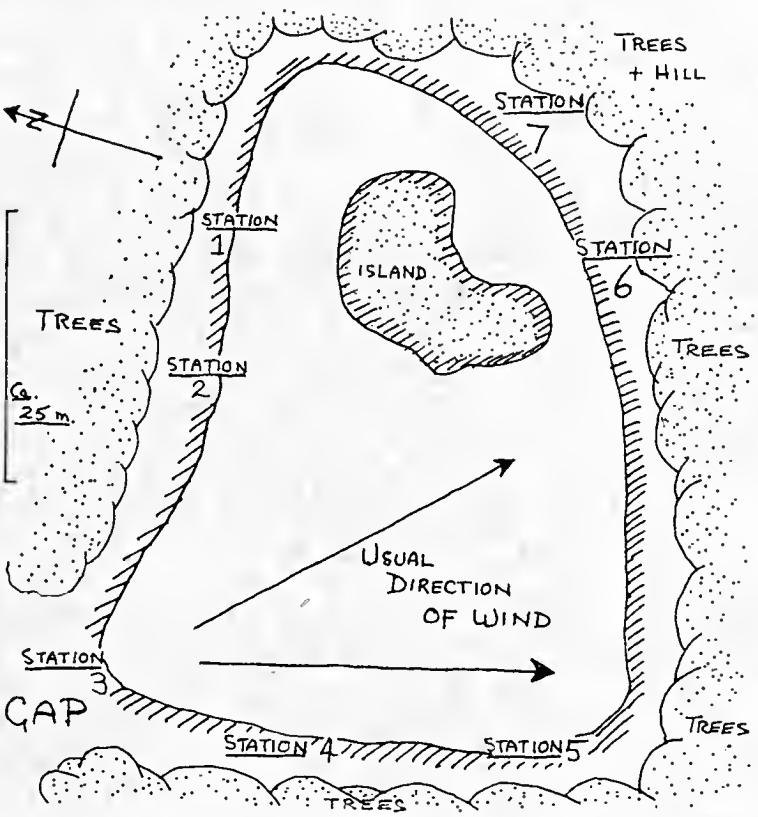
V.C. 65 Between Dent station and Shaking Moss.

THE SURFACE TEMPERATURE VARIATIONS OF A SMALL MIDDLESEX POND

DAVID MARLBOROUGH

Introduction. Much stillwater ecology has been concerned with large bodies of water: small ponds have had rather less than their fair share of attention. The author has taken a series of surface water temperature measurements in such a small pond, over a period of six years. Initially their taking was incidental, but nevertheless they form a fairly coherent record.

The pond was Moat Mount Open Space, Mill Hill, near London (One Inch Ordinance Survey, Sheet 160, Grid Reference 213941). It was almost completely surrounded by trees (with only one small gap: see Map), and so sheltered from all but the strongest winds. This gap tended to channel the wind; thus any wind, regardless of where it originated, generally blew across the water from the direction



Map of pond and surroundings at Moat Mount Open Space, showing temperature measurement stations and usual wind direction.

of the gap. The pond was about an acre in extent, and ½-2 metres deep. From May to September it was up to 80% covered with semi-emergent *Potomogeton crispus* L. By the criteria of Macan and Worthington (1951) and Chapman (1931) this was a typical pond; it was shallow enough to sustain rooted *P. crispus* over all its surface, the water did not layer with a stable thermocline, and the area was too small for the banks to be eroded by wind-caused waves.

Method. As stated above, the temperatures were first taken incidentally, but they soon grew into a regular record. Both a mercury- and an alcohol-in-glass Fahrenheit thermometer were used, with an error in each of ±0·5°F. Most of this error was due to warming or cooling while removing the thermometer from the water to read it. As the results were converted into degrees Celsius, to three significant figures, this error is relatively less.

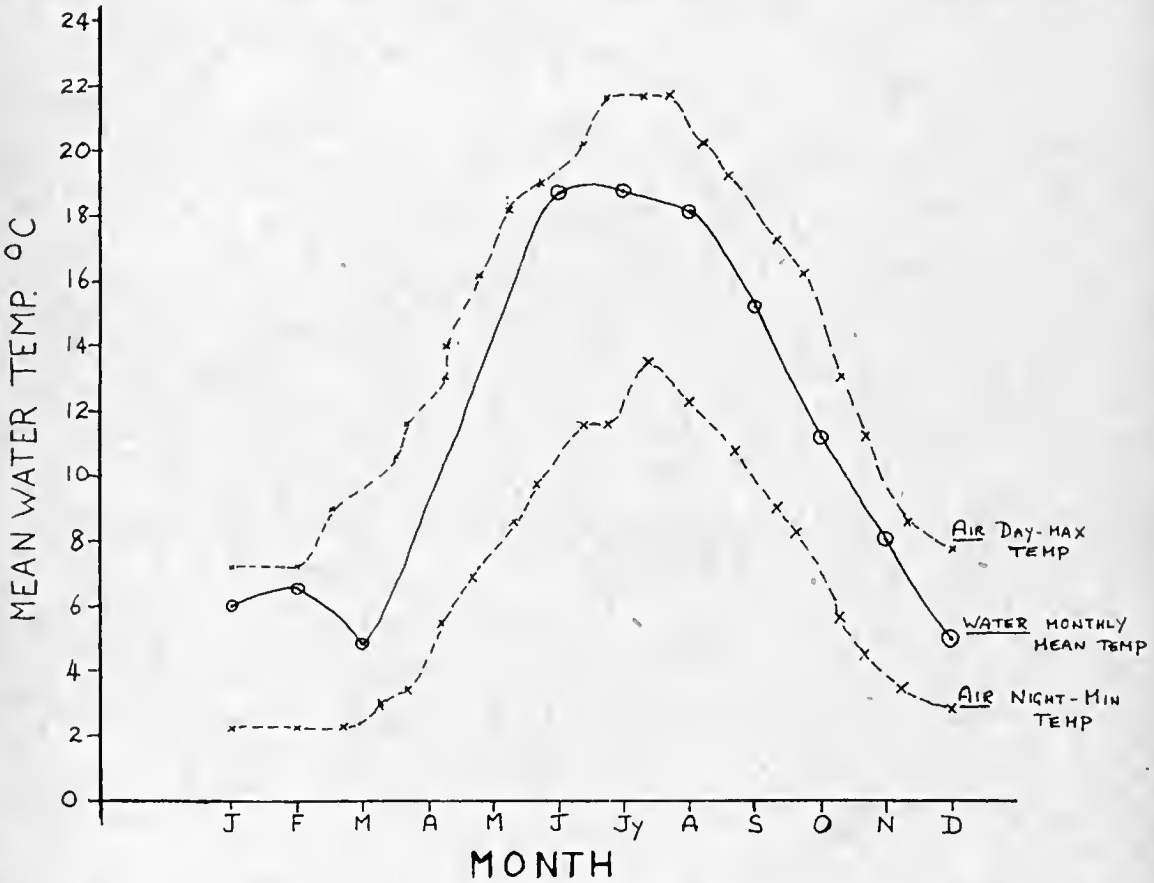
Only surface temperatures were taken; tests showed that the differences between those at the surface and at various depths were so slight that they were encompassed

by the limits of normal reading error. Welch (1952) claims that a very warm and distinct upper layer may be established in ponds during periods of summer calm, but this was never observed here. Surface temperatures were therefore taken as being sufficiently accurate for present purposes.

Temperatures were taken at the stations shown on the Map at all times of day and night, and in all months except April and May. In later analysis, this omission was seen to be regrettable, but it was originally due to the fishing close season of March 15th to June 15th inclusive. Many visits were made to the water in this period, but not with a thermometer.

When ice was on the water, temperatures were taken at the surface of natural ice-free patches, i.e. without breaking the ice to put the thermometer into the water.

Observations and Discussions. All records of water temperature taken between August 20th, 1956, and March 17th, 1962, were analysed. The highest



Graph of mean monthly water temperatures (solid line), with mean air temperatures (broken lines) inserted *after Marshall.*

recorded temperature was 75°F. (24°C.), and the lowest was 36°F. (2·2°C.) with ice cover (June 7th, 1959, and March 4th, 1962 respectively).

To present an overall picture, the mean of each day's set of recordings at different stations and/or different times of day were calculated; and monthly means (Graph), as well as 5-day averages (Table 1), were deduced from these.

It should be mentioned that March and June records are only for the first and second halves respectively of these months (due again to the close season); and that there are fewer records in winter than in summer. However, many were taken in winter, and these on warmer days or in ice-free patches (*q.v.*). Therefore the winter temperatures may be unrepresentative, but they err on the side of being too high rather than too low. This accepted, it does not alter the conclusions drawn. For comparison, the mean monthly day-maximum and night-minimum air temperatures for the London area are drawn on the Graph also. These are after Marshall (1952), based on official records over the last century.

It will be seen at once that the curves are even approximately parallel only in summer and autumn. Some of this may be due to insufficient data causing more statistical scatter in the winter records.

In the period March to June, the low and fluctuating winter water temperature suddenly rises to a high summer temperature in the space of four months: it does not parallel either of the air temperature curves in this rapid rise. This may be contrasted with the three parallel traces in the autumn period when the temperatures are declining.

The graph also shows that mean water temperature bears a relation to both night-minimum and day-maximum air temperatures, for the former curve is *always* enclosed by the two latter. In spring, tree-enclosure must act as a radiation-loss preventer, so the temperature of the water rises to approximate the mean day-maximum air temperature. Enclosure to prevent heat loss is perhaps more effective in spring and summer because the deciduous trees surrounding the pond are then in leaf. The decline of water temperature in autumn coincides with leaf-fall; as heat is lost more readily, perhaps this is why the three curves are far more nearly parallel at this time.

The graph also shows a certain lag in the beginning of this rise, compared with the day-maximum air temperature. As temperature is one of the major physical factors of life, this apparent lag and rapid spring rise is bound to have an effect. This in fact is seen in the later spawning of fish, in later starting of heleoplankton cycles, and a delay in the growth of rooted *P. crispus*. The lag may be as much as three weeks behind similar developments in nearby non-enclosed ponds. Ice is still persistent in late March, yet by early May the vegetation is dense. Growth and the general resumption of activity must be very much accelerated in the months between. The lag and subsequent extra-rapid rise has been noted by Welch (1952) in the U.S., who states that tree-enclosed ponds do not lose their ice until up to three weeks after their unenclosed neighbours. The lags of this and his waters agree quite closely. However, the effect of tree enclosure in our case is not confined to delaying developments otherwise under way elsewhere. Enclosure also appears to accelerate the spring rise when it does occur.

* * * * *

The monthly figures have been broken down into five-day-period averages over the year, to give an indication of short-term temperature fluctuations. This can be compared with data given in Marshall (1952) for the same periods.

Changes of water temperature at single stations over a day were also studied, but the results offer less chance to generalise. It is specious, in the author's opinion, to discuss quantitative daily water temperature changes in detail, as they depend so much on ephemeral weather conditions. Generally, water temperature follows that of the air, but can rapidly be altered by rain, wind, or hot sun. To attempt to make a detailed analysis of changes over most of the days, though data is not lacking, is fruitless unless a full meteorological record of *all* changes in the micro-climate around the pond is available.

Temperature change in the pond was not rapid, and there was no build-up of heat except in spring; the water never rose above the extent air temperature, unless heat loss had not kept pace with a sudden fall. Whatever the fluctuations of air temperature, the tendency was always toward an equilibrium of heat exchange. The water temperature shows its dependence on both maximum and minimum air temperatures by its curve always lying between theirs on the graph. This is especially evident when the three curves run parallel in autumn. The maximum range of water temperature observed over a 24-hour period was only 3°C. (June 16th, 1957), and the maximum range at any given station is usually only in the order of ½-2°C. The greatest rate of temperature change encountered was 1°C. per hour (Station 5; July 25th, 1958). Consequently the diurnal stability of temperature is most marked; in shallower and more open ponds nearby, change is more rapid (incomplete data), with perhaps profound effects on biological rhythms.

The slow rate of change in Moat Mount can only be correlated with enclosure and/or depth. As the latter is quite small, the former must be operative. It is *very* rare on the coldest and clearest of summer nights for the temperature to fall 1½-2°C. Warming-up is usually faster and of greater magnitude. If daily temperatures rose more quickly and ever higher, and cooling is comparatively slower, the very

differences in rate are sufficient to account for the steep rise in water temperature in spring.

Thus the effect of enclosure is not limited to delaying changes, and does not retard all heat exchanges. In this pond, it definitely seems to inhibit heat loss at night. The microclimate round the pond on a clear summer night is quite distinct from that beyond the surrounding trees. The author has many times noted a distinct drop in tempeature as he leaves the lakeside on such occasions. This is retarded, but warming by day is not, especially when the sun has risen above the surrounding trees. The rapid rise in air temperature is most noticeable then. That the amount of leaf cover is also important may be inferred from the figures given, and also from direct personal observation.

* * * * *

Besides data on temperature changes in longer or shorter periods of time, the record also furnished a certain number of observations on the simultaneous differences in temperature at different stations. Many such measurements have been made at

TABLE 1

MEAN WATER TEMPERATURES OVER 5-DAY PERIODS.
(Comparable with those for air temperatures given in Marshall.)

Month	Days of Month. (Temperatures in °C.)					
	1–5	6–10	11–15	16–20	21–25	26–30 (31)
January	5·3	6·0	—	—	—	—
February	—	6·4	—	—	—	—
March	4·0	—	—	4·4	—	—
April	—	—	—	—	—	—
May	—	—	—	—	—	—
June	—	18·9	18·0	20·0	19·4	19·8
July	21·2	19·0	18·5	17·6	18·3	18·3
August	19·4	18·3	18·3	17·2	17·0	17·4
September	17·5	13·9	16·4	—	16·1	13·3
October	—	11·4	11·7	—	—	10·6
November	11·1	—	—	5·6	8·3	—
December	—	4·2	4·2	—	—	5·1

different stations and different times of year. Table 2 shows which stations recorded coldest and warmest temperatures at times when several simultaneous measurements were made.

It will be seen at once that Station 3 was usually the coolest. This was no coincidence; the wind coming through the gap in the trees strikes here first. When other stations (especially Station 5) were coolest, the wind was strong enough to sweep across the water from another direction, or, in winter, ice prevented the wind cooling the water directly. The difference between stations on windward and leeward sides in summer was ½-1 °C., in a wind sweep of approximately 50 metres. This difference in temperature was evident despite dense masses of *P. crispus* lying on the water, otherwise obstructing water currents or breaking up ripples; so it was assumed to be a purely surface phenomenon.

The author believes that it is due to a heat loss gradient from one end of the wind sweep to another, perhaps because the transfer rate is altered by water-vapour saturation of the air nearest the water surface. If water vapour is picked up initially, then the heat loss is far greater than heat transfer without evaporation. Perhaps the thin layer of air nearest the water is saturated by the time it reaches

the leeward end. At all events, the phenomenon appears to be plainly due to surface heat exchange gradients, and not water currents in the body of the water. This has also been noticed in the Cheshire Meres (Dumbill pers. comm.).

These slight differences in water temperature have some effect on the biota—mostly upon the position of fish feeding areas—but it rarely assumes more than a marginal significance. However, it merits further and fuller study with permanently stationed and more sensitive instruments.

When the pond is covered with ice, Station 2 to Station 4 is usually free; this may be explained, partly by the sun warming the water by this bank more, partly by the wind hindering the formation of surface ice, and partly by the insulation of this area from heat loss by overhanging branches. Note that Station 3 is the sunniest

TABLE 2

WARMEST AND COOLEST STATIONS IN SIMULTANEOUS MEASUREMENTS.
(Numbers refer to Station numbers. See Map.)

Month	Number of Simultaneous Sets of Measurements	Stations	
		Warmest in Set	Coolest in Set
June	2	1	3
		1	3
July	2	1	3
		6	3
August	2	5	3
		5	3
September	1	7	3
December	3	3	5
		3	5
		3	5
January	2	3	5
		1	5

position; wind-cooling overrides any expected warming unless the surface is covered with ice, and by its mitigation reverses the situation.

There is also an ' island shadow ' effect in summer. With the wind from Station 3, the island forms a considerable windbreak, and the more or less isolated water behind it is not cooled so much. Thus, on a typical day, the water temperatures at Stations 3 and 5 were 16·0°C. and 16·5°C. respectively, while that at Station 7 was nearly 17°C. (September 5th, 1957, 7-15 p.m.).

All these effects are demonstrated by incidental and sporadic temperature readings, collected over a long period to form a fairly coherent record. Undoubtedly more significant and exact measurements could be made with better, permanent equipment, placed at the stations. Unfortunately the park surrounding the pond is much frequented, and instruments so placed are in danger of being tampered with. Nevertheless, it remains interesting in planning what can be done in better loci, and also regarding the effects of these temperature changes upon the biota of the pond, over the day, the season, and the year. It also demonstrates that shallow non-layered waters have a number of temperature variations, even in equable climates and sheltered locations.

1963 April-June

Conclusions

(a) The temperature of a small pond is a function of both day-maximum and night-minimum air temperatures, and tends to conform to the extant air temperature.
(b) Tree enclosure modifies exact conformity with the extant air temperature by reducing the rate of heat loss.
(c) Heat gain is not so affected by tree enclosure, except when the sun is low in the sky.
(d) The insulating effect of surrounding trees appears to be modified by the amount of foliage on them.
(e) Tree-sheltering causes a rapid rise in water temperature in spring, after a lag also caused by tree enclosure.
(f) This rapid rise is brought about by the lessening of heat losses as well as the increase of heat gains.
(g) Short-term temperature changes are limited and slow in a tree-enclosed pond, and diurnal variation is slight.
(h) The effect of a wind blowing across a small stretch of non-stratified water is to cool the parts it strikes first. Its cooling effect is mitigated as it crosses the water; this is presumed due to water vapour taken up in passage.

Summary. Water temperature variations of a small pond are discussed and measured from annual and daily viewpoints. The effects of tree enclosure and wind-cooling in particular are investigated.

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Acknowledgements. I would like to thank the authority controlling the pond, Hendon Borough Council, and in particular Mr. F. J. Cave, Borough Engineer and Surveyor, for all the help he has afforded me in this and other investigations; and also Peter Dumbill, who has corroborated and advised me on some of the phenomena seen and described.

Animal Ecology, Aims and Methods. Second edition. By **A. Macfadyen,** Pp. xxiv + 344, with 32 figures and 6 plates. Pitman, 42/-.

This book is intended to provide not only an introduction to the objectives of animal ecology and the means whereby ecologists attempt to gain information, but also a justification for regarding ecology as a subject in its own right. Although there are extensive sections devoted to the ecology of individuals and of single-species populations, the author clearly regards community ecology as the main centre of interest. Indeed it is the rapid advances in this field which account for the re-arrangement and re-writing of this section of the book, and for the greater length of this edition.

'Scientific natural history' has now grown into a quantitative science with the animal population as the main unit to be investigated by a series of statistical tools: the statistically valid census; the measurement of the effect of the density of a population on its own growth and that of other populations; the use of demographic methods in studying population growth; qualitative assessments of the flow of energy and matter in communities; survey methods facilitated by mechanical handling of large masses of information. How successful the author will be in his aim of interesting the layman and the student must depend to some extent upon the statistical inclinations of the individual reader. But if the latter does become confused there is no shortage of references to the fuller description of the methods and to discussions of their usefulness in particular contexts. Indeed, not the least praiseworthy feature of this wide-ranging review is the very extensive list of more than 800 references extending up to 1961.

J.R.L.

Obituary

ALBERT MALINS SMITH, M.A.
(1879-1962).

It is with deep regret that we record the death on November 26th, 1962, after a long illness, of Albert Malins Smith, of Shipley, an ex-President of the Union. Although Mr. Smith had been unable to take an active part in Union affairs for many years, he retained his keen interest in its activities until the end, and will long be remembered for his work with the Ecological Committee of the Union and its investigations over many years into the causes of the dying out of the Juniper on Moughton Fell.

Albert Malins Smith was born on April 14th, 1879, second son in a family of nine children, at the village of Waltham in Lincolnshire. His father was a farmer and the young Albert was brought up on the farm. Sometimes he would do his school homework while minding cows grazing along the lane side. At the age of about eleven he went to a grammar school to which he had to walk five miles each way. He took his Natural Sciences Tripos Parts I and II with First Class Honours in 1902/3 at Emmanual College, Cambridge, where his Professor was Harry Marshall Ward and his lecturers included Sir Francis Darwin, F. F. Blackman and Sir A. C. Seward. He was then awarded the Frank Smart University Research Studentship which he held first at Cambridge and then in Ceylon, where he worked at the Royal Botanic Gardens, Peradeniya, as Scientific Assistant to the then Director of the Gardens, the renowned J. C. Willis. After returning from Ceylon, his appointments included those of Senior Demonstrator in the Botany School, Cambridge, Lecturer in Vegetable Physiology at Manchester University, and Principal of the East Anglian Institute of Agriculture at Chelmsford, while for two years during the first World War he worked on dysentery problems at the Liverpool School of Tropical Medicine. It was in 1919 that he was appointed Head of the Biology Department at the Bradford Technical College, where he was to remain until his retirement in 1945.

Up to this time in his career, Mr. Smith had been mainly concerned with research in plant physiology. After becoming settled in Bradford, however, it was mainly to field natural history that his attention was turned, and the two fields in which he became especially interested were the study of algae, including their ecology, and the study of the distribution and ecology of flowering plants. In pursuing the former line a traditional connection between algae and the Bradford Technical College was continued, William West having been a great pioneer of that study both alone and with his son, Professor G. S. West; and in spite of the large amount of work which the Wests had accomplished, further discoveries were proved to be possible, and reference to the volumes of *The Naturalist* over the years will show many contributions from Mr. Smith's pen on this subject. A paper on the algal ecology of Miles Rough Bog, Bradford, embodied the results of five year's monthly examinations of the algae of this small bog. The work was described at the Leeds meeting of the British Association in 1927, but its full publication was delayed until 1942, when a paper on this work appeared in the *Journal of Ecology*. Another highlight in his algological work was his discovery in May, 1931, in pools near the lower falls at Aysgarth of a *Mougeotia* new to science, *Mougeotia Smithii* Fritsch, which was described by Professor Fritsch in *Hydrobiologia* Vol., I, 1948-49, under 'Contributions to our Knowledge of British Algae.'

As regards his work on the distribution of the flowering plants, Mr. Smith made some important discoveries, among which may be mentioned *Listera cordata* on Baildon Moor in 1931, the ecology of which is referred to at length in his presidential address to the Union (*The Naturalist* 1-7, 1944), and *Carex eboracensis* at St. Ives, Bingley, a sedge founded upon a herbarium specimen collected some 140 years previously by the Rev. James Dalton. At the Y.N.U. field meetings Mr. Smith could always be relied upon to give a full and comprehensive account of the ecology of any district visited and perhaps these may be counted as being among his most valuable contributions to our knowledge of the vegetation of the county. Reference to *The Naturalist* from 1925-1945 will reveal many such accounts from his pen, which should be of great value to future workers wishing to ascertain any changes in the vegetation which may have occurred in the intervening years. Other papers published in *The Naturalist* include ' Conjugation of Spirogyra ' (1930), ' Growth of Juniper on Moughton Fell ' (1935), ' Juniper in Swaledale '(1936), ' *Orobanche minor* at Shipley ' (1937), and ' Flowering of *Elodea* ' (1941). He was elected President of the Union in 1943.

To the Bradford Naturalists' Society (of which he was an Honorary Life Member) he was a tower of strength for very many years, and was President in 1924, 1926, 1946 and 1947. Possessed of a fine and resonant deep voice, he was an ideal chairman and lecturer. In recent years, though prevented by illness from working on the spot, he had taken an active part in the rehabilitation of the Bradford Botanic Garden in Lister Park, and was responsible for drawing up a master plan on which this work was based.

Coming to the more personal aspects of his character, he was a man of very high principles, the most kindly of men and a great source of inspiration to those who came into contact with him. He was a staunch Congregationalist and for many years attended at Greenfield (Bradford) and later Shipley Congregational Churches. The writer owes an incalculable debt to Mr. Smith for assistance in botanical work over many years, as indeed do many other field naturalists in the Bradford area. Perhaps a lesser-known fact was his deep interest in literature in general, and his daughter tells me he was able to quote from memory lengthy extracts from the works of Shakespeare. He was also musical, with a good bass singing voice and singing was one of his pleasures.

Mr. Smith's courage throughout a long illness was remarkable, and any visitor was immediately struck by his cheerfulness and the lively interest which he maintained in current affairs and the progress of field botany. His last contribution to *The Naturalist* was in 1955 when he wrote an article on 'The Leafing and Leaf Fall Dates of Three Common Trees.' This was based on observations he made from the window of his sick-room and is typical of his courage in refusing to be beaten by his physical limitations at this time. In August, 1960, he and his wife celebrated fifty years of happy married life and he survived her by only seven months. At his funeral service, several friends from the Yorkshire Naturalists' Union and the Bradford Naturalists' Society were present. He leaves a son and daughter to whom we offer our sympathies in their loss.

G. A. Shaw

ALBERT BROADBENT
(1891-1962)

We learned, with deep regret, of the death of Albert Broadbent on December 26th, 1962, after a pleasant Christmas Day spent with children and grandchildren. The Yorkshire Naturalists' Union has meant many things to many people, but it can scarcely have transformed any life more than his. He lived in the immediate neighbourhood of Huddersfield where he became established as a tailor, with hobby interests in engineering and the garden. He became a member of the Union in 1935, and immediately found new channels of interest. The first of these was in the general field of ecology, for he took part in a detailed biological survey of Dean Nick, near Huddersfield, and some of the results of this have appeared in the *Naturalist*. After his introduction to the Mycological Committee, however, he began to study Myxomycetes, a group which was not then receiving much attention in the field, and made considerable progress with them. This work helped later, on his appointment to the staff of the Tolson Memorial Museum, where he gave much useful service over the difficult war years, and also had charge of the weather station there.

I like to remember with gratitude his help in my own research on the causes and control of flowering in plants. He was always ready for any ploy, whether it was the production of a mechanical gadget or periodical sampling and drying of water plants through the night and far from home. Nothing disturbed his even temper and he was an ideal companion, whether wading in chilly water in the small hours or working in the hot shade of a summer afternoon. His fellow members in the Mycological Committee will remember him as an unobtrusive but genial and friendly personality, and find it easier than any other way to regret his passing whilst remembering his gentle, happy, useful life.

J.G.

BOOK REVIEWS

The House-Sparrow by **J. D. Summers-Smith**. *New Naturalist* Monograph. Pp. 269 with 36 figures in the text and 24 photographic plates, one in colour. Collins 25/-.

Enthusiasm for the House-Sparrow being so rare among modern ornithologists, this book had to be done well, if done at all. Evidently the author has been quietly making notes on the species in house and street, by farm and field and from literature for years. The result should make young House-Sparrows ' leave their shells ' still more

' Puffed to their very marrows
With pride at being sparrows.'

Every aspect, from before that important moment, to the end of their lives has been studied, considered and interpreted in the light of our present knowledge. Distribution is world-wide and is increasing; variations in habitat, and in characteristic and individual behaviour, in many countries, all continents, and on many islands, are cited. Famous sparrows include such tame birds as ' Phillip ' and " Clarence ', and the nameless one killed by a cricket ball at Lords. The greatest density per acre of House-Sparrow population in Britain occurs in London, and apparently is unsurpassed elsewhere. The last chapter discusses the secrets of the bird's success as a species.

Probably no side of field ornithology is studied more intensively today than that of migration; yet we know little of the House-Sparrow's part in it. Reference is made to T. H. Nelson's citations of ' rushes ' of House-Sparrows at Spurn and at Teesmouth; and it is stated that no evidence of similar movements has come more recently from the Bird Observatory. Nelson was not too clear about it himself, ' an immense flock evidently freshly arrived '; ' great rushes ' in the Octobers of 1884 and 1886, and ' large flocks of clean-looking birds which are undoubtedly migratory,' as far as migration from outside this country is concerned could all be merely surmise. The fact is that passage, the significance of which is problematic, occurs at Spurn in most autumns; and probably elsewhere. On October 19th, 1,598 House-Sparrows passed south in 130 minutes (Y.N.U. Report for 1959), and 2,680 sparrows ' mainly *domesticus* ' passed south in 265 minutes on 21st November, 1959. The question is not if such passage occurs but what is the significance of the fact. Is it migration as we understand the term, or merely foraging for food for a few miles from roosting areas ?

Appendix IV is headed ' More Distant Ringing Recoveries '; and only one bird has crossed the Channel (Dorset to Cherbourg), a journey that in mileage is little more than the also-cited Spurn to Middleton (Scarborough). Other, more recent Spurn-ringed recoveries, not cited in the book, include two that had reached Norfolk, one to Peterborough, several to Hull and Lincolnshire, one to Shiptonthorpe and one to Lebberston close to the coast near Scarborough. The Humber Estuary has been crossed by many sparrows, but none has been known to cross the North Sea. The recoveries show Spurn as a centre of House-Sparrow movements ranging to at least 40 miles west and north and *c.* 70 miles to the south. Nelson's ' rushes ' and ' fresh arrivals ' still occur, but evidence of arrivals from outside eastern England is still non-existent.

The book should be on the shelves of every ornithologist. It is a mine of information and should stimulate interest in a somewhat neglected species; and as the publishers rightly claim it is ' a model of balanced presentation, scientific scholarship, and good style.'

R.C.

The Birds of Staffordshire (1962), by **J. Lord and A. R. M. Blake.** Pp. 39. West Midland Bird Club, c/o Messrs. Hudson, Edmund Street, Birmingham. 7/6.

Accurate, terse (eleven species dismissed in eleven lines), all records cited in the classified list of twenty-four pages are from the annual reports of the club, except for eight items at the end which would preferably have been in their appropriate places. Records of species in Smith's *Birds of Staffordshire* that have not been known to occur since are listed (36) in an appendix. G. T. Warwick contributes nine pages devoted to the ' physical landscape ' and geology of Staffordshire, including maps. The booklet will be useful to Staffordshire residents and visitors, and to students of comparative distribution.

J. Lord, who still contributes to the Yorkshire report will be remembered as a member of the first committee of the Spurn Bird Observatory until he left Yorkshire.

R.C.

The Life of Birds, by **J. C. Welty.** Pp. 546, profusely illustrated with photographs, line-drawings, maps and charts. W. B. Saunders and Co., London, 1962, 63/-

This is a book intended for students, mainly American, taking ornithology as one of their subjects. Following the first two chapters, which deal with evolution and classification, six chapters are devoted to various physiological aspects. In these, although they are less likely to appeal to field workers, the author achieves his declared aim of presenting the basic facts in a simple, straightforward manner. Not only are they readily understandable but they also bring to light and together many facts which will be of use to field workers. As an example, we learn that pigmented feathers are always more resistant to wear and it is suggested that this may explain why so many light coloured birds, like gulls, have dark tips to their wing feathers.

Some of the experiments mentioned in this section, seem particularly callous. Is it really necessary to remove a duck's eyes to prove one's point about photoperiodism ? Or to starve domestic pigeons to prove that one denied both food and water will survive longer than one which receives food, but no water ? Of what great importance is it to learn that a turkey's gizzard is capable of grinding to pieces sixteen surgical lancets in sixteen hours. These are not the author's experiments, however. It is as well that he should show how some of the basic facts are arrived at.

To the general reader the following fourteen chapters are of greater interest. They deal comprehensively with breeding biology, behaviour, song, flight, migration and the like. The author makes a masterly summary of a wealth of material. The choice of photographs, diagrams, etc., is always apt. One of the most valuable features of the whole book is a section, ' Suggested Readings,' at the end of each chapter, in which the author not only lists the more important works dealing with each topic, but also comments briefly on them.

R.F.D.

The Birds of Sikkim, by **Sálim Ali.** Pp. xxx + 414, with 26 plates, 17 in colour. Oxford University Press, 1963. 52/6.

This latest addition—the fifth—to the books of its indefatigable author on the birds of the Indian sub-continent, follows the usual pattern of a regional account, with thirty pages of introduction preceding 391 of Systematic List. In the case of almost every species its field characters, status and habitat, distribution outside Sikkim, habits and nesting are described. As may be supposed, the sections on habits are the most readable and these are not only well written and succinct, but also show a quite wonderful power of observing the essential features of a bird's life. Particularly vivid and pleasant is the account of *Michrohierax*, the Falconet, and one is at once drawn to an author who is not afraid of writing that the Griffon Vulture soars in the sky ' purely for fun.' The account of world distribution is often not complete: the Lammergeier, for example, nests in Spain, Bonelli's Eagle in Asia Minor, while the Small Cuckoo winters in tropical Africa. The illustrations are of a high standard though the species shown seem to have been picked much at random: three rather gorgeous birds appear on two different plates and it is tantalising to have pictures of birds like the Stonechat, which are shown in many books, while less familiar ones are deprived of a place. (Mr. Sálim Ali, incidentally, refers to the Stonechat as ' the Collared Bushchat,' presumably in order to show its relationship to other members of the genus *Saxicola*.) Unhappily the book is printed on coarse yellow paper and the binding of one copy was broken by the time it reached the reviewer !

The most striking feature of the avifauna of Sikkim is the multiplicity of species; 550 for a small country, and that without a coastline, is indeed remarkable and the fact is attributable to the extraordinary steepness of the mountain valleys, where different species occur in different horizontal zones, with the result that, within a distance of only a few miles, can be found such typical tropical species as the Common Mynah and such typical mountain birds as the Horned Lark. Previously the lack of knowledge of the bionomics of this great variety of species has been—to use Mr. Sálim Ali's own expression—' truly deplorable,' largely on account of the insufficient data and lack of field notes to accompany collections, and his achievement in restoring order much deserves our gratitude, especially when the museum work is accompanied by intensive field experience.

M.F.M.M.

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PRINCIPALLY FOR THE
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Edited by

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with the assistance as referees in special departments of

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Contents

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YORKSHIRE NATURALISTS' UNION
ORNITHOLOGICAL SECTION

Preliminary Notice

In conjunction with the Ornithological section of the Y.N.U., the Doncaster and District Ornithological Society have arranged a joint meeting with the British Trust for Ornithology to be held at the new Doncaster Museum on the afternoon and evening of Saturday, 30th November, 1963, commencing at 3-0 p.m.

For the B.T.O., Ron Hickling, whose subject is "How many birds?" will be speaking on the vital topic of the effects of toxic chemicals. The Y.N.U. speaker will be R. F. Dickens on his studies of Skuas in Shetland and Iceland.

Further details of this meeting will be announced later, but members are asked to make a note of the date NOW.

Exchange copies of the following periodicals may be had on loan from The Editor of *The Naturalist*, The University, Leeds 2, on receipt of stamped addressed envelope:

British Birds.
Bird Notes.
Bird Study.
Essex Naturalist.
The London Naturalist.
Irish Naturalists' Journal.
Transactions of the Lincolnshire Naturalists' Union.
Transactions of the British Mycological Society.

Copies of Mr. A. A. Pearson's Papers, Mycena, The Genus Inocybe, and second editions of British Boleti and The Genus Russula, price 2/6 each, and Mr. P. D. Orton's Cortinarius Part 1 and 2, price 7/6 each, may be obtained from the Editor of *The Naturalist.*

YORKSHIRE NATURALISTS' UNION
ORNITHOLOGICAL SECTION

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V.C. 63—West Riding—*South:*	J. Cudworth, 17a Prospect Road, Ossett.
*V.C. 64—West Riding—*North:*	J. R. Mather, 44 Aspin Lane, Knaresborough.
V.C. 65—North Riding—*West:*	R. Chislett, Brookside, Masham, Nr. Ripon.

**A. F. G. Walker up to September.*

The Recorders with the Chairman and the Hon. Secretary of the Section form the Records Committee.

Report for 1962 (compiled by H. O. Bunce).

Weather moves took place in the first few days of January, including thrushes, starlings, finches and buntings; later, a slow return of Lapwings and Skylarks, and Siskins and Redpolls were numerous in some inland areas. In spite of the cold, a Whimbrel, Green Sandpipers, Spotted Redshanks, Black-tailed Godwits and a Yellow Wagtail were recorded. Two February gales did immense damage to old trees inland, and a great Fulmar wreck followed on the coast; several dark Fulmars, a Ross's Gull, and a party of Arctic Redpolls in Holderness. Dead Fulmars were found into March, a notable Shag move down the coast and a Little Gull inland; in the continuing cold weather, Golden Plovers were late on the breeding grounds; in contrast with records of Greenshank and Arctic Skua, only two Wheatears and single Chiffchaffs, Ring Ouzels, Sand Martins and Garganeys were reported in the last few days of March. Surprisingly early Lesser Whitethroats, Tree Pipits Blackcaps and Redstarts in April, but the warm days of the 19th, 22nd and 23rd brought a rush of ' firsts ' to many districts—Cuckoo, Swift, Reed and Sedge Warblers, Nightingale, Whinchat, House Martin, Spotted and Pied Flycatchers, as well as several Marsh Harriers and a Dotterel.

A cold May, with large numbers of Swifts and Hirundines over water and difficult breeding conditions for many species; some large coastal Wheatear moves, several Wood Sandpipers, a Red-necked Phalarope, two Ospreys and a Ross's Goose. Even June produced a force 9 gale; a Long-tailed Skua, and the beginning of an early duck and wader influx, both inland and on the coast. A Crossbill invasion at the end of the month, numbers remaining high well into July; July saw an early return of several high Arctic waders, a Scoter passage inland, and signs of an abundance of sea-birds which continued through August, possibly as a result of large numbers of small surface fish close inshore. In different areas, terns, skuas, Kittiwakes and Fulmars were numerous. The August Kestrel increase was early and large numbers of Willow Warblers appeared in several places. The sea held great interest through September, but the usual drift species were very scarce: several Barred Warblers, an Icterine and a Yellow browed Warbler, two Bluethroats and a Firecrest—and not a single Red-breasted Flycatcher or Red-backed Shrike. A small wader influx late in the month.

The Fairburn Swallow roost reached a peak on the 1st October, when Sand Martins also passed through; a fresh Crossbill invasion included at least one Parrot Crossbill; a poor Song Thrush passage, but a large Fieldfare and Redwing move on 11th October and later in the month. Rock Pipits were reported inland, more Firecrests, Whooper and early Bewick's Swans; a large skua movement on the 26th. Black-bellied Dippers in October and November, the latter month perhaps the most interesting of the year with its sea-moves of 3rd-4th, 10th-11th and 17th-18th—all weekends! Many duck and several wader species were involved, including Scaup, Eider and Goldeneye, with corresponding increases of Gadwall and other species, and inland reports of Eider and Velvet Scoter. Some skuas also occurred and the dates 11th and 18th November crop up in a surprising range of species. The big thrush immigration took place in November, as well as Starling, Woodcock and Whooper Swan; several Little Auks, Long-eared Owls and more Firecrests,

A Greenshank in early December, and continuing thrush influxes merging with cold weather moves; in the two early cold spells, several species were reported moving west, and around Christmas others moved to the coast whilst Redwings and Fieldfares again appeared in towns. Two Bewick's/Whooper Swan moves occurred.

The Spurn Bird Observatory

Report for 1962

Ralph Chislett

Visits to the peninsula by organised parties during the birds' breeding season were discouraged; such as came nevertheless, were asked to keep to the road. A single party, if they all pass quickly by any particular spot may do little damage; but multiplied may do a lot. The breeding birds must have first consideration in spring and early summer, so far as can be given. To patrol and keep people away from breeding areas needs more than one person; volunteers to help the warden at week-ends would be welcome. There is no doubt several species are sadly diminished. Ringed Plovers and terns especially. We must try again to have breeding on the peninsula the birds that should breed in such a place. Most of the loss had accumulated before the Yorkshire Naturalists' Trust became owners. Outside the restricted period many parties came, mostly of naturalists, by arrangement with the warden.

Visitors who stay at the observatory should be purposeful students, ready to help with the work, as most of them are. A glance at the records shows that helpers were present on twenty-two days in January, on only ten in February, then continuously from March 14th to June 2nd, except for three days in late May. Spring migration was therefore fairly well covered. The warden was alone on twenty days between June 2nd and July 20th; after which varying numbers helped to watch and to ring daily until November 19th and on twenty-one days thereafter to the year end. As usual, pressure on accommodation was greatest in autumn. For some week-ends, usually when little proved to be doing, more requests for beds came than were available. The warden is helped if alternative dates are offered. No-one should think that they can arrive unexpectedly and find a room vacant.

The recently established 'lifer box,' wherein one places a coin to celebrate the sight of a species new to the viewer, contributed to maintenance. With aid from the Y.N. Trust Ltd., gifts of various kinds from visitors, the voluntary work done by so many; and of course the nightly fees we all pay, the Observatory remains solvent.

Birds ringed totalled 8,224, a record number, and 1,458 higher than in 1961. Increases in ringings of Fieldfares, Redwings, Meadow Pipits, Pied Flycatchers, and especially of Linnets much more than balanced reductions in Blackbirds, Greenfinches, Robins and House Sparrows. Conspicuously absent from the traps were: Stonechat Red-breasted Flycatcher, Wryneck and Corn Bunting. Just as surprising as the Desert Wheatear seen by many from April 16th to 19th, was the fact that fresh Linnets were being caught in abnormal numbers from the winter months, through spring until July (when the year's crop of young appeared) and a few afterwards. Thirty-three Blackbirds were recovered far away, the ringings of which were spread back to 1957. J. R. Mather's tabulation of birds recovered at a distance will show many other interesting items, including Spurn-ringed House Sparrows in Norfolk in April and May, and one near Peterborough in October.

Hundreds of birds were re-trapped, some repeatedly. Table I only includes birds ringed a year or more previously.

Sea-watches were kept on many days. Skuas came daily during most of August and September; often when terns and/or Kittiwakes were present or passing. Passerines usually followed the coast, or came off the sea, much paper was used in recording them. Table II shows the peak estimates recorded of selected species on days when they were present, or passed in the largest numbers, together with their numbers when other species were at their peaks. Fieldfares were more in evidence and in greater numbers in the late autumn than usual. Robins less so.

December 1962 ends the seventeen years long period of establishing and building-up the observatory, by those who began it, and I must refer to the devoted services over those years of the retiring Honorary Secretary, G. H. Ainsworth. He built the first trap at the Warren. Really to do justice to George in full cry in the mouth of a Heligoland trap would need the descriptive verve of a sports commentator. He has given us the benefit of his technical knowledge. His energy and common sense, often

Ringings of the Spurn Bird Observatory to 31/12/62

	Ringed in 1962	Total to 31/12/62
Slavonian Grebe		1
Storm Petrel		1
Cory's Shearwater		1
Fulmar		1
Gannet		1
Shag		1
Mallard		2
Scaup		1
Long-tailed Duck		1
Common Scoter		1
Velvet Scoter		1
Shelduck		2
Sparrowhawk		23
Merlin		2
Kestrel	5	31
Red-legged Partridge	6	36
Common Partridge	31	65
Pheasant		4
Corncrake		1
Water Rail	3	16
Moorhen	5	20
Coot	1	1
Oystercatcher		4
Lapwing	2	13
Ringed Plover	10	149
Golden Plover	2	3
Grey Plover	2	2
Turnstone	5	14
Snipe	1	6
Jack Snipe		1
Woodcock	1	11
Green Sandpiper		2
Wood Sandpiper		5
Common Sandpiper	1	3
Redshank	14	32
Greenshank		1
Knot		2
Little Stint		4
Dunlin	36	254
Curlew Sandpiper		2
Ruff		1
Great Black-backed Gull	1	1
Common Gull		6
Common Tern	1	1
Little Tern		77
Razorbill		2
Little Auk		1
Guillemot		9
Puffin		2
Woodpigeon	5	9
Turtle Dove	5	14
Collared Dove	1	2
Cuckoo	11	150
Barn Owl		3
Little Owl	1	8
Tawny Owl		1
Long-eared Owl	1	6
Short-eared Owl		1
Swift		3
Hoopoe		1
Great Spotted Woodpecker	5	9
Wryneck		33
Short-toed Lark		1
Skylark	55	363
Shorelark	1	11
Swallow	59	502
House Martin	1	3
Sand Martin		36
Carrion Crow		3
Rook		15
Jackdaw	1	13
Magpie		23
Jay		1
Great Tit	8	154
Blue Tit	21	375
Coal Tit		66
Carried forward	302	2627

	Ringed in 1962	Total to 31/12/62
Brought forward	302	2627
Willow Tit		5
Long-tailed Tit	1	27
Bearded Tit		6
Treecreeper		4
Wren	36	472
Mistle Thrush		7
Fieldfare	125	192
Song Thrush	206	1464
Redwing	296	731
Ring Ouzel	3	26
Blackbird	874	6727
Wheatear	38	247
Stonechat		43
Whinchat	16	273
Redstart	72	1017
Black Redstart	7	59
Nightingale		9
Bluethroat	1	17
Robin	94	2354
Grasshopper Warbler		5
Reed Warbler	1	17
Sedge Warbler	31	235
Icterine Warbler		9
Blackcap	21	212
Barred Warbler	2	23
Garden Warbler	33	377
Whitethroat	157	1909
Lesser Whitethroat	6	90
Willow Warbler	133	2064
Greenish Warbler		3
Chiffchaff	9	191
Wood Warbler		17
Yellow-browed Warbler	1	9
Pallas's Warbler		1
Goldcrest	94	881
Firecrest	2	4
Spotted Flycatcher	25	231
Pied Flycatcher	147	989
Red-breasted Flycatcher		29
Hedge Sparrow	222	1432
Meadow Pipit	257	1247
Richard's Pipit		1
Rock Pipit	3	10
Tree Pipit	1	34
Pied Wagtail	1	4
White Wagtail	1	2
Yellow Wagtail		8
Waxwing		3
Great Grey Shrike	3	10
Woodchat Shrike		1
Red-backed Shrike		11
Starling	258	1765
Hawfinch		1
Greenfinch	856	5784
Goldfinch	10	52
Siskin		44
Linnet	1808	5869
Redpoll	14	53
Serin		1
Bullfinch	3	7
Scarlet Grosbeak		2
Crossbill	5	11
Crossbill, Parrot	1	1
Chaffinch	470	3365
Brambling	111	901
Yellowhammer	19	163
Corn Bunting		29
Red headed Bunting		1
Ortolan Bunting		1
Reed Bunting	69	887
Lapland Bunting		3
Snow Bunting	25	2000
House Sparrow	1175	8102
Tree Sparrow	179	588
Total	8224	55996

TABLE I

BIRDS RE-TRAPPED AT SPURN IN 1962, RINGED IN PREVIOUS YEARS

Retrapped 1962		1961	1960	1959	1958	1957	1956	1955	1954
2	Skylark	1	—	—	—	1	—	—	—
1	Blue Tit	—	—	—	1	—	—	—	—
4	Song Thrush	3	1	—	—	—	—	—	—
9	Whitethroat	3	3	1	2	—	—	—	—
20	Hedge Sparrow	13	4	3	—	—	—	—	—
1	Meadow Pipit	—	1	—	—	—	—	—	—
2	Starling	1	1	—	—	—	—	—	—
16	Greenfinch	7	7	1	1	—	—	—	—
73	Linnet	39	30	2	2	—	—	—	—
2	Chaffinch	1	—	1	—	—	—	—	—
17	Reed Bunting	6	7	3	1	—	—	—	—
92	House Sparrow	18	34	22	8	3	4	2	1
2	Tree Sparrow	2	—	—	—	—	—	—	—
5	Cuckoo, Wren, Fieldfare, Robin, Sedge Warbler (one each)	5	—	—	—	—	—	—	—
246		99	88	33	15	4	4	2	1

expressed with humour, have smoothed away scores of difficulties. Without his optimism and enthusiasm the observatory might never have been; with them, the concerted communal note book, that passed between the several people who paid visits to Spurn in the few years before 1940, grew into the log and roll-call, and the observatory as it is today. Much has been added to our knowledge, with the help of the many who have participated. We thank them all. George and I can now retire, confident that Keith Fenton (the new Honorary Secretary) and John Cudworth (the new Chairman) will have the same loyal co-operation from so many that we have had. They and the observatory will have any help and support that we can give them.

TABLE II

PEAK ESTIMATES OF SELECTED SPECIES AT SPURN

	July 19	July 21	Aug. 18	Sept. 5	Sept. 8	Sept. 11	Sept. 29	Oct. 11	Oct. 12	Oct. 13	Oct. 19	Nov. 2	Nov. 7
Swift	2000	5000	10	60	—	4	1	1	—	—	1	—	—
Skylark	√	20	√	10	8	112	1350	50	√	√	500	250	100
Swallow	30	50	4550	8000	1500	2000	360	30	6	7	60	—	9
House Martin	—	10	2	85	60	155	4	—	—	—	4	—	2
Sand Martin	100	40	19	40	6	210	2	—	—	—	—	—	—
Fieldfare	—	—	—	—	—	—	—	600	300	500	850	400	3000
Song Thrush	1	4	—	10	4	7	6	60	80	30	12	15	20
Redwing	—	—	—	—	—	—	1	1500	300	500	260	250	1000
Ring Ouzel	—	—	—	—	—	—	—	4	1	3	—	—	—
Blackbird	—	—	2	6	4	6	10	100	150	60	25	40	3000
Robin	—	—	—	2	—	1	2	30	50	40	—	—	3
Meadow Pipit	√	20	5	250	4600	3250	1260	60	20	20	240	40	20

Recoveries of Yorkshire Ringed Birds

(and of birds ringed elsewhere and recovered in Yorkshire)
Compiled by John R. Mather

Space has again necessitated the selection of only the more important recoveries. Many recoveries of some species, such as Lapwing, Blackbird, Starling and Linnet appear in analysed form, except where they show deviation from the accepted pattern, or shed new light on the known routes and destinations.

In last year's report, ringing totals were requested so that the grand total for the county could be published. 30,000 was the estimated number, and the totals sent in add up to 30,288. 29 individuals and groups were responsible.

Large numbers of Swifts were ringed in the county (1,485+) and these should provide much information in years to come, as have the Swifts ringed in previous years and recaught subsequently, *e.g.* at Harrogate S.F. where of 251 ringed in 1958, 24 were ' controlled ' there in 1962. Smaller numbers from later years were controlled (re-trapped and released) at other places, as were also *Hirundines* and other migrants.

I have been asked by the chief warden of the Fairburn Reserve to point out that no ringing should be undertaken there except under the supervision of C. Winn. It will be appreciated that the area is treated as a bird observatory, and individual ringers should not use their own rings there. Anyone wishing to take part in the ringing programme should first contact Mr. Winn.

Recoveries are listed in ' date of ringing ' order and the symbols for manner of recovery are as follows:

v	= caught alive and released with ring.
+	= shot or killed by man.
×	= found dead or dying.
( )	= caught alive and not released or released with ring removed.
/?/	= manner of recovery unknown.

Birds ringed abroad and recovered in Yorkshire are listed separately at the end.

LIST OF SELECTED RECOVERIES

CORMORANT				
5001728	pull.	14-8-61	Farne Islands, N'land.	
	×	20-6-62	Spurn. (155 m. SE.)	per SBO
HERON				
1008915	pull.	27-4-61	nr. Whixley	
	×	23-4-62	St. Ninian's Bay, Isle of Bute, Scotland. (190 m. NW)	KRS
1008917	pull.	27-4-61	nr. Whixley.	
	×	28-4-62	Wark. N'land. (80 m. NNW)	KRS
1008923	pull.	22-5-61	nr. Whixley	
	×	3-4-62	Dinnington, nr. Sheffield. (46 m. S.)	KRS
TEAL				
3025359	pull.	16-6-57	Gouthwaite Res.	
	+	28-11-62	Riccall, nr. Selby (35 m. SE)	ESS
CANADA GOOSE				
5000163	pull.	26-6-60	Ripley/transported to Grimsby for release.	
	×	30-11-62	nr. Gt. Driffield. (35 m. NNW)	SSW
MUTE SWAN				
Z 1819	3rd W	3-9-60	Hornsea Mere	
	v	6-10-60	Cambridge (120 m. S).	
	×	24-4-62	Abberton Res. Essex. (40 m. SE)	GRB
Z 5352	pull.	6-7-61	Gt. Ouseburn, nr. York.	
	×	15-10-62	Swalwell, nr. Newcastle, Co. Durham (66 m. NNW)	KRS
BUZZARD				
AF 4250	pull.	7-7-62	Woodfidley, nr. Beaulieu, Hants.	
	×	17-9-62	Rolston, nr. Hornsea. (215 m. NNE).	per BTO

LIST OF SELECTED RECOVERIES—*continued*

LAPWING

13 Lapwings ringed as pull. in Yorkshire between 1956 and 1961 were recovered in Dec 1961 (3) Jan 1962 (9) and Feb 1962 (1) in France (7) and Spain (6). One ringed as pull. nr. Masham in 1961 was found dead at Exmouth, Devon, in Jan 1962, and one ringed as pull. nr. Harrogate in 1958 was nr. Monaghan, Eire in Dec 1962 (220 m. W).

TURNSTONE				
R 44101	ad. ♀	25-7-59	Spurn.	
	×	(3-5-62)	Fleetwood, Lancs. (126 m. WNW).	SBO
SNIPE	f.g.	15-12-61	Armthorpe	
4308 S	+	4-1-62	Nr. Caherconlish (Limerick). (310 m. W)	TG
32823 S	f.g.	29-10-61	Adwick-le-street	
	+	23-1-62	Lawarth, Cornwall. (295 m. SW)	RJR
CURLEW				
369866	pull.	19-6-55	Stainburn, nr. Harrogate.	
	+	?-9-61	Brideswell, Lough Ree, Roscommon.	WNS
LESSER BLACK-BACKED GULL				
AJ 51009	pull.	7-7-62	Walney Island.	
	v	23-9-62	Knaresborough S.F. (70 m. E)	per JRM
COMMON GULL				
?	1st W	17-1-60	Willerby, Hull.	
	×	3-6-62	Fesenøy, nr. Kopervie (Rogaland), Norway.	DJM
BLACK-HEADED GULL				
AT 79002	pull.	2-7-61	Blacklock, Sanquhar, Dumfries.	
	×	1-1-62	Knaresborough S.F. (132 m. SE)	per JRM
3069447	ad.	5-1-62	Woodhouse, nr. Sheffield.	
	×	5-5-62	Norshelm (Östergötland), Sweden 58°30′N., 15°55′E.	SNHS
KITTIWAKE				
2020808	pull.	3-7-60	Scarborough	
	×	10-9-62	Zaandam (Noord Holland), N'lands. 52°27′N., 4°49′E.	JRM
COMMON TERN				
22215 S	pull.	4-7-62	Scolt Head, Norfolk.	
	×	30-8-62	Hornsea Mere (75 m. NW)	AHR
ARCTIC TERN				
?	pull.	22-6-61	Farne Islands, N'land.	
	×	21-7-61	Flamborough.	N&DNHS
SWIFT				
J 40007	ad.	28-6-59	Ilkley.	
	×	26-1-62	Kikwit (Leopoldville), Congo. 5°02′S, 18°51′E.	WNS
SC 14389	f.g.	19-7-62	Hackenthorpe, Sheffield.	
	×	29-12-62	Fort Victoria, S. Rhodesia. 20°10′S, 30°49′E.	SNHS

This is the farthest south for any British ringed Swift to be recovered.

KINGFISHER				
SC 13401	f.g.	23-4-62	Kilnhurst, Rotherham.	
	×	22-8-62	Barrasford, Hexham, N'land. (110 m. NNW).	FH

This is a record distance for a British ringed Kingfisher.

LIST OF SELECTED RECOVERIES—*continued*

SWALLOW

AA 85221	juv.	28-8-60	Sprotborough Flash.	
	v	3-2-62	Dundee (Natal), S. Africa. 28°10′S, 30°15′E.	RJR
AA 98590	juv.	22-9-60	Fairburn.	
	×	21-7-62	Lochgair, Loch Fyne (Argyll). (225 m. NW)	CW
AA 98293	juv.	25-9-60	Fairburn	
	v	6-7-62	St. Andrews (Fife). (185 m. NNW)	CW
AC 37020	ad.	7-9-61	Fairburn.	
	×	28-6-62	Leith, nr. Edinburgh (Midlothian). (170 m. NNW)	CW
AC 37373	juv.	14-9-61	Fairburn.	
	/?/	14-10-62	Kasanza, nr. Vudi (Leopoldville), Congo. 6°00′S., 18°55′E.	CW
AC 37533	ad. ♀	18-9-61	Fairburn.	
	( )	30-3-62	nr. Djambala, French Congo 2°32′S., 14°43′E.	CW
AC 37591	juv.	18-9-61	Fairburn.	
	×	21-5-62	Thornliebank, Glasgow (Renfrew). (185 m. NW)	CW
AC 46350	juv.	22-9-61	Fairburn.	
	v	21-6-62	Claehan Bridge, nr. Oban (Argyll). (245 m. NW.)	CW

In addition, 2 birds ringed in Aug and 9 ringed in Sept 1961, at the Fairburn roost and recovered on spring and autumn passage between Boston (Lincs) 76 m. SE and Berwick (N'land) 135 m. NNW.

SAND MARTIN

AA 90632	juv.	4-9-60	Fairburn.	
	v	22-6-62	Coates, Petworth (Sussex). (188 m. S)	CW
AA 90658	juv.	6-9-60	Fairburn.	
	v	6-8-62	Spean Bridge (Inverness). (250 m. NW)	CW
AA 90880	juv.	11-9-60	Fairburn.	
	×	mid-3-61	San Jaime (Tarragona), Spain. 40°43′N., 0°42′E.	CW
AC 10316	juv.	30-7-61	Littlebourne, Canterbury, Kent.	
	v	13-7-62	Fairburn.	SBRS
AC 08435	ad.	7-8-61	Fairburn.	
	v	17-4-62	Alhabia (Almeria), Spain. 37°00′N., 2°25′W.	CW
AC 22546	juv.	11-8-61	Fairburn.	
	×	7-6-62	Lumsden, Huntly (Aberdeen). 260 m. NNW.	CW
AC 29624	juv.	9-7-62	Fairburn.	
	v	19-8-62	Chichester (Sussex). 200 m. S.	CW

In addition, 30 birds ringed at the Fairburn roost in the autumns of 1958 (1), 1960 (8), 1961 (21) were recovered May to Aug 1962, at distances of up to 100 m. W to N of Fairburn. A further 5 birds ringed in the summer of 1962 in Yorks (3) N'land (1) and West'd (1) were controlled at the Fairburn roost in July (3) and Sept (2).

2 birds ringed at Otley on 6 July 1961, and 11 Aug 1962 were controlled at Romford S.F., Essex, on 17 July 1961 and 12 Sept 1962 respectively. (F&L). 3 controlled at Masham on 10 June, 1962, had been ringed respectively at the Welney roost in Norfolk (1) on 9 Sept 1961 and at the Fairburn roost in Aug and Sept, 1961. (EEJ).

RAVEN

931329	pull.	29-4-61	nr. Appleby, Westmorland.	
	×	18-10-61	Arncliffe, nr. Skipton. (35 m. SE)	RWR
931330	pull.	29-4-61	nr. Appleby, Westmorland.	
	×	28-4-62	Litton, Kettlewell. (35 m. SE)	RWR
412180	pull.	20-4-58	Westmorland.	
	×	4-1-62	Gt. Whernside, Nidderdale.	per DS

ROOK

3059845	pull.	7-5-60	Ackworth.	
	/?/	31-3-62	Newark, Notts. (44 m. SE)	Ack.S

LIST OF SELECTED RECOVERIES—*continued*

BLUE TIT

A 97396	ad. ♀	6-12-57	Ackworth.	
	/?/	29-3-62	Ripon. (38 m. NNE).	Ack.S

Of 180 caught in a garden at Masham in 1962, two had been ringed in 1956, one in 1957, one in 1959, 4 in 1960 and 16 in 1961. R.C.

FIELDFARE

80643 S	ad.	29-12-61	Ossett.	
	×	2-1-62	nr. St. Valery en Caux, Seine Maritime, France. 49°52′N, 0°43′ E.	AF

SONG THRUSH

V 89677	juv.	20-6-59	Spurn.	
	×	1-1-62	Rossport, Ballina (Mayo). 375 m. W.	SBO
84118 X	f.g.	20-10-60	Spurn.	
	+	1-11-62	Matha (Charente Maritime), France. 45°52′N, 0°18′W.	SBO
42691 X	pull.	8-6-61	Bewerley, nr. Pateley Bridge.	
	×	8-2-62	Loughrea, Galway, N. Ireland. 280 m. W.	SSW
60919 S	juv.	27-8-61	Adwick-le-Street, nr. Doncaster.	
	×	4-1-62	Isle of Scilly. 330 m. SSW.	RJR
32097 X	f.g.	3-9-61	Armthorpe, nr. Doncaster.	
	×	5-2-62	Virandeville (Manche), France. 49°33′N., 1°41′W.	TG
85222 X	f.g.	3 10-61	Spurn.	
	×	early-1-62	Bere Regis, Dorset. 220 m. SSW.	SBO
85281 X	f.g.	10-10-61	Spurn.	
	×	25-3-62	Madrid, Spain. 40°25′N, 3°43′W.	SBO

REDWING

93717 X	f.g.	29-1-61	Huddersfield.	
	+	24-10-61	nr. Bordeaux (Gironde), France. 44°50′N, 0°30′W.	TDB

RING OUZEL

89034 S	ad. ♀	12-5-62	Spurn.	
	+	2-11-62	Cella (Teruel), Spain. 40°27′N, 1°18′W.	SBO

BLACKBIRD

42847 X	ad. ♀	10-12-60	Gouthwaite Res.	
	×	17-4-62	Järnforsen, nr. Jareda, Sweden. 57°24′N., 15°35′E.	SSW
42818 X	1st W ♂	19-11-60	Gouthwaite Res.	
	+	25-11-62	Arques, Pas de Calais, France. 50°45′N, 2°15′E.	SSW

These two birds were both ringed at the same winter roost.

73674 X	f.g. ♀	12-8-61	Masham.	
	/?/	17-1-62	Hollincross, Tipperary, Eire.	RC
24007 X	ad. ♀	15-12-61	Hemsworth.	
	/?/	3-1-62	Listowel, Co. Kerry, Eire.	MNR

12 birds ringed in Oct-Nov, 1961 at Spurn were recovered in the summer & autumn of 1962 in: Sweden (4), Norway (3), Germany (3), one in France in Nov 1962, one in Galway (Eire) in Mar 1962. 3 birds from the 'rush' of 5 Nov 1961 were recovered in Jan 1962 in Wilts (185 m. SW), in Mayo (320 m. W) & Galway (365 m. W), & 2 in Nov 1962 at Fair Is. & in Rogaland (Norway). 3 ringed in Mar & Apr at Spurn (2) & at Sutton-on-Hull (1) were recovered in 1962 in Norway (1) & Sweden (2). One from Adwick-le-Street in Mar was in Sweden in Oct.

ROBIN

AB 31381	f.g.	22-9-61	Spurn.	
	×	3-1-62	Portslade, nr. Brighton, Sussex. 190 m. S.	SBO
AE 67588	f.g.	7-11-62	Spurn.	
	×	13-12-62	Gainsborough, Lincs. 40 m. WSW.	SBO

2 Spurn Robins of Oct 1960 were in Belgium and the Netherlands in Oct 1961.

LIST OF SELECTED RECOVERIES—*continued*

SEDGE WARBLER

AE 65684	f.g.	6-8-62	Sprotborough, nr. Doneaster.	
	×	26-8-62	Guineamp (Cotes du Nord), France. 48°34′N, 3°09′W.	WGD

GARDEN WARBLER

K 53333	f.g.	10-8-59.	Masham.	
	v	11-6-62	Masham.	RC/EEJ

MEADOW PIPIT

91351	ad.	25-4-60	Knaresborough S.F.	
	( )	mid-9-62	Getafe (Madrid), Spain. 40°18′N, 3°44′W.	KRS

PIED WAGTAIL

AA 39238	juv.	25-6-60	Ilkley.	
	×	early-3-62	nr. Obidos (Estremadura), Portugal. 39°21′N, 9°11′W.	WNS
AA 39673	juv.	24-7-60	Ilkley.	
	×	winter 61/62	Ponte de Sōr (Ribotejo), Portugal. 39°15′N., 8°01′W.	WNS
AA 49020	juv.	2-7-61	Ilkley.	
	+	18-1-62	Pasao (Alto Alentejo), Portugal. 38°36′N, 8°15′W.	WNS
AE 54571	juv.	2-8-62	Mexborough.	
	/?/	25-10-60	Mafra (Estremadura), Portugal. 38°57′N, 9°19′W.	RJR

YELLOW WAGTAIL

	ad. ♂	29-7-61	Gouthwaite Res.	
		0-11-62	Campanario (Badajoz), Spain. 38°52′N, 5°36′W.	SSW

STARLING

11 Starlings ringed Nov to Feb 1959-1962 were reeovered in the summer and autumn of 1962 in: Norway (1), Sweden (1), Finland (1), Denmark (3), Holland (2), Germany (1) and Poland (2). A juv. ringed at Knaresborough S.F. in July 1961 was in Dublin in April, 1962.

GREENFINCH

R 44650	f.g. ♀	3-1-60	Spurn.	
	×	3-7-62	Boulmer, nr. Alnwiek, N'land. 145 m. NW.	SBO

12 other Spurn ringed Greenfinehes were reeovered from 9 to 98 miles, SE eloekwise to N.

LINNET

AC 38963	juv. ♀	27-6-62	Spurn.	
	+	30-10-62	nr. Cadiz, Spain. 36°10′N., 5°21′W.	SBO

Of 9 other Yorkshire ringed Linnets, 7 were in S & W Franee in the winter of 1960/61 (3), and at the end of 1962 (4), and 2 were in Belgium in Oet 1961 and Nov 1962, respeetively. One ringed at Spurn in early July 1961 as a juv. was still 450 miles S of Yorkshire at the end of May 1962.

REDPOLL

AC 38765	1st W ♂	21-4-62	Spurn.	
	×	24-5-62	Memmert, E. Frisian Is., Germany. 53°38′N, 6°52′E.	SBO
AE 75988	ad.	6-10-62	Newmillerdam.	
	v	28-10-62	nr. Thuin (Hainant), Belgium. 50°17′N, 4°18′E.	AF

CHAFFINCH

J 87400	1st W ♂	2-4-60	Spurn.	
	v	12-3-61	Millwood, Barrow-in-Furness, Lanes. 135 m. WNW.	SBO
J 86229	f.g. ♀	7-4-60	Spurn.	
	×	19-3-61	Abbey, nr. Darwen, Lanes. 107 m. W.	SBO

BRAMBLING

J 83141	ad. ♂	11-10-59	Spurn.	
	v	26-3-61	Brasschaat (Antwerpen), Belgium. 51°17′N, 4°30′E.	
	/?/	14-10-62	Booischot (Antwerpen). 51°02′N, 4°42′E.	SBO

LIST OF SELECTED RECOVERIES—*continued*

HOUSE SPARROW				
AB 03214	f.g. ♂	12-10-60	Spurn.	
	( )	4-10-62	Stanground, Peterborough (Northants). 70 m. S.	SBO
AB 04785	f.g. ♂	8-3-61	Spurn.	
	×	18-4-62	Dersingham, Norfolk. 52 m. SSE.	SBO
AB 05575	f.g. ♂	9-6-61	Spurn.	
	×	18-5-62	Wolfreton, Castle Rising, Norfolk. 56 m. SSE.	SBO
BA 18134	ad. ♂	29-10-61	Knaresborough S.F.	
	×	23-8-62	Bognor Regis, Sussex. 225 m. S.	KRS

Body and ring sent to British Museum (fortunately !)

List of Birds Ringed Abroad and Recovered in Yorkshire

TEAL				
Leiden				
3035353	1st W ♂	20-9-61	Texel, Holland.	
	+	3-2-62	nr. The Fleets, Barnsley.	per GRA
PINK-FOOTED GOOSE				
Wing Tag				
C 588	pull.	1-8-51	Thórsáver, Central Iceland.	
	×	24-9-62	Broomfleet Island, Humber.	per TWH
BLACK-HEADED GULL				
Stockholm				
6023392	pull.	23-6-62	Falsterbo, Sweden.	
	×	31-10-62	Ardsley Res.	per RH
?	pull.	18-6-58	Lake Engure, nr. Riga, Latvian S.S.R. 57°17′N, 23°07′E.	
	×	Jan. 61	Sutton-on-Hull	per BSP
?	pull.	6-6 57	Fornebu, Baerum Akershus, Norway. 59°53′N, 10°33′E.	
	×	11-3-62	Withernsea.	per BSP
DUNLIN				
Stav.				
856001	f.g.	31-8-60	Revtangen, Rogaland, Norway. 58°45′N., 5°30′E.	
	/?/	30-12 62	Spurn.	per SBO
BLACKBIRD				
7357033	ad. ♀	1-11-59	Heligoland.	
	v	31-12-61	Adwick-le-Street.	
	v	28-1-62	Adwick-le-Street. (See 1961 Report).	per RJR
SPOTTED FLYCATCHER				
Heligoland				
986311	f.g.	14-6-61	Heligoland.	
	v	15-7-62	Spurn.	per SBO
PIED FLYCATCHER				
Heligoland.				
093743	1st W	1-9-62	Wangeroog, East Frisian Is., Germany.	
	v	14-9-62	Spurn.	per SBO
STARLING				
?	f.g. ♂	19-3-59	Heligoland.	
	×	15-1-62	Ellerby, E. Yorks.	per BSP
?	f.g.	26-8-61	Ouderkerk/Amsrel, Noord Holland.	
	/?/	8-3-62	Hull.	per BSP

KEY TO INITIALS

Ackworth School, G. R. Aynsley, G. R. Bennett, T. D. Bisiker, British Trust for Ornithology, R. Chislett, W. G. Dye, A. Frudd, T. Grant, F. Horner, T. W. Henderson, E. E. Jackson, Knaresborough Ringing Station (J. R. Mather & G. R. Wilkinson), D. J. Millin, Northumberland & Durham N. H. S., B. S. Pashby, M. N. Rankin, R. J. Rhodes, A. H. Rider, R. W. Robson, Sanderson, Summersgill & Walker, E. S. Skinner, Sorby N.H.S. Spurn B.O.,D. Swindells, Wharfedale N.S., C. Winn.

CLASSIFIED LIST

The order used is that of the B.O.U. *Check List* (1952), and English names follow current *British Birds* practice. To save space, a less readable style has been adopted including the use of accepted, and some unfamiliar abbreviations (see below), and of shortened date-forms. In addition, no supporting evidence of identification is published here; records of rarities have been assessed by the Records Committee, and full details are filed by the individual recorders. Spurn records are exceptions to this rule, and have been extracted by R. Chislett from the Observatory log, where details and observers' names may be found.

Abbreviations and references used in the list.

ER, NR, WR = East Riding *etc.*; 1st W *etc.* = first winter *etc.*; imm = immature; juv = juvenile; N, NW *etc.* = cardinal compass points; Res = reservoir; SF = sewage farm; *B.B.* = *British Birds* journal; *Nat.* = *The Naturalist*; Nelson = Nelson, T. H. (1907): *The Birds of Yorkshire*; *NDOR* = *Ornithological Report of Northumberland and Durham*; *OR* = *Y.N.U. Ornithological Report*; Clevelands = the moorlands of V.C. 62.

1. Black-throated Diver. Recorded singly from the ER coast: Filey on 14 Jan & 18 Feb, Flamborough 28 Jan & 13 May, Bridlington 25 Mar & Hornsea 14 Apr (GRB). In autumn at Spurn: on 29 Aug, on 3 days in Sept, 3 on 21 Oct & one to 24 Oct, on 4 Nov & 2 on the 5th.

2. Great Northern Diver. Inland: one in summer plumage at Blackmoorfoot Res on 2 July (DM,CJD). Coast: one at Scarborough up to 4 Apr & 2 on 18 Mar (JRM,AJWa *et al.*). At Spurn one on 12 Jan & 13 May; one dead at Tunstall on 18 Mar (BSP—see *Nat*, 884:30); Filey one on 7 Apr (RHA); one at Flamborough on 13 May (GRB). Autumn singles at Spurn on 9 & 21 Sept, with one at Hornsea Mere on 16 Dec (GRB).

4. Red-throated Diver. Inland: 2 at Gouthwaite Res on 11 Jan (JF,MW) & one from 11 Mar to 1 Apr (AFGW *et al.*); one at Lockwood Beck Res on 4-5 Mar died when iced in (DGB *et al.*). Coast: recorded in every month, regularly up to late Apr & from late Aug (SBO & many observers).

5. Great Crested Grebe. Breeding attempted on one water in VCs 61 & 62, on 8 in 63 & on 11 in 64, Between mid-Feb & late Apr numbers at several WR waters again greatly exceeded the breeding populations; at Wentworth, where 2 pairs bred 16-17 present in May & June (JIM).

6. Red-necked Grebe. Singles at: Southfields Res on 3 & 4 Mar (RJR,FH, GFO); off Filey on 22 Apr & Flamborough on 27 Oct (GRB).

7. Slavonian Grebe. Hornsea Mere: one on 10, 11, 18 & 24 Nov with a second on 17th (GRB,RHA).

8. Black-necked Grebe. One at Fairburn on 24 July & an injured bird on 22 Nov (CWin). One at Eccup Res on 6 Aug (GR,NFR) & on 2 Oct (GRN). 3 at Redmires Dam (near Sheffield) on 13 Oct (AJWi). One at Flamborough on 24 Nov (JF).

12. Leach's Petrel. One at Spurn on 21-22 Oct (PHGW, JMBu *et al.*).

14. Storm Petrel. 2 seen from a boat in Bridlington Bay, 19 Sept (GRB).

16. Manx Shearwater. An exhausted bird picked up near Halifax on 13 Sept was released at Ogden Res & flew off NW (CWil,CL). Recorded from 8 coastal points from May to Sept with fewer than usual in June & July. Max. *c.*25 on 26 May off Flamborough, Hornsea (GRB) & Spurn; 18 at Spurn on 11 June, 27 on 27 Aug when Sooties reached their peak; 38 off Flamborough on 14 Aug (AJWi); 47 at Spurn on 12 Sept, 32 off Scarborough on 13 Sept (RHA) & 77 off Hornsea on 19 Sept (GRB). Numbers quoted are totals, not flocks.

21. Sooty Shearwater. Reported only from Flamborough & Spurn between 26 Aug & 27 Oct, with more than usual passing at Spurn: 15 on 26 Aug with 30 the next day & 5 on 7 Sept. At Flamborough, 8 on 18 Sept & 24 on the 19th (GRB).

26. Fulmar. Following the second of the Feb storms, an unprecedented ' wreck ' occurred on the coast; at least 347 were found dead in the period 24 Feb-24 Mar, of which 286 were between Flamborough & Spurn (nearly complete search arranged by BSP), the remainder at Scarborough, Whitby & Redcar (GRB,DRS). Birds of all colour-phases were included & there was evidence of a second wreck in mid-Mar of mainly light birds. An account is to be published in the *Nat* & for the whole country

in *B.B.* (JC,BSP). In the week 17-24 Feb up to 5 dark or ' blue ' Fulmars were seen at Bridlington, & at Spurn the first of the year on the 17th was also dark (JC). Prospecting of the N. Cleveland Scarp continued near Guisborough (DSS), & of the Holderness clay cliffs where there is still no evidence of sites being occupied (LS,HOB) Between 19 & 27 Aug very large numbers were attracted to the Teesmouth-Tees Bay area by the Sprat wreck. 5 dark birds were included. Most reports were from the Durham side (for details, see *NDOR*). No comparable numbers were seen elsewhere in this period. Last at Spurn on 20 Sept, a normal date for final desertion of Yorkshire breeding sites.

27. Gannet. 6 young counted on 10 nests in the unique colony on ' Jubilee Corner ' cliff, Bempton (see *Nelson*, plate facing page 732). Very numerous off Bridlington in Sept, whilst at Spurn the largest count was 180 on 6 Sept.

28. Cormorant. Present in the breeding season at Huntcliff, Ravenscar, Gristhorpe & Flamborough.

29. Shag. Singles at Welton Water on 18 Feb (RJR), Cherry Burton on 4 Mar (RSPCA) & Southfield Res on 14 Apr (RJR). In Mar, a flock of *c.*60 flew S at Spurn on the 3rd, with other parties making up 83 for the day—' almost all Shags ' (JC). Parties of 39, 42 & 49 passed S off Holmpton on 11 Mar (BSP).

30. Heron. VC61: 10 occupied nests at Hornsea Mere (HOB). 62: 6 pairs in Kirkdale, 4 occupied nests at Sproxton (PRE). 64: 9 pairs successful at Whixley (JRM,NC).

38. Bittern. Single birds at: Potteric Carr on 11 Mar (RDM), Fairburn on 29 Aug (CWin) & 18 Nov (WG,GG), Welton Water on 14 Oct & 11 Nov (WBS), Blaxton on 28 Oct (AEP,JB), Woodhouse Mill on 20 Nov (RGH) & at Hornsea Mere on 4 Dec (ADB).

45. Mallard. Numbers reported in the early months were comparable with those of recent years, & were higher than usual at Eccup Res (1010) & Gouthwaite Res (300) in late Jan. A strong N passage was noted at several coastal points on 18 Nov & from then on to late Dec many—but not all—counters reported unusually high numbers: *c.*640 at Spurn on 22 Dec; *c.*5,200 at Hornsea Mere on 8 Dec (GRB); of an estimated 8,000 duck spp. disturbed on 23 Dec by illegal shooting within the Humber Refuge (TWH), probably half would be Mallard; 760 at Scaling Dam Res on 2 Dec, Lockwood Beck Res 517 on 9 Dec (ECG) & Teesmouth *c.*600 on 24 Nov (PJS); Castle Howard *c.*900 on 6 Dec (MDC). In comparison, the Blaxton peak was only *c.*300 on 23 Sept (AEP,JB), Gouthwaite Res 550 on 14 Oct (AFGW *et al.*), Fairburn 1,000 in the first half of Oct (CWin) & *c.*1,250 at Leighton Res on 21 Oct (EEJ). From other Pennine waters, almost all max. counts were in the last six weeks of the year, with the largest *c.*500 on the R. Ure below Leyburn on 25 Nov (GEA), *c.*1,000 on Eccup Res on 2 Dec & *c.*400 at Langsett Res on 24 Dec (DJS).

46. Teal. Most waters held fewer than usual in the early months, but Hornsea Mere numbers of 1,700 on 21 Jan (GRB) & the Derwent floods *c.*3,000 on 4 & 11 Feb (AFGW,HOB) were very high. Autumn numbers rose after the big duck moves of 3-4 & 10-11 Nov, falling in the late Dec cold spell. At Spurn, 262 passed on 3 Nov & *c.*85 S on 23 Dec.

47. Garganey. One at Fairburn on the 25th was the only Mar record. At Hornsea Mere: 2 on 8 Apr, 1-2 on 12 May & 4 & 15 June (GRB). Spurn: a pair in the ' Lagoons ' area on 18 Apr & singles on 17, 20 & 28 May. In Aug, max. at Fairburn a party of 11 on the 4th (CWin); one at Almholme on the 4th (RJR); one at Spurn on the 9th & 2 at Broomfleet Is. on the 31st (GRB).

49. Gadwall. Reported from 5 ER, 11 WR & 2 NR localities, mainly from July onwards. Always present at Hornsea Mere, 2-4 up to July, breeding suspected (GRB). The Fairburn peak was 58 on 23 June (CWin). Breeding also possible in S.Yorks. Aug 19-26 brought an increase to 8 at Hornsea Mere, & 1-2 near Barnsley (GRA), Sprotborough Flash (WGD), Cherry Cobb (ADB) & Spurn. In Sept, 15 at Swillington on the 4th (GRN), 5 at Southfield Res on the 8th (RJR) & *c.*12 at Hornsea Mere. Scattered singles during Oct, with Hornsea numbers steady at 21 until a sudden rise to 47 on 11 Nov, finally dropping to 2 on 28 Dec (GRB). Gadwall increases may be due partly to introductions of imported birds. Sedbergh S.S. mention the release of *c.*900 in the Lake District. The species is to be reared by wildfowlers' associations with releases probably in 1964 (WT).

50. Wigeon. In Feb & Mar the Derwent valley & the Humber harboured most of the county's birds. Estimates on the lower Derwent floods and meadows were 4-5,000 from 11 Feb to 4 Mar (AFGW,HOB). 2-5 summered at Hornsea Mere (GRB)

& up to 4 stayed at Teesmouth until 2 June (TBR); 7 at Spurn on 3 June & 3 on 7 July, one at Scaling Dam Res on 15 & 26 June & 5 July (DGB) & one at Almholme on 14 July (RJR). Autumn passage was heaviest at Spurn on 30 Oct (200 S), *c.*300 on 2 Nov & *c.*600 on 3 Nov. No flocks in the late months reached four figures.

52. Pintail. 1-10 in the early months at 8 localities with max. 20 at Fairburn on 24 Mar (CWin) & *c.*60 in the Derwent Valley on 4-11 Feb (AFGW,HOB). Bred near Driffield, the first breeding record since 1938 (GB,PJM). 1-11 in the period 15-17 Sept at Eccup Res & 4 coastal localities. Scattered records of 1-2 in the last 3 months with 19 at Cherry Cobb on 22 Dec (GRB).

53. Shoveler. Fluctuations noted at the few waters with really large flocks: at Fairburn, an increase from 70 on 13 June to 120 on the 23rd, max. 180 on 14 Aug (CWin). Southfield Res *c.*70 on 25 Aug, 120 on 20 Sept, 84 on 27 Sept & 3 on 14 Oct (EWE,RJR). Hornsea Mere 72, of which 29 came in from the sea, on 13 Jan, 54 left for the sea on 10 Mar, 96 present on 16 Mar & one on 26 Apr; 86 on 1 Sept, 12 on the 15th, 75 on 22 Dec & 26 on the 28th (GRB). In addition to *c.*50 in the Derwent Valley on 11 Feb & 59 on 16 Nov (GRB,HOB) & 20 at Spurn on 26 Aug, parties of up to 10 were seen at 17 other waters, mainly in VC63.

55. Scaup. 1-3 at 4 WR waters between 15 Feb & 30 May (RJR *et al.*). Coast: 1-4 Jan to May at Spurn, Hornsea & Bridlington (GRB,SBO). Hornsea Mere 19 on 25 Apr & 1-2 on 24 May, 16, 24 & 30 June. In Aug, 2 at Southfield Res on the 4th (RJR) & 2 at Woodhouse Mill on the 10th (RGH,DBC). 1-5 at 5 localities in Sept & Oct, with 14 at Hornsea Mere on 20 Oct (GRB). Singles on 10 Nov at Filey Brigg (RHA), Ripley (MRS) & Almholme (TG), & at Ulley Res on the 11th (RGH). Coastal passage on 18 Nov: 61 passed S at Spurn, 74 N at Hornsea & 37 flew in to Hornsea Mere from E (GRB). On the Durham side of Tees Bay, 1,063 flew N (see *NDOR* for details). Inland on the 18th, one at Wintersett Res (CEA,DJS) & 3 at Fairburn (CWin). 1-4 at 4 waters to the year end, with 18 moving N at Atwick on 22 Dec (GRB) & 57 S at Spurn on 25 Dec (GRE).

56. Tufted Duck. No broods seen at Gouthwaite Res (AFGW). The Hornsea Mere peak was 497 on 21 Jan (GRB) & other spring max. were 43 at Wintersett Res on 3 Mar (JSA) & 78 at Fairburn on 6 Mar (CWin). Autumn & early winter flocks higher: 43 at Eccup Res & 53 at Woodhouse Mill on 10 Nov, 160 at Fairburn on 17 Nov; 680 at Hornsea Mere by 17-18 Nov, 177 on 28 Dec & 44 on 29 Dec.

57. Pochard. Most waters failed to reach the high figures of 1961. Peaks: 250 at Fairburn on 27 Jan & 140 on 17 Nov (CWin); 200 at Welton Water on 25 Jan (EHW), 713 at Hornsea Mere on 21 Jan & 870 on 17-18 Nov (GRB); 95 at Worsbrough Res on 27 Jan & 172 on 25 Nov; 95 at Walton Hall Lake on 11 Mar (JSA). 24 at Leighton Res on 21 Oct (EEJ) were 'unusual' & 124-126 at Bretton Park on 22, 25 & 29 Nov 'unprecedented' (RLB,JED). At 7 other waters, mainly E.Pennine, smaller autumn numbers with a suggestion of a mid-Nov influx.

58. Ferruginous Duck. A ♀ at Spurn on 3 Nov (RFD *et al.*).

60. Goldeneye. 250 at Hornsea Mere on 31 Mar & 19 Apr (GRB) by far the largest count; 31 at Fairburn on 17 Apr (CWin) & 23 at Gouthwaite Res on 18 Mar (AFGW); 17 at Scaling Dam Res on 5 Mar & a pair, the last of spring, on 24 May (DGB). Summer records: one at Fairburn on 23 June & 5 on 5 July (CWin); one at Hornsea Mere on 30 June & into July & Sept (GRB). After one at Blackmoorfoot Res on 21 Sept (DM), max. were: 17 at Gouthwaite on 14 Oct (AFGW), *c.*250 at Hornsea Mere on 11 Nov & 17 at Scaling Dam Res on 17 Dec . 1-9 at 26 other waters in both winters. Small numbers included in the coastal duck movements of 10-18 Nov with several inland on the 18th.

61. Long-tailed Duck. Inland: one at Stocks Res on 15 Mar (APi) & 3 on 30 Dec (JKF); one at Fairburn on 10 Nov (CWin). Coast: 1-3 at Hornsea Mere to 1 May (GRB *et al.*); 2 at S.Gare on 3 Feb, a ♂ in breeding plumage off Redcar on 10 Feb & a ♀ or imm on 23 Apr (DGB,DRS); one at Filey Brigg on 18 Feb (GRB). In autumn: 2 ♂♂ at Flamborough on 11 Nov (HOB); at Spurn, 5 on 11 Nov, one on 17 Nov & one on 1-2 Dec; one at Filey & 4 N off Hornsea on 18 Nov (GRB).

62. Velvet Scoter. Coast: 7 off Bridlington on 11 Feb (GRB), 2 at Redcar on 23 Apr (DRS) & one at S. Gare on 20 May (WN); an imm off Fraisthorpe on 27 June (JF), 4 adult ♂♂ at Flamborough on 15 July (HOB) & one at Spurn on 28 July; 1-4 between 2 Sept & 18 Nov at several points, with 21 S off Filey Brigg (RHA) & 14 at Spurn on 10 Nov, & 21 N off Flamborough on 18 Nov (GRB). Inland: one at Eccup Res on 20 Sept (GRN *et al.*), 2 at Fairburn on 12 Oct (CWin), one at Ulley Res on 10 Nov (ACri *et al.*) & one at Blackmoorfoot Res on 24 Nov (PGRB).

64. Common Scoter. Inland: one at Fairburn on 25 Mar, 2 at Southfield Res on 20 Apr, one at Gouthwaite Res from 5-13 May & 4 at Eccup Res on 28 May, 8 on 25 & 2 on 26 June; 10 at Wintersett Res on 3 June & one at Ardsley Res on 30 June. A marked influx at 11 WR Pennine waters in first half of July, max. 26 at Eccup Res on the 8th, & at Gouthwaite Res 21 on the 8th & 57 on the 11th; parties of 36 flying E at Fairburn on 19 July (CWin) & *c.*45 flying W near Kirkheaton on 29 July (JC). Smaller numbers in autumn until 1 Dec, max. 34 at Gouthwaite Res on 15 Aug & 40 (all ♀♀) at Fairburn on 10 Nov, with 1-9 at 4 waters between 11-25 Nov. Coast: reported in all months. 55 left the Humber to E, 53 flew S whilst 38 remained all day at Spurn on 22 Apr. Passage noted at Spurn (S) on 18 Nov & N in Tees Bay & off Redcar on 18 & 24 Nov.

67. Eider. Inland, an imm ♂ at Gouthwaite Res on 10 Nov, the first record for the area (MRS,AS). Coast: 1-6 in all months, most regularly at Flamborough, with 9 & 13 at Redcar on 4-5 & 10-11 Feb. Heavy passage: 7 at Filey Brigg on 10 Nov & 31 on the 11th, 20 at Flamborough & 22 at Spurn on 11 Nov; at Spurn, 41 (9 ♂♂) passed N on 1 Dec & 13 (3 ♂♂) on the 2nd, with 9 on 22 Dec. Single adult ♂♂ once in each month Feb & June and twice in Nov.

69. Red-breasted Merganser. Inland: 6 at Gouthwaite Res on 8 Aug, one on 10 Nov & 2 on 11 Nov (AFGW *et al.*); 2 at Eccup Res on 10 Nov (MD,GRN); 2 at Swillington on 13 Nov (RTP) & one at Ardsley Res on 2 Dec (RHard). Coast: 1-5 up to late May, with up to 9 at Spurn on 22-24 Apr; one at Filey on 1 July & 3 at Fraisthorpe on 2 July (GRB,JF). At Spurn 1-7 from October to the year end, including 10-11 Nov. Bred at one locality.

70. Goosander. Max. in both winters at the 3 main waters: 53 at Stocks Res Jan-Mar & 86 on 30 Dec; 40 on Eccup Res on 3 Mar & 11 on 28 Dec; 97 at Hornsea Mere on 10 Mar & 58 on 22 Dec. 1-4 at 9 other inland waters, Jan-Apr & Nov-Dec; 6 at Gouthwaite Res & 7 at Winterburn Res on 14 Apr. Coast: 4 at Spurn on 20 Oct, one on 24 Nov & 2 on 9 Dec; one off Filey on 15 Dec.

71 Smew. ♂ at Leighton Res on 16 Jan (PY); Hornsea Mere: 1-3 ♀♀ from 6 Jan to 6 Apr, with a ♂ & 3 ♀♀ on 10 Feb (GRB,ADB *et al.*). ♀ at Harewood on 24 Feb (GRN); one at Kirkby Fleetham 4-13 Mar (GEA); one on Lockwood Beck Res 4-14 Mar (ABar) & a ♂ & 4 ♀♀ at Roundhill Res on 15 Mar (PY). In autumn, 1-2 ♀♀ on Hornsea Mere 10-24 Nov (GRB) & a ♂ N off Hornsea on 18 Nov, 2 ♀♀ at Malham Tarn on 8 Dec (KH) & 3 ♀♀ at Fairburn on 31 Dec (CWin).

73. Shelduck. In the two estuaries: Tees max. 599 on 14 Jan, 648 on 10 Feb, 400 on 24 Mar, 171 on 9 Apr & 128 in July. Humber max. 71 at Spurn on 27 Mar & 58 on Apr 15; *c.*100 at Patrington Haven on 5 May, 234 at Cherry Cobb on 15 June. Tees autumn max. 220 on 10 Nov & 373 on 24 Nov. Humber: usual small numbers below Hull; up to *c.*150 in the upper reaches, but *c.*600 on 23 Dec during shooting disturbance in the Refuge, the largest count ever made on the Yorks side. (There is a large & apparently discrete population on the Lincs side near Read's Is.)

Parties left Spurn to the E on 21 July & 27 Aug. Coastal moves: 7 off Filey Brigg & 7 off Flamborough on 11 Nov, & 3 off Hornsea on 18 Nov. 27 at Hornsea Mere on 17 Sept, & 1-9 at 11 WR waters in all months excepting June, Oct & Nov.

75. Grey Lag Goose. Reported Jan-Apr, mainly in ER, but one at Eccup Res on 3 Mar, one at Gouthwaite Res from 23 Apr-2 May & one at Scaling Dam Res on 2 May; *c.*20 at Bubwith on 28 Jan; Hornsea Mere: 28 on 27 Jan, 20-21 on 10 & 24 Feb & 6, 10, 13 Mar, 11 on 24 Mar: 38 at Cherry Cobb on 7 May; 1-6 at other localities including Spurn. Autumn: 9 at Castle Howard on 19 Aug, one off Filey on 17 Sept, one at Redcar on 10 Oct, 1-4 at Hornsea Mere on 4 & 17 Nov, 1 & 8 Dec. 2 at Eccup Res on 6 Dec.

76. White-fronted Goose. 2 flying E at Spurn on 21 Dec & one at the Point there on 31 Dec.

78. Pink-footed Goose. Skeins of up to *c.*200 in several localities in Jan-Mar. Humber Wildfowl Refuge: a single (pricked ?) bird during Aug, the first of autumn 102 on 17 Sept; *c.*2-3,000 between 26 Sept & 21 Nov with an increase to *c.*6-8,000 from 14-26 Oct, & up to 400 to the year end. The roost was either on Whitton Sand (usually in Lincs) or the sandbank attached to Broomfleet Is. Reported feeding on the Wolds & on low ground near the estuary (TWH). Fewer autumn reports than usual at Teesmouth & Spurn; 16 inland records of skeins included one of *c.*60 flying NNE at Eccup Res on 18 Sept (MD).

79. Snow Goose. The bird of 1961 was last seen at Scaling Dam Res on 9 Jan. It was considered to show the characters of the Lesser Snow (TBR,PJS).

Ross's Goose. (*Anser rossii*). One at Harewood in late May & on 1 June; at Gouthwaite Res on 5 June to 26 July; at Ripley from 18 Aug & at several localities near Knaresborough into Oct; & at Swinsty Res on 20 Oct (AFGW *et al.*). The bird was ringed and was lame in the left leg (but no details of the Swinsty bird), presumably the individual reported in the Lune Valley from 1961 & almost certainly an escape. See *B.B.*, 55:570. The first Yorks record.

80. Brent Goose. All records in VC61: one at Hornsea Mere on 13 Jan & 6 on 11 Feb (GRB); 2 at Spurn on 27 Jan & 4 on the 30th; 2 (' pale ') at N.Ferriby on 23 Feb (EHW), one at Flamborough on 10 Mar (GRB); at Spurn, 4 on 20 Apr & one on 21-23 Apr, 3 on the 24th & one on 1 May. One off Filey Brigg on 16 Oct & 3 passing S on 10 Nov (RHA); 2 at Spurn on 21 Oct, 7 on 22nd, 6 on 3 Nov & 5 on 11 Nov, 2 moving S off Kilnsea on the 25th (ACre), 6 (3 ' pale ') on 1 Dec, one ' pale ' on 2 Dec & one on the 7th. 4 off Withernsea on 18 Nov. (BSP).

81. Barnacle Goose. 3 flying N over S.Gare on 13 Oct (DGB). One at Gouthwaite Res on 5 Nov (MBT). A weak bird at Hornsea 11-18 Nov (GRB).

82. Canada Goose. Max. in VC63: 121 at Wentworth on 16-26 Aug, 119 at Bretton Park on 30 Sept, *c.*80 at Nostell Dam on 4 Nov, 84 at Walton Park Lake on 10 Nov, & *c.*62 flying over Wintersett Res on 24 Nov. VC64: *c.*380 at Ripley on 4 Oct. VC65: *c.*400 at Leighton Res on 29 Sept. Several records of smaller flocks at inland waters & at Brough, Hornsea Mere & S.Gare.

84. Mute Swan. Fairburn max. were 105 & 108 on 4 & 12 Aug. Hornsea Mere 100 through July & Aug. Welton Water 37 on 11 June. 4 other waters held smaller max. *in winter.*

85. Whooper Swan. Parties apparently wintering from 1961 at: Fairburn max. 7 to Apr (CWin) & in the Dearne Valley flashes max 19 on 11 Mar to 5 at Broomhill on 31 Mar (CB *et al.*). In Jan, 23 on the 9th at Stocks Res (JKF,APi), & 1-6 at Hornsea Mere and Spurn on 3 days. Reports of 3, 12 & 13 from 3 WR waters from 11-15 Mar. Autumn: 2 at Fairburn on 20 Oct, 3-6 at Hornsea Mere (25th), Hemsworth Woodhouse Mill (27th) & Swinsty Res (28th). 1-18 at 8 WR waters during Nov, max. 31 at Broomhill on 24th (DJS). A second influx in the period 5-9 Dec: 12 passed S at Spurn on the 5th (GRE); 8 S off Filey (RHA), 21 (no juvs) to Hornsea Mere (GRB), 5 at Broomhill (CB) & one at Woodhouse Mill on the 8th; 10 wild swans flew S over Worsbrough Res (DJS) & a mixed flock of *c.*30 Whooper & Bewick's at Hoyle Mill Dam on the 9th (MNR). A larger, late Dec move mainly of flocks flying W or NW: 6 (one juv) W at Spurn, 10 on the sea at Scarborough (TMC) & 17 NW over Ilton Res (PY) on 22 Dec; 35 NW at Rossington on 23 Dec (RDM,RM); 22 W at Bottomboat on 24 & 27 Dec (CEA); 16 at Fairburn on 25 Dec (CWin); 9 at Ardsley Res on 25-26 Dec (JC), 17 on the 27th (CEA); 47 at Stocks Res (JHIL,JKF) on 26 Dec, & 6 flying over Ardsley Res on the 31st (RHard). Single dead birds were left at Hornsea Mere on 8 Dec (GRB) & a juv at Broomhill on 26 Dec (CB).

86. Bewick's Swan. 5 records in Jan, max. 15 at Fairburn on 4 Jan (CWin); 17-21 on the Derwent floods 4-18 Feb (3 imms) & 4 at Blackmoorfoot Res on 17 Feb (DM). 34 flew NE at Beighton on 11 Mar (RGH), with 2-8 at 6 other localities in Mar. 2 imms at Patrington Haven on 5, 6 & 13 May (ACre). An adult at Hornsea Mere on 25 Oct (MD) & 7 over Hemsworth on 29 Oct (MNR); 1-4 in the WR in Nov & early Dec. 2 Dec influxes: 25 at Gouthwaite Res on 8-9 Dec (MBT *et al.*); 19 & 66 (no juvs) to Hornsea Mere on 8 Dec, 58 still present on the 9th but left at dusk (GRB); 15 at Blackmoorfoot Res on 15-16 Dec (PGRB *et al.*). The second influx: 6 at Chelker Res on 21 Dec (ESS,JRR); 34 flying NW at Langsett Res (CB,DJS) & 6 (no juvs) at Aughton on 23 Dec (GRB); 7 at Eccup Res on the 24th; 25 at Fairburn, 5 at Stocks Res & 25 flying over Harrogate on 26 Dec (MD,PJC *et al.*); 21 at Stocks Res on 30 Dec & one at Spurn on the 31st.

91. Buzzard. 3 pairs reared young in the NW, with some sites not occupied. E of the breeding area, 2 in Jan & single buzzard spp. reported with increasing frequency from May to Dec.

93. Sparrowhawk. 3 pairs bred in VC63 & one (possibly 2) in 64. Single birds, occasionally 2, reported in all months excepting Feb from 2 localities in VC61, 4 in 62, 5 in 63, & 7 in 64 with ' nil ' reports for 3 VC 64 areas. Coast: one at Spurn flying S on 10 & 20 Apr & singles on 25 Sept & 5, 6 & 18 Nov; one S off Dimlington on 4 Aug.

99. Marsh Harrier. From Hornsea Mere, records between Apr & July covering 5 individuals: an imm on 1 & 8 Apr, a ♀ on 20-21 Apr & an adult ♂ on 22 & 27 Apr; a ♀ on 1 & 3 May, an imm on 6 May & an imm from 3 June to 1 July & on 18 July (GRB,AHR *et al.*). A ' cream-crown ' flying S at Spurn on 22 Apr & a ♀ on 22 Aug.

Inland: one at Fairburn on 13 Aug (JKF) & a ♀ on 21 Aug (CWin); one over Almholme on 11 Nov (RJR).

100. Hen Harrier. One at Ilton Moor on 28 Feb (PY); 2 separate adult ♂♂ moved S at Spurn on 6 May & a 1st summer ♂ on 6 Aug; a ♀ in Nidderdale on 4 Nov (AFGW,PJC); a sub-adult ♂ at Liverton Rails (Clevelands) on 24 Nov (JC,DRS) & a ♀ near Blakey Ridge (Clevelands) on 2 Dec (MDC).

102. Montagu's Harrier. A ♀ at Spurn on 20 May.

100/102. Harrier spp. 'Ringtails' at Spurn on 24 & 30 Aug, & at Welwick salting on 26 Aug (EHW).

103. Osprey. One at Spurn on 23 May (PJM) & at Hornsea Mere on 28 May (GRB).

104. Hobby. One at Spurn on 5 Sept (RFD *et al.*)

105. Peregrine. No proof of breeding & absent from 3 known sites which were used by Ravens. Single birds in 3 Pennine localities. One near Middlesbrough on 14 Feb (DRS), one at Bempton on 1 July (HOB) & one at Spurn on 30 Aug & 23 Sept.

107. Merlin. Reported from 2 Cleveland & 6 Pennine localities, but no proof of breeding & birds could not be found in some known breeding areas. Singles Jan-May & Aug-Dec at 3 places in the central plain & 3 on the coast—mainly Spurn.

110. Kestrel. Reports suggest that the species is holding its own in hill country, although in some Pennine areas breeding pairs were far fewer than in the vole plague of 1961. Autumn increase first noted at Spurn on 4 Aug with 10 present on 12 & 27 Aug, *c.*20 on 5 Sept & 18 on 7 Sept; smaller numbers at other coastal points in this period. Inland max: 5 near Stainland on 12 Aug (JED), 10 in Nidderdale on 30 Aug (A&DS) & 20 counted in an area 6 miles square near Sedbergh on 3 Sept (Sedbergh S.S.).

113. Black Grouse. Reported from 5 Pennine localities in VC64 (max. 11 ♂♂ & 2 ♀♀ at a lek) & from 2 in VC65 (max. 5 ♂♂—KH *et al.*).

115. Red-legged Partridge. W of the Boroughbridge-Leeds-Sheffield line: bred near Eccup; one at Rudding (Harrogate) in June; one shot near Ilton on 26 Dec.

120. Water Rail. No records at Spurn between 23 Apr & 27 Aug. Only Fairburn & Hornsea Mere reached double figures. The usual scattered reports of 1-3 in both winters, but 5 *seen* at Potteric Carr on 25 Nov (RDM).

125. Corncrake. One at Flamborough on 12 May (GRB). Pennines: several calling in the Sedbergh area & one killed by mower (JRH, Sedbergh S.S.); heard at 2 places near Austwick (MRS *et al.*) & one at Gouthwaite Res from 5 June to the month end (MBT *et al.*). One found dead under wires at Ogden Res on 10 Oct (CWil).

127. Coot. Hornsea Mere: 624 on 21 Jan, *c.*700 Oct-Nov *c.*1,700 on 8 Dec, *c.*950 on 16 Dec & *c.*650 on 28 & 30 Dec. Fairburn: *c.*800 on 29 Sept & *c.*1,000 on 20 Oct. Scaling Dam Res numbers again high—159 on 25 Nov. 'Exceptional' numbers in autumn at Newmillerdam (54 on 4 Nov) & at Bretton Park (max. 240) on 2 Dec. 26 on the Humber shore at Hull on 27 Dec early in the cold spell.

131. Oystercatcher. One at Gouthwaite Res & one on the ice of Blackmoorfoot Res on 7 Jan. Bred at Spurn, & a pair present at Sunk Is; a nest found at Teesport; a pair bred again on the Rye near Helmsley & unsuccessfully on the Riccal at Harome. At Spurn the largest numbers (*c.*100) were between 21 & 31 Aug; 102 at Staithes on 31 Aug. Inland: 20 flew in to Gouthwaite Res from SE on 15 Aug; 10 at Lindley Res on 25 Aug & 1-2 at 4 waters in VC63 during Aug. The largest flock (as usual) was in the Teesmouth area—*c.*360 at Coatham Sands on 28 Oct.

133. Lapwing. Absent from many districts to mid-Jan, returning during the last week of the month. Many reports of a poor breeding season, with small broods & late young. Coast: from 16-24 June, birds coming in from E or passing S (SBO, DGB *et al.*); passage between 26 Sept & 15 Oct noted from Spurn to Redcar (also NW passage over Hull on 15 Oct & large numbers in the Doncaster area on 20 Oct); a second autumn move from 2-6 Nov, heavy (S) at Spurn on 3-4 Nov & S at Filey Brigg on 3 Nov. Inland: 2 W movements widely reported in the periods 5-9 Dec & 23-27 Dec, both coinciding with cold spells, which virtually drained the county of Lapwings by the year end.

134. Ringed Plover. Spring passage: small numbers in WR from 12 Mar, max. 18 at Fairburn on 17 May; up to *c.*500 at Cherry Cobb through May, with *c.*1,300 (exceptional numbers) on 21 May (GRB). A pair hatched young by a reservoir in VC64; 8-12 pairs attempted to breed at Spurn. Low autumn figures for the Humber: 50-70 at Spurn from 4 Aug to 2 Sept; 83 max. at Cherry Cobb on 17 Aug. Small numbers in VC63 from 8 July to 29 Sept, excepting at Wintersett Res (as in 1960

& '61, in fine condition for waders) where birds were present from 28 July to 29 Sept, 10-20 from 18 Aug to 15 Sept with 40-66 from 25 Aug to 7 Sept. One near Sheffield on 10 Nov.

135. Little Ringed Plover. 15 pairs attempted to breed in 7 localities; as in 1961, bred by a reservoir; present at 3 other sites with no proof of breeding. Earliest date was 8 Apr at 2 sites. One at Spurn on 8 May; one in VC62 during May is the first record for the vice-county. Last reported from breeding areas from 2-8 Sept. 2-3 juvs at Beverley SF on 23-25 Sept (DAG, FdeB).

139. Grey Plover. Singles at Fairburn on 21 Jan & 26 Aug (CWin) the only inland records. Spring: max. *c.*120 on 6 Mar at Spurn; at Cherry Cobb an increase noted on 4 May, max. 218 on 21 May. Autumn: several moulting adults at Cherry Cobb on 20 July, *c.*50 in breeding plumage on 2 Aug; later numbers very low, max. *c.*80 at Spurn on 15 Sept.

140. Golden Plover. First reported on the Sedbergh moors on 18 Mar, 3-4 weeks later than normal (Sedbergh S.S.).

142. Dotterel. One on Urra Moor (Clevelands) on 21 Apr (APa).

143. Turnstone. Inland: 3 at Wintersett Res on 2 May (JDP) & one on 20 May (CEA); one over Blakey Rigg (Clevelands) on 16 May (PRE); 3 at Scaling Dam Res on 1 June (DGB); one at Deer Hill Res on 22 July (RCr,CJD) & at Whiteholme Res on 2 Aug (VSC,IM); 2 at Fairburn on 15 Aug & one on 18 Sept (CWin); 1-3 at Wintersett Res 28 Aug-8 Sept (CEA *et al.*); one at Scaling Dam Res on 2 Sept (HPKR) & 2 at Eccup Res on 3 Sept (MD). At Spurn, an increase in mid-Apr, max. in spring *c.*80 on 8 May; autumn 60-100 on 4-6 & 25-31 Aug, 18 Sept & 18-19 Oct, with *c.*70 on 6 Nov the last sizeable passage.

147. Jack Snipe. 1-3 in both winters in many localities, with max. 4, 5 & 7 in Oct-Dec. Not recorded between 16 May & 31 Aug.

148. Woodcock. Coast: 1-4 at Redcar, Flamborough, Bridlington & Spurn in the early Jan cold spell; first of autumn at Spurn on 19 Sept, the main influx between 7-11 Nov noted at many places, with singles to the month end; singles at Spurn to the end of the year.

151. Whimbrel. One at Staithes on 14 Jan & 17 Feb, where one was present throughout autumn 1961 (HPKR,TBR). Spring passage between 19 Apr (Spurn & Hornsea) & 24 May, mainly lower Humber, max. 10; 1-2 at 5 inland localities & 13 at Fairburn on 2 May (CWin). One at Cherry Cobb on 16 June (GRB). Autumn passage from 30 June (2 over Eston Hills-DGB) to one at Cherry Cobb on 11 Nov (GRB), most numerous through Aug; 35 regularly at Teesmouth (TBR), a flock of 52 S off Filey Brigg on 18 Aug (RHA); at Spurn, 25 on 5-6 Aug, 39 on 22 Aug & 56 on 26 Aug; fewer in Sept, but 11 on 13 Oct & one on 22 Oct. Inland: 1-5 at 7 places, & 16 at Eccup Res on 20 Aug (MD *et al.*).

154. Black-tailed Godwit. Evidence of a flock wintering from 1961 on the lower Humber at Cherry Cobb: 7-8 in Jan, no visits Feb, 2-3 in Mar, 5-10 in Apr, 8-17 up to 18 May, 4 ' grey ' birds on 19 May & 22 June (GRB,HOB). Singles at Patrington Haven on 24 Mar, Easington on 21 Apr (EHW) & Spurn on 1 May; 2 at Welton foreshore—*upper* Humber—on 24 Mar (EHW). Inland, one at Gouthwaite Res on 6-8 June (AFGW *et al.*). Autumn: singles only on 5 dates between 20 July & 16 Sept at Cherry Cobb & at Spurn on 12, 25 & 26 Aug; at Wintersett Res on 25 Aug (CEA, JAB) & at Thrybergh Res on 7 Oct (RFEB).

155. Bar-tailed Godwit. Humber: flocks in the lower estuary unusually large in the early months—*c.*150 at Cherry Cobb on 27 Jan (GRB) & at Spurn on 28 Jan; *c.*250 at Patrington Haven on 22 Apr (ACre); *c.* 350 at Cherry Cobb on 8 May & 78 on 16 June (GRB). In autumn reached 114 at Cherry Cobb by 14 Aug, *c.*150 on 11 & 14 Nov & 61 on 22 Dec (GRB,HOB); very few at Spurn, *c.*50 on 6 Dec & *c.*100 on 23 Dec. Inland: one at Gouthwaite on 10 Mar (JGWR) & a ' red ' bird on 25 July (PJC); one at Wintersett Res on 3 Sept (JAB,RNR).

156. Green Sandpiper. One near York on 1-2 Jan (TH,NO) & at Spurn on 4 Jan; 1-3 in the Dearne Valley & at Adwick-le-Street SF on 7 & 28 Jan, 3 & 4 Feb, 18 & 24 Mar & 8, 15 & 22 Apr (TMC,RJR *et al.*); the first at Fairburn on 19 Apr (CWin), 4 at Hornsea Mere on 19th & one on 23 Apr (GRB). One at Coatham Marsh on 1 June (WN). After one at Flamborough on 24 June (GRB), 1-8 widely reported July-Sept; records of 1-3 in Oct-Dec from WR only, at 5 localities in Oct, 3 in Nov & one at Staveley in Dec (NEA) & one near Worsbrough Res on 2 & 30 Dec (DJS *et al.*)

157. Wood Sandpiper. Spring: one at Spurn on 7, 8, & 19 May & one at Wintersett Res on 20 May (CEA). One at Spurn on 9 June. Between one at Fairburn on 29 July (CWin) & the last at Spurn on 1 Oct, 1-3 at 6 ER & 5 WR localities, most in Aug & particularly from 15-25 Aug—a fairly heavy autumn passage.

159. Common Sandpiper. One near Masham (RCh) & Ossett (AF,RW) on 12 Apr. Coastal passage between 20 Apr & 25 May with no noticeable peaks. Breeding suspected at Blaxton (AEP,JB). Autumn passage: one at Brough on 23 June, largest numbers from 14-19 Aug; the last at Catcliffe, Hornsea Mere & Spurn on 29 Sept, 2 at Gouthwaite Res on 2 Oct & one at Staveley on 6 Oct.

162. Spotted Redshank. Records in recent years suggest a tendency to winter in the lower Humber: at Cherry Cobb (*see also* 1961 *OR*) 5 on 11 Jan & 2 on 27th, no visits Feb, one on 3 & 17 Mar, 2 on 21 Apr & one on 28 Apr; 2 at Patrington Haven on 5 May & one at Spurn on 6 May (GRB,HOB,SBO).

A heavy & widespread autumn passage commencing with a summer plumage bird at Fairburn on 9-10 July; many reports of singles up to mid-Aug & from then on to mid-Sept, 1-6 at Scaling Dam Res, 8 WR (mostly E.Pennine) & 8 coastal & Humber localities. Inland max. 8 at Bottomboat on 1 Sept (CEA,JABo) & 4 at Wintersett Res on 8 Sept (DJS). Humber: up to 6 at both Cherry Cobb & Patrington Haven where a remarkable party of 17 on 23 Sept (ACre) was the largest party ever reported in the county. The last inland were singles at Wintersett Res on 16 Sept (JABo) & at Fairburn on 30 Sept (CWin). One off Filey Brigg on 4 Oct (RHA), 1-2 at Spurn up to 14 Oct & one at Cherry Cobb on 11 & 24 Nov (GRB).

165. Greenshank. Spring: one at Flamborough on 10 Mar (GRB) & on 26 & 28 Apr (AJWi); at Spurn, one on 20 Apr, 3 on 21st, 3 on 3 May, 4 on 7 May; one at Cherry Cobb on 7 & 21 May (GRB). In June, singles at Spurn on 9th, at Cherry Cobb on 16th & Gouthwaite Res on 20th (GRB,AFGW). A strong autumn passage widely reported from many coastal & inland localities, apart from the favoured saltings, between 1 July & 20 Oct; largest numbers in Aug, with 7-11 at Blackmoorfoot Res, Woodhouse Mill, Fairburn, Swillington & Wintersett Res; 16 at Cherry Cobb on 12 Aug. Smaller numbers through Sept, max. 10 at Cherry Cobb on 15th. 1-2 up to 20 Oct at 2 ER & 5 WR localities; the last at Spurn on 2 Nov; one at Scout Dike Res on 11 Nov (ANS) & one at Patrington Haven on 2 Dec (ACre).

169. Knot. Spring: singles inland at Worsbrough Res on 18 Mar (CB,DJS), at Aldwarke S.F. on 3 Apr (WGD) & at Settle in early May (Giggleswick S.S.). The large tidal flights of ' grey ' birds at Patrington Haven ceased in the period 19-23 Apr (HOB). An early autumn passage mainly of ' red ' birds first noted at Filey Brigg—37 passing S—& one at Wintersett Res on 7 July (RHA,JSA); small numbers moved S on the coast from 20-28 July; *c.*50 at Patrington Haven on 21 July, *c.*120 at Cherry Cobb on 2 Aug & *c.*500 ' all red ' on 4 Aug (HOB). Inland: 2 at Gouthwaite Res on 22 July & one to 15 Aug (AFGW *et al.*); singles at Almholme (RJR) & Wintersett Res on 4 Aug (CEA,DJS); 2 at Fly Flatts Res on 21 Aug & 7 on 27th, 2 at Thornton Moor Res on 21 Aug (DAS); at Wintersett Res, 8 on 5 Sept & one to 15th, 2 on 9 Nov & 4 on 18 Nov (JC *et al.*); one at Gouthwaite Res on 17 Nov & over Ardsley Res on 23 Dec (RHard). Large flocks as usual in both winters in both Tees & Humber, though at Spurn not reaching *c.*4,000 until mid-Nov. 130 passed N off Hornsea on 18 Nov, one of the ' duck days ' (GRB).

170. Purple Sandpiper. Present in both winters at Filey Brigg, less regularly at Bridlington & increasingly at Sewerby-Flamborough. Other records: 19 at Staithes on 10 Feb (HPKR), 2 at S.Gare on 15 Sept, 1-2 at Spurn on 19-20 Sept; one found dead under wires near Castleford on 23 Sept (per RFD); one by Hornsea Mere on 20 Oct (GRB), 5 at S.Gare on 24 Nov & 2 on 2 Dec (DRS); one at Spurn on 5 Nov & 9 Dec.

171. Little Stint. One at Woodhouse Mill on 17 May (RGH). Autumn passage small, between 12 Aug (Cherry Cobb) & 25 Oct (Spurn), with a minor influx on 29-30 Sept. Inland, singles at Fairburn on 18-20 Aug (CWin), Scaling Dam Res on 19 Aug (TBR), at Thrybergh Res on 26 Aug & at Wintersett Res on 25, 26 & 29 Aug (CEA, JBH *et al.*); at Woodhouse Mill on 29 Sept, Wintersett Res on 29-30 Sept, & 2 at Stanley SF on 29th & 4 on 30 Sept (RGH,MNR *et al.*). 2-9 at Cherry Cobb from 9-16 Sept (GRB), one at Flamborough on 29-30 Sept (AJWi). At Spurn 3 on 22 Aug & one in the Lagoons area on 29-30 Sept & on 1, 6 & 7 Oct.

179. Curlew Sandpiper. One at Cherry Cobb on 18 May & 5 on 21st (GRB, HOB). Autumn: a remarkable total of *c.*50 adults varying from full breeding dress to full winter at Cherry Cobb on 2 Aug (HOB)—the largest flock 17; 3 on 12 Aug &

one on 30 Aug (GRB); at Spurn, one on 29-30 Aug; 2 at Broomfleet Is on 31 Aug (GRB); one at Wintersett Res on 3, 5 & 16 Sept (JABo,CEA *et al.*); & one at Cherry Cobb on 29 Sept.

181. Sanderling. Inland: singles in May at Scaling Dam on 7th & 24th (PHa, DGB), at Settle SF through the month, with 2 in first week (Giggleswick S.S.); at Fairburn on 17th & 19th, 4 on 18th (CWin), Wintersett Res on 20th (CEA) & Aldwarke SF on 21st (JMBa). Autumn: one at Deer Hill Res on 22 July (DMal); at Gouthwaite Res—one on 21 July, 3 on 22nd (when 95 recorded at Spurn), & 2 from 4-11 Aug (AFGW); one at Almholme on 4 Aug (RJR); 4 at Wintersett Res on 4 Aug & one on 11 Aug, 7 & 16 Sept (CEA,JABo,DJS). *C.*40 moved N off Hornsea on 18 Nov (GRB)—see also Knot.

184. Ruff. Singles at Scaling Dam on 11 May (PJS) & 8 June (DGB) & at Wintersett Res on 2 June (CEA). A good autumn passage (see also *NDOR*) from 8 July to 30 Sept, greatest numbers between 8 & 30 Aug & smaller parties from 1-15 Sept with a small influx 27-29 Sept. Inland max.: 9 at Scaling Dam in Aug (DGB); 9 at Almholme on 1 Sept (RJR), 7 at Blaxton from 8-27 Aug (AEP,JB), 11 at Stanley SF on 19 Aug (CEA,JABo) & 6 at Wintersett Res on 1 Sept (DJS); also smaller numbers at these & 12 other WR & 2 NR localities. Humber: the good Ruff salting at Cherry Cobb held 14 on 12 Aug, 26 on 17th & 12 on 30th, 10 on 15 & 29 Sept (GRB,HOB); Spurn 11 on 31 Aug, 5 on 1 Sept & one on 14 Oct. The last—one at Fairburn on 21 Oct (CWin).

188. Red-necked Phalarope. One at Flamborough on 19 May, probably also the same bird on 18th (GRB).

193. Arctic Skua. Spring: 3 at Spurn on 26 Mar & 22 Apr; at Flamborough, one on 25 Apr, 4 on 26 May & 2 on 27th: one at Hornsea on 26 May (GRB). Autumn: present on the coast between 24 June & late Oct, very large numbers from early Aug to mid-Oct with an unusually high proportion of pale-phase adults. In Aug, ' huge numbers harrying terns & Kittiwakes ' in the Tees Estuary with 60 in view at one time on 12th, 80 on 25th & 150 on 26th & 28th (JABa,PJS—but see also *NDOR*). Smaller numbers at Flamborough & Atwick on 26 Aug, but 100 plus passed S at Spurn on 27 Aug. Again at Spurn, *c.*80 Arctic & *c.*180 skua spp. moved S during a large sea-bird movement on 11 Sept, whilst *c.*50 were still at Teesmouth on 30 Sept (JABa). A large passage at Spurn on 26 Oct when 135 skua spp. moved S in 1¼ hours & later 287 spp. with 39 definite Arctics. Within the Humber, 2 chased wader flocks at Cherry Cobb on 19 Aug (ADB) & one W of Hull on 9 Sept (JC). 1-3 were seen off Hornsea, Withernsea & Spurn during the duck passage of 18 Nov (BSP,GRB, SBO).

194. Great Skua. 2 at Flamborough on 20 May (GRB). One at Fraisthorpe on 27 June (JF) & at Spurn on 11 June & 6 July. 1-2 at several coastal points on many days in Aug, & 1-3 more frequently in Sept with max. at Spurn of 16 on 18 Sept & 10 on 19th. Singles at Filey, Flamborough & in the Humber off Hull on 5 days in Oct, on 5 days at Spurn in Nov, the last on the 18th & 2 off Hornsea on the 18th (GRB).

195. Pomarine Skua. One at Flamborough & at Hornsea on 26 May (GRB). One off Filey Brigg on 28 July (RHA); singles at Spurn in Aug-Sept, 2 on 12 Sept; at Flamborough, on 2 & 9 Sept, 2 on 19th & 30th, off Atwick on 17-18 Sept (GRB); 2 at S.Gare on 13 Oct (DGB). At Spurn on 4 days in Oct-Nov & 7 identified during the sea-passage on 26 Oct (see also Arctic Skua). On this date, Pomarines predominated in a large skua movement S on the Durham side of Teesbay, suggesting that some of the unidentified Spurn skuas may have been this species. One at Spurn & 2 at Hornsea on 18 Nov (GRB,SBO).

196. Long-tailed Skua. Single adults at : Spurn on 1 June, 12 Aug & 30 Aug; & Atwick on 30 Aug (LS).

198. Great Black-backed Gull. Many observers again stress the increasing numbers wintering inland, at roosts & rubbish tips. The roost at Gouthwaite Res reached *c.*350 by 25 Feb but was smaller during autumn, max. 90 on 18 Nov (AFGW). At Spurn, 4-500 max. on several days in Sept, a minor peak of *c.*150-200 on 10 & 11 Nov. During a difficult count of a vast gull flight to & over Southfields Res, *c.*50 came in to roost & *c.*150 passed towards the Humber on 16 Dec (RJR,WGD). *C.*50 roosted at Ardsley Res on 23 Dec (RHard).

199. Lesser Black-backed Gull. Largest numbers on passage & in winter again in the E.Pennine areas of VCs 63, 64 & 65 (in contrast with quite insignificant numbers in VCs 61 & 62) with variations from previous years, & some new localities reported: *c.*600 roosting at Blackmoorfoot Res on 9 Aug (OSW), *c.*420 on Doncaster

Airport (DK,PM) & 1,000 plus roosting at Almholme (RJR) on 16 Aug, & *c.*650 at Ardsley Res on 23 Dec (90% Scandinavian-RHard). At established roosts, max. were 250 at Fairburn on 28 Feb (CWin), *c.*600 at Eccup Res on 19 Sept (MD); at Gouthwaite Res, 390 on 5 Oct, 524 on 23rd, 254 on 11 Nov & 450 on 1 Dec falling to 55 at the year end (AFGW, WCWal); *c.*400 at Leighton Res on 4 Oct & *c.*350 on 4 Nov (RCh). A pair bred on the coast.

200. Herring Gull. An estimated 9,000 passed over Southfields Res in the direction of the Humber on 16 Dec (RJR, WGD); the Humber gull roost on Whitton Sand is now known to hold large numbers of Black-headed, Common & Great Black-backed Gulls, but Herring have always been considered as comparatively scarce.

202. Glaucous Gull. An adult at Scaling Dam Res on 4 & 11 Mar (DGB,PJS). Coast: a 1st W at Spurn on 20 Jan, an adult on 17 Feb & an imm on 5 & 31 Mar; at Bridlington—a 1st W on 14 Jan & 18 Feb (GRB,HOB), an imm on 19 Feb (JABa), a 2nd W on 22 & 24 Feb & an adult on 24 Feb (GRB); an imm on 7 Apr at Saltburn (DGB). A 1st W at Flamborough on 11 Nov (HOB) & one at Spurn on 18 Nov; a 2nd W at Filey Brigg on 8 Dec (RHA) & one at Scarborough on 23 Dec (TMC).

203. Iceland Gull. An imm (probably 2nd W) near Hatfield Moor on 6 Jan (RJR,AEP,JB). A 2nd W at Bridlington on 18 Mar (JRM,RS,CWo); a nearly full adult at St. Andrew's Dock, Hull, on 31 Dec (WBS).

205. Mediterranean Black-headed Gull. An adult at Spurn on 21 Oct (JMBu,MD,PHGW *et al.*).

207. Little Gull. Inland: one at Ilkley SF on 31 Mar (RCP); 2 1st S at Fairburn on 6 May & another from 16-22 May (CWin *et al.*); one found at Eccup Res on 9 Dec (MD *et al.*). Coast: 1-2, mainly imms, reported from Scarborough, Bridlington & Spurn on 5, 25 & 27 Feb & 3 Mar, & an adult at Saltburn on 2 Apr (ABal, TMC,WKR,SBO); 2 at Spurn on 29 May. In Aug, one at Redcar on 14th & 2 on 30th (DRS); one at Spurn on 22 & 27 Aug. Sept: 1-3 on 12 days at Spurn, Hornsea Mere, Fraisthorpe & Redcar (GRB,AHR *et al.*). Oct: 2 at Spurn on 3rd, one at S. Gare on 13th (DGB) & at Hornsea Mere on 16th (RHA). One at Spurn on 11 Nov & an adult at Hull on 27 Dec (WBS).

208. Black-headed Gull. Large numbers in Sheffield during the first week in Jan, dropping after the 6th as the snow went (RGH). The Fairburn roost held *c.*9,000 on 23 Mar (CWin). In the last 4 months, 3,000 at Eccup Res on 5 Sept & 8 Oct (MD *et al.*); *c.*6,250 at Southfields Res on 16 Dec (RJR), *c.*6,000 at a Sheffield SF on 18 Dec (RGH) & *c.*3,000 at Ardsley Res on 23 Dec (RHard).

210. Ross's Gull. An adult in winter plumage at Bridlington on 17-19 & 22 Feb, the second county record (B.Richards *et al.*). For full details see *BB*, 55:480.

211. Kittiwake. After the great storm of 17 Feb, small numbers of adults & imms on the coast, *c.*20 tired-looking birds resting on Bridlington Harbour on 24-25 Feb; *c.*50 corpses found during searches for dead Fulmars. Inland: dead birds found at Sheffield on 20 Jan & 17 Mar, Gouthwaite Res on 17 Mar, Broomhill on 18 Mar & Adwick-le-Street on 15 Apr; singles seen at Blackmoorfoot Res on 3 Feb, Wintersett Res on 3 & 18 Mar & at Eccup Res on 26 June. A new breeding colony of 6-7 nests at Huntcliff, Saltburn, possibly occupied in 1961; a summer roost on a cliff face at the extreme tip of Flamborough Head, possibly the start of another new site. Very large numbers on the coast Aug-Sept & many reports of flocks of up to several hundreds resting on the shore, especially the sandy Holderness beaches; at Spurn, *c.*750 gathered at the Point on 25 Sept. *C.*6,000 present at Teesmouth from mid-Aug to early Sept, max. probably *c.*10,000 about 14 Aug (DRS). One seen near Barnsley on 30 Dec (GRA).

212. Black Tern. A poor spring passage, 1-5 at Eccup Res, Fairburn, Gouthwaite Res, Hornsea Mere & Spurn between 14 Apr (Spurn) & 7 June (Fairburn) with singles at Gilberdyke on 3 May & Patrington Haven on 5 May. A rather stronger autumn passage from 12 July to 21 Oct, with no apparent connection between coastal & inland records; at Fairburn, max. 12 on 15 Aug were the last; 15-16 at Blackmoorfoot Res on 15 & 20 Aug; 6 at Wintersett Res on 3 Sept; at Hornsea Mere up to 21 Oct, max. 7 on 7-8 Sept. 1-2 at 2 other WR waters & 4 coastal points.

217/218. Common/Arctic Tern. A small spring passage from 13 Apr, parties of 1-8 at many WR & coastal localities; max. 25 at Spurn on 20 Apr, 19 at Fairburn on 22 May & 19 at Eccup Res on 29 May. Breeding attempted again (a pair of Common unsuccessful) in S. Yorks. A heavier autumn coastal passage: max. *c.*1,000 at Spurn on 9 Aug, when only Arctic were identified, & *c.*630 S on 23 Sept. 1-3 inland

at 12 WR places up to late Sept; 2 over York on 6 Oct & singles at Fairburn on 7 Oct, Knaresborough SF on 27 Oct, at Spurn on 31 Oct & Filey Brigg on 3 Nov.

219. Roseate Tern. One flew N over Southfield Res on 28 Apr (RJR,JAP).

222. Little Tern. No proof of breeding success at either Spurn (where a high tide washed away nests with eggs) or Redcar. At Spurn, 2 on 21 Apr, max. 22 in spring. One off Hornsea on 26 May (GRB). Inland: 2 at Fairburn on 13 Aug, the first for the area (CWin). A very small autumn coastal passage, the last 6 at Flamborough on 17 Sept (GRB) & one at Spurn on 4 Sept & a very late bird on 19 Oct.

223. Sandwich Tern. First reported from Filey on 7 Apr (RHA), Spurn on 8th & Redcar on 9 Apr (DRS); spring peak of 45 at Spurn on 26 May. Good numbers in Aug-Sept on the coast. A party of 34 over Acklam, Middlesborough on 10 Sept (JVH). *C.*20 at S.Gare on 7 Oct (MRS) & one at Flamborough on 21 Oct (GRB).

224, 227, 230. Razorbill, Guillemot, Puffin. At Spurn, N passage heaviest on 26 May with 112 Razorbills (& *c.*200 probables), 48 Guillemots & 12 Puffins; *c.*150 auk spp. passed S on 10 June; 110 & 225 on 19-20 Sept & *c.*180 on 7 Oct, both days of sea movement (SBO).

226. Little Auk. One found near Armthorpe (*cf* 1961 *OR*) on 2 Nov was released at Blaxton 2 days later (RDM *et al.*). 2 at Spurn, one flying S with *c.*20 Starlings, on 3 Nov & one on 5th; 7 passing S at Atwick on 17 Nov (GRB) & one at Withernsea on 18th (BSP). One at Hornsea on 16 Dec (GRB).

229. Black Guillemot. One in Bridlington Bay on 18 Sept (GRB).

232. Stock Dove. 34 flushed from the Point poplars at Spurn on 2 Jan, with smaller numbers on 36 days to the year end. The Hornsea Mere flock reached *c.*700 on 9 & 16 Dec (GRB).

235. Turtle Dove. One at Cherry Cobb on 21 Apr (GRB) & 2 near Doncaster on 23rd (DK). Spring passage at Spurn mainly between 19 & 24 May (20 on 20th) & from 17 to 22 June (17 on 19th); one at Flamborough on 17 June (GRB) & a party of 26 in a stackyard at Armthorpe on 26 June (TG). A pair bred near Finghall (Leyburn) on the border of the bird's range (GEA). Autumn: 1-2 at Spurn on 6 days from 30 June to 1 Sept; one at Flamborough on 14 & 23 Sept (DAS); singles in the Dearne Valley on 5 days in Sept, the last on 25th (RJR,JBH,AEH).

—. **Collared Dove** (*Streptopelia decaocto*) VC61: breeding proved or suspected in 10 localities in E half, including 2 new sites, & a considerable spread in Hull. VC62: present in Middlesborough & Whitby, heard once in Malton, 2 at Kirkleatham in June & one found dead near Thirsk in May. VC63: a considerable spread in Sheffield, bred in the Wheatley district of Doncaster & possibly at Sprotborough. VC64: present in several Leeds localities. Normally resident in breeding areas, but passage suggested by records of 1-3 at Spurn between 24 Apr & 1 Oct.

237. Cuckoo. 14 arrival dates between 18 & 26 Apr. Reports of decreases from several areas, including Spurn where never more than 4 on any day in spring, or than 6 in Aug.

241. Barn Owl. Reported from 27 localities, with proof of breeding in 3.

247. Tawny Owl. One flying over fields near Kilnsea on 10 Aug & one at the Point (Spurn) on 16 Sept (SBO).

248. Long-eared Owl. Bred near Harrogate, the first recent record for the area (JRM) & 2 pairs, probably 3, near Sheffield (RGH,ACri,DBC). One at Stocks Res on 6 May (KH) & one found dead at Almholme on 10 May (RJR). Autumn: one at Spurn on 12-14 Oct, 6 (5 in one bush) on 10 Nov, 5 on 11th, 2 on 12th & singles on 17, 18 & 22; one in Locke Park, Redcar, on 10 Nov (WN). 2 at Flamborough on 23 Dec (DAS) & one near Wintersett Res on 29 Dec (DJS).

249. Short-eared Owl. Reported as absent, or present in greatly reduced numbers in the 1961 breeding areas (*cf* Kestrel); breeding only recorded in one Pennine area of VC63 & probably in one in 65. Largest numbers in the early months were 7 together at Patrington Haven on 7 Jan (ACre), 4 on 24 Mar (HOB); up to 6 on Rombalds Moor during the year (JCL). 1-2 mainly from coast & Humber up to 24 Apr, on 5-6 May & singles at S.Gare on 20 May & Spurn on 25 June. From 15 July, 1-2 again in these areas & in 6 inland localities, much less frequently than in 1960 & 61.

252. Nightjar. Singing ♂♂ or pairs present in VC62: 2 near Guisborough (DSS) where ' scarce this year ' (DGB); 3 near Ampleforth (PRE); 3 at Clay Bank (PHa). VC63: at Blaxton (per AEP,JB); near Doncaster (per RDM,RAM); near Wintersett Res (JDP,MNR). VC64: one at Harewood (MD,SJW); 2 near Barden (ESS); 7 N of Harrogate (MRS,HMJ) & on Snowden Moor (SJW *et al.*).

255. Swift. Reported in 16 localities in Apr from 20th; main arrival noted at Ilkley on 29-30 Apr (OMP), 420 over Hornsea Mere on 30th (GRB). Many reports of large concentrations over water in May-June, from ' hundreds ' at Almholme, Fairburn, Sheffield & Worsbrough Res on several dates between 10 & 30 May & Scaling Dam Res on 13 May, to massive gatherings at Hornsea Mere estimated at 15,000 on 19 May. At Hornsea numbers remained high through June, max. *c.*25,000 on 16th & *c.*12,500 on 19th (GRB). At Spurn, small S passage in early May, more on 6-9 June, *c.*4,000 on 14th, *c.*8,000 on 19th, falling off from 20 June; heavy S passage again on 19 (*c.*2,000) & 21 (*c.*5,000) July, & the last large moves on 30-31 July & 4 Aug (SBO). Aug gatherings smaller than in May-June, although high at Esholt SF on 7th (*c.*1,500) & *c.*1,100 on 11th; max. at Hornsea Mere *c.*950 on 19th Aug. Passage noted in 4 WR localities on 28-29 Aug. 5 Singles in Oct, the last at Spurn on 11th & 19th.

262. Green Woodpecker. Singles at Spurn on 21 Apr, 14 & 17 Aug & possibly a different bird on 19 Aug.

263. Great Spotted Woodpecker. Spurn: one on 13 Apr; up to 4 from 19-30 Sept, then 1-2 on 14 days to 25 Nov; 5 were trapped during this autumn influx, when they were often seen on poles & elsewhere in various parts of the peninsula. Danish sources report very large ' invasion ' type movements of this & other woodpecker spp. in the Baltic countries this autumn.

264. Lesser Spotted Woodpecker. Reports of singles or pairs from Ampleforth, Thornton Dale, near Helmsley, near Doncaster (bred), Armthorpe, Bretton Park & Adwick-le-Street, Eccup, Ripley & Masham (bred).

271. Woodlark. One inland record on 9 June (JJN). Singles at Spurn on 24 Apr & 9 Oct.

272. Skylark. Small NE moves in the Sheffield-Doncaster area in second half of Jan; small S passage noted at Spurn on 28 Jan, 18 Feb, 25, 30 & 31 Mar & on some days in Apr; similar numbers moved W or NW at Redcar on 19 Feb, 17, 18, 25, 28 & 31 Mar & 8 Apr. Autumn passage from 22 Sept on the coast, at Spurn heaviest on 27 & 29 Sept, on 2 & 24 Oct & 3-4 Nov; NW passage at Redcar on 6 & 15 Oct, & several reports of SW-NW moves in the central plain on 13-14 Oct; many at Flamborough on 14 Oct, & 200 plus on the cliff tops at Filey Brigg on 3 Nov. *C.*100 flew NW over Rossington & N at Ossett on 23 Dec; *c.*1,000 on stubble at Staveley on 27 Dec.

273. Shorelark. One at Atwick on 13 Jan (GRB). The Flamborough birds of 1961 associated with Skylarks & were often hard to find & count; 21 on 7 Jan, 18 on 14th & 8 on 28th; 7 on 11 Feb & one on 18 & 25 Mar (GRB,HOB). At Spurn: up to 3 on 4 days in Jan-Feb, up to 7 on 3 days in Mar & one from 2-6 May. Autumn; one at Flamborough on 29 Oct & 3 on 18 Nov (GRB). At Spurn—2 on 3 Nov & one on 4th; 1-2 on 3 days in Dec.

274. Swallow. First reported from 7 localities between 6 & 11 Apr, more widely from 19-23 Apr (19th mainly coastal, 22nd inland). Large numbers at Hornsea Mere through May; a poor & late breeding season in ER, with small broods (GRB). At Spurn, spring passage heaviest from 6-10 May, with *c.*200 passing on 9 June; autumn passage from 30 July, heavy on 16-18 Aug (*c.*4,550 on 18th), from 4-8 Sept (*c.*8,000 on 5th) & on 11, 15 & 16 Sept; max *c.*700-850 on 22, 23 & 27 Sept & 2 Oct. The massive Fairburn roost was late in starting; *c.*200,000 on 24-25 Sept, *c.*30,000 on 26th & *c.*600,000 on 1 Oct; *c.*80,000 on 2nd, *c.*400 on 4th & one on 11 Oct. An exodus from Hornsea Mere in the first two weeks of Oct. 1-9 at 14 localities to late Oct, & 1-3 on 4, 11 & 15 Nov.

276. House Martin. 5 arrival dates in 19-21 Apr & seen in 6 localities on 22nd. 1-2 on 4 dates in Nov, the last at Spurn on 14th.

277. Sand Martin. One at Fairburn on 29th, the only Mar record; one at Hornsea Mere on 1 Apr; 16 other first dates between 6 & 25 Apr. Large numbers over Hornsea Mere in May-July, commencing with 104 on 19 Apr & *c.*2,000 on many days in the period. *C.*1,000 at Fairburn on 4 May. Autumn numbers at Fairburn: *c.*6,000 on 8 July, *c.*40,000 on 13 Aug & fewer to 3 on 29 Sept; *c.*70,000 *passed through* on 1 Oct, *c.*2,000 present on 2nd & 70 on 4 Oct. 4 other Oct records, the last at Flamborough on 21st.

279. Raven. Bred at 5 Pennine sites (*cf* Peregrine). Max, 5 in Upper Nidderdale in the last four months (A&DS *et al.*) & 6 near Malham Tarn on 8 Dec (KH).

281. Hooded Crow. 5 at Redcar on 9 Jan & 3 on 3 Feb; one near Guisborough on 28 Jan-3 Feb; 1-2 at Sewerby on several dates from 7 Jan-27 Apr; singles at

Barden Moor (near Catterick Camp) on 14 Mar & at Fairburn on 10 Apr; at Spurn on 4 Apr dates & 7 on 6 May. Singles at Spurn, Sewerby & Winestead on a few days in Oct-Dec; 3 & a possible hybrid at Scarborough on 22 Dec.

282. Rook. Passage at Spurn was more noticeable in spring than in autumn, with *c.*50 on 30 Mar & 12 Apr; *c.*180 *Corvidae* on 26 Apr were considered to be mostly Rooks.

290. Coal Tit. 2 occurred at Spurn on 20 Apr & one on 23rd.

293. Willow Tit. Possibly increasing in VC62, where reported from: Redcar (DRS), Lockwood Beck (DGB,DRS), regularly near Guisborough (DSS), in Sleightholmedale (MDC), Gilling (PRE) & Castle Howard (JJN).

294. Long-tailed Tit. 7 came in from the sea to Flamborough on 7 Jan (GRB). 4 at Spurn on 22 Sept & one on 13 Oct.

295. Bearded Tit. 1-5 on several dates in one locality.

296. Nuthatch. Reports suggest a further increase & spread (*cf* recent *ORs*), particularly in VC62 where 11 singles or pairs present in 8 dales & at Hovingham. Several heard near Thwaite (GJWH)—' higher up Swaledale than previously recorded ' (RCh).

298. Treecreeper. One at Spurn on 6 July.

299. Wren. Bred in the Point area at Spurn.

300. Dipper. Sedbergh S.S. report delayed breeding in their area, & a second brood reared in only one of 35 nests located. One with the characters of the Black-bellied race seen in flight & perching on a groyne at Spurn on 21 Oct, last seen flying high to W; another at Worsbrough Res from 11 Nov-9 Dec was trapped during its stay (TMC,AA *et al.*). These appear to be the first county records of this race since 1911.

301. Mistle Thrush. Up to 4 at Spurn on a number of days to mid-May & noted again between 13 Sept & 19 Nov. The largest parties reported were 62 near Doncaster on 15 Aug & 52 at Eccup on 18 Sept.

302. Fieldfare. Very few reported inland in early Jan, when large numbers were at Spurn—*c.*1,500 on 1st & *c.*800 on 2nd. Small NE moves in several areas between 14 & 24 Apr; several May records up to 19th. One at Spurn on 13 Sept; a very large influx commencing 11 Oct (Redcar, Sedbergh & Spurn) & continuing to mid-Dec when weather moves also occurred. Considerable numbers appeared at Spurn after 11 Oct, with peaks on 19 & 27 Oct, 7 & 25 Nov & 1-2 Dec—' generally more than average ' (SBO). 13 inland arrival dates from 11-15 Oct; very large numbers near Doncaster on 24-25 Oct & on 10-11 Nov, & in the Broomfleet-Howden area on 3, 10 & 25 Nov; smaller numbers at Flamborough on 2 & 16 Dec & at Filey Brigg on 15 Dec. Reported seeking food in built-up areas in the last week of the year.

303. Song Thrush. A comparatively light autumn passage from 4 Oct (Filey Brigg & Spurn) continuing to early Dec; max. at Spurn on 4 & 12 Oct. Only report of large numbers was of a heavy night passage over Hessle on 5/6 Nov (DAG).

304. Redwing. Heavy passage at Spurn during 1-4 Jan, & parties moving SW over Sheffield & Wintersett Res on 1 Jan. Numerous in Hull, including city centre, through Jan. *C.* 30 dead at Flamborough on 14 Jan. Several in May up to 19th. After the first two at Spurn on 19 Sept, a large passage (*cf* Fieldfare) from 4 Oct to 16 Dec reported from many inland & coastal points. At Spurn the largest numbers passed in the period 4-22 Oct, max. on 11th when thousands arrived at Redcar; 5 inland ' listeners ' heard many calls at night on 11th. Smaller numbers at Spurn from 2-8 Nov & many heard inland in the same period. Cold weather moves to coast & into towns on 29-30 Dec.

307. Ring Ouzel. One on Ilkley Moor on 29 Mar (RCP) & complete arrival in Upper Nidderdale by 3 Apr; as late as 15 Apr in 3 Pennine areas & 17th at Ilton (PY) 1-3 at Spurn, Skipsea & Flamborough between 13 Apr & 12 May. Autumn, only at Spurn on the coast: 4 on 13 Sept, fewer on 10 days in Sept-Oct & one on 11 Nov.

308. Blackbird. Up to 50 (on 2nd) at Spurn in early Jan; spring passage there from late Mar (*c.*60 on 27th) to 20 Apr; increases noted around Doncaster on 17-18 Mar & 19 Apr. A moderate autumn passage first reported from Filey Brigg on 15 Sept, Flamborough on 4 Oct & Spurn on 7 Oct with largest numbers on 6-9 Nov, max. *c.*3,000 at Spurn on 7 Nov. Light passage continued up to early Dec, probably merging with weather moves during the 3 Dec cold spells.

311. Wheatear. Singles near Harrogate on 27 Mar & at Spurn on 30th. The next 6 arrival dates between 5 & 10 Apr; subsequently, coastal numbers were high,

max. at Spurn *c.*50-60 on 7-8 May & 21 at Flamborough on 27 May. None seen on moorland W. of Huddersfield up to 3 May (JED). 3 on the Humber bank near Paull on 17 June. Fairly light autumn passage, max. *c.*70 & 50 at Flamborough on 27 & 28 Aug, *c.*20 at Spurn on 28 Aug & 8 Sept, & *c.*35 at Flamborough on 15-16 Sept. 15 at Fairburn on 18 & 25 Aug. 1-2 on the coast up to mid-Oct, & one at Hessle on 24 Nov (DAG).

312. Desert Wheatear. ♂ on the Humber bank between Kilnsea & Easington from 16-19 Apr (GRN *et al.*), the third county record. For details see *Nat*, 883:146 & SBO log.

317. Stonechat. 1-4 at Spurn up to 29 Apr; 1-2 on single days in this period at Wroot, Fairburn, Ilton, Grimwith Res & Filey. One near Ampleforth on 6 May & at Fairburn on 29 July. 1-3 at 7 coastal points on 10 days between 27 Aug & 22 Dec, most records in Oct & Dec; singles inland near Harrogate on 10 Oct, Eccup on 19 Oct, near Wakefield on 4 Nov & Blackmoorfoot Res on 2 Dec.

318. Whinchat. Singles at Spurn on 23 Apr, near Chop Gate (Cleveland) on 25th & Hornsea Mere on 29th, the only records for the month. A small autumn passage from 4 Aug, the last at Spurn on 20 Oct.

320. Redstart. One near Masham on 11 Apr; in 5 localities on 20th & in 10 between 21 & 29 Apr. One at Spurn on 15 July; light autumn passage on the coast from 25 Aug.

321. Black Redstart. Apart from one at Redcar on 18 Apr (WN), reported only from Flamborough & Spurn in spring & autumn; singles at Flamborough on 10 Mar, 20 Apr, 6 & 20 May (GRB). Singles at Spurn on 28-29 Mar & 1 Apr; up to 7 daily from 14-25 Apr, 2 on 10 May & one on 14 May; one on 8 July ! One at Flamborough on 30 Sept & 3 on 21 Oct (GRB). At Spurn, 3 on 8 Oct & one to 11th; 3 on 21 Oct & one to 24th.

322. Nightingale. The first on 23 Apr near Doncaster, where 4 pairs bred (CJB,RFEB,DK). One heard at Lindrick on 27 May (RGH).

324. Bluethroat. 1st W trapped at Spurn on 24 Sept, & one seen on 7 Oct (GRE).

325. Robin. Spring passage at Spurn from 16-24 Apr, *c.*30 on 17-18th; light autumn passage mainly from 8-15 Oct, *c.*50-40 on 12-13th. 30 at Eccup on 7 Oct.

327. Grasshopper Warbler. Singles at Spurn & Hornsea Mere in the period 18-28 Apr & on 6 May. All other records at inland localities: 4 ' firsts ' from 22-27 Apr & 5 from 1-7 May. *C.*10 pairs in one Doncaster area (WGD). Heard on single days at 11 other localities; 3 Aug records, the last on 19th.

333. Reed Warbler. At Hornsea Mere on 23rd & Fairburn on 27 Apr. At Spurn one dead on 22 May & one trapped on 29th; 2 singing in the Lagoons area on 3 days in June & July. A single bird at Scarborough Mere, & no proof of breeding (RHA); at least 4 pairs at Castle Howard (PRE), probably now the northernmost colony in the county. The recent enquiry produced very few records N of the latitude of York, & suggests that the main weight of population—comparatively large for a fringe species—is in the extensive *tidal* reed-beds of the upper Humber & lower Ouse.

337. Sedge Warbler. One at Hornsea Mere on 21 Apr, increasing to 21 on 23rd. 8 at Fairburn on 24 Apr.

343. Blackcap. One at Spurn on 6 Apr; the next at 4 localities on 14, 20, 23 & 25 Apr. Several Oct records up to 21st, & singles at Adwick-le-Street on 4 Nov, Spurn on 5th & Fairburn on 11th.

344. Barred Warbler. At Spurn: 1st W trapped on 20 Sept; a probable seen on 22nd; 1st W seen on 23rd; one trapped on 26 Sept.

346. Garden Warbler. Reported from 4 places between 28 Apr-2 May; singles at Flamborough & Spurn in the period 5-20 May. Very small autumn coastal passage, 1-5 on 31 days between 1 Aug & 29 Sept.

347. Whitethroat. First noted at 4 localities on 23 Apr, at 7 others from 24-29 Apr & at Ilton on 9 May. Small numbers in autumn, the last on 29 Sept.

348. Lesser Whitethroat. 2 near Staithes on 3 Apr (WKR) & one near Harrogate on 3-5 Apr (PJC, AFGW); one at 2 localities on 22-23 Apr & at 3 on 29th. Singing ♂♂ in May-June in 13 places. 1-2 on the coast from 29 Aug to 13 Oct (Spurn).

354. Willow Warbler. First records from 5 areas from 13-15 Apr & from 17 others from 19-27th; numerous at Wentbridge on 15 Apr, & during the last week in Apr generally. Unusual numbers in Aug, after a large movement at Armthorpe on 29 July: an increase near Doncaster on 15 Aug; *c.*20-50 at Flamborough from 26-28

Aug; 10 & 36 on 27 & 28th at Spurn. Several Sept records, inland and on the coast, to 30th & one at Spurn on 3 Oct.

356. Chiffchaff. One at Hornsea Mere on 25 Mar & at Flamborough on 1 Apr; the next 5 reported between 8-15 Apr & then 7 from 21-29th. Decreases noted at Adwick-le-Street (RJR) & none at Esholt where a decline reported in previous years (DAS,JRC). Singles only on autumn passage; one singing at Bradford (DAS,JRC) & one trapped at Sedbergh on 28 Sept; the last at Spurn on 21 Oct; probables at York on 2 Dec (CWFH) & Worsbrough Res on 9 Dec (DJS,JIM *et al.*).

357. Wood Warbler. First records on 26 & 27 Apr & on 1-3 May. One singing at Staithes on 27 May (HPKR).

360. Yellow-browed Warbler. One trapped at Spurn on 26 Sept.

364. Goldcrest. Occurred at Spurn on 18 days from 25 Mar to 12 May, max. 12 on 18 Apr. A moderate autumn coastal passage in the period 3 Sept-25 Nov, small numbers from 23-27 Sept; max. between 8 & 24 Oct with *c.*200 at Spurn on 12th-13th & Flamborough on 13 Oct, & a few at Redcar-S.Gare on 11-13 Oct. A smaller peak (*c.*80) at Spurn on 22-33 Oct.

365. Firecrest. Spurn: one from 26-30 Sept, 2 on 22 Oct & one to 31st (trapped); one on 5 days in Nov to 11th. One at Eccup on 15 Nov (GRN).

366. Spotted Flycatcher. One at Hornsea Mere on 23 Apr (GRB) & one in Swaledale on 26 Apr (ECS); 10 arrivals from 3-13 May; 1-3 at Spurn & Flamborough between 6 May & 15 June. One at Spurn on 15 July; *c.*7 at Armthorpe (TG) & *c.*16 near Worsbrough Res (DJS) on 19 Aug. Occurred at Spurn on many days from 23 Aug to 9 Oct, max 7 on 28 Aug & on 14 & 26 Sept; 1-3 at Flamborough on 23-30 Sept; one at Eccup on 26th & at Gouthwaite on 29 Sept.

368. Pied Flycatcher. One at S.Gare on 20 Apr & at 5 inland localities from 22-29 Apr; 2 at Spurn on 7-8 May & one on 10th; one at Flamborough on 2 June. Reported from Redcar, Filey Brigg, Flamborough & Spurn between 15 Aug (8 at Spurn) & 21 Oct, heaviest through Sept; max. 14 at Filey Brigg on 15 Sept, *c.*35 at Flamborough on 15th & *c.*20 & 23 on 26-27 Sept; *c.*60 at Spurn on 3 Sept, *c.*35 on 26th. Singles inland at Adwick-le-Street on 26 Aug & at Eccup in late Aug-early Sept; one near Barnsley on 21 Sept (GRA).

371. Hedge Sparrow. Inerease noted at Spurn in late Sept, 92 present on 23rd & *c.*85 on 26th, remaining plentiful in Oct, max. *c.*80 on 8th. Apparent movement at Redcar on 6, 8 & 10 Oct, & 7 flying over S. Gare breakwater on 21 Oct.

373. Meadow Pipit. Spring passage on the coast fairly light & late: heaviest at Spurn from 7-13 Apr (*c.*110 on 7th & *c.*300 on 11th) including one party of 88 coming in from SE & continuing up the Humber, as did most of the others; larger moves at Redcar on 31 Mar, 10 & 12 Apr (DRS), & an influx (182 eounted) at Filey Brigg on 7 Apr (RHA). An increase noted at Flamborough on 26 Aug, on 1st Sept at Redcar, & in early Sept at Spurn where max. *c.*4,600 on 8th, *c.*3,250 on 11th, *c.*2,000-2,500 on 15, 22 & 27 Sept & 2 Oct; heaviest at Flamborough on 21-23 Sept & *c.*400 in 2 or 3 fields at Potteric Carr on 23rd (RDM); a considerable influx at Redcar-S.Gare (DRS) & *c.*150 at Hampsthwaite (PJC) on 10 Oet. 250 moved N on 29 Dec & 100 S on 30th at Harrogate SF (JGWR).

376. Tree Pipit. One at Spurn on 8 Apr; first recorded at 8 localities from 19-22 Apr, at 2 on 24th & one on 27th; on 10 May near Ilton. Small autumn numbers at Spurn between 25 Aug & 21 Sept.

379. Rock Pipit. One near Eccup Res on 8 Apr (GRN). A paper on inland occurrences (see *Nat*, 885:37-39) gives records of one at Adwick-le-Street SF on 7 Oct (RJR), 1-3 near Eccup Res on 6 dates from 7-24 Oct (GRN), singles at Thrybergh Res on 20 Oct (RJR,TG) & at Armthorpe SF on 24 Oct (TG); in addition, birds were reported at Fairburn in Oct (CWin) & one was trapped at Fly Flatts Res on 9 Oct (DAS,JCP). These records, with others in recent years (see also *Doncaster OR*, 1961) suggest a small, regular passage in some E.Pennine districts in Oct-Nov. Birds showing the characters of Water-Pipits in summer plumage at Patrington Haven (where probably regular in spring) on 24 Mar (HOB) & Hornsea Mere on 10 Apr (GRB).

380. Pied Wagtail. A roost in reeds at Potteric Carr held *c.*350-500 from 11 Mar to 8 Apr, *c.*120 & 80 on 25 & 27 Apr; a steady increase from *c.*300 on 7 Aug to *c.*500 on 21 Oct, 25 Nov & 8 Dec (RDM). Birds with characters of White Wagtail: 2 near Barnsley on 18 Mar (CB,AA,DJS), & one at Worsbrough Res on 1 Apr (JIM); singles at 14 localities between 11 Apr & 8 May, 7 of them on 19-22 Apr; 1-7 at Spurn from 16-25 Apr.

382. Yellow Wagtail. ♀ at Swinton (near Mexborough) from 27 Jan to 3 Feb, feeding on a refuse tip at a maggot farm, trapped 3 Feb (TG,RJR); apparently the first winter record for the county (see *Nat*, 881:44). 3 spring arrivals on 14-15 Apr, 6 more from 19-23 Apr & the first in Garsdale on 3 May. Late summer roosts: *c.*600 at Denaby Ings on 4-5 Aug & 27 as late as 25 Sept; *c.*300 at Fairburn on 21 Aug; *c.*70-100 at Potteric Carr between 7 Aug & 6 Sept. At Spurn, odd birds on 8 & 10 July & almost daily from 17 Aug to 28 Sept, max. 18 on 25 Aug & *c.*40 on 5 Sept. Inland singles on 7 & 8 Oct, & 2 on 19th. ♂♂ with characters of the Blue-headed race: one at Fairburn on 21 Apr (CWin); one feeding young in Howgill area (HWB); one at Hornsea Mere on 2 June (GRB) & on 1 July (AHR).

383. Waxwing. Singles in Jan at Spurn, Bridlington (dead), near Huddersfield & Shipley; one at Sheffield on 2 Feb & 4-5 on 18, 20 & 22 Feb; small parties at Helmsley on 8 Feb, one at Masham from 21-27 Feb; one at Bradford on 6 Mar. 2 at Nunthorpe on 17 Nov, one at Bingley on 19 Nov & *c.*25 at Ampleforth on 22 Nov.

384. Great Grey Shrike. Singles at: Ripley on 17 Feb (MRS,AFGW), near Leyburn on 31 Mar (GEA) & at Fairburn from 13-19 Apr (CWin). Up to 3 at Spurn on 7 days from 8-24 Oct (3 ringed). Singles at Easington on 13 Oct & Out Newton on 16 Oct (PJM), at Wintersett Res from 26-31 Dec (GRA,DJS) & at Staveley on 28 Dec (IRD,AFGW).

389. Starling. A S move noted over Doncaster on 1 Jan (MH); *c.*5,000 passed S at Spurn in the weather-move of 1 Jan. Movements continued to May at Spurn, max. *c.*700 on 1 Apr, & post-breeding parties passing reached *c.*1,000 on 21 June. Small numbers arrived in Oct, the main influx in early Nov: many came in from the sea all day at Filey Brigg on 3 Nov (RHA) & max at Spurn on 2nd (*c.*6,000, of which 4,637 passed NW), with over 1,000 passing S daily up to 7 Nov. Very large roosts reported in Mar near Thorne (JDG), at Hornsea Mere to mid-Dec & Burton Pidsea (GRB,BSP) from mid-Dec (same population) & in the Rudston area in autumn. *C.*40,000 passed S over Doncaster again on 31 Dec (MH).

391. Hawfinch. Breeding-season reports from the usual areas. One at Gouthwaite on 3 Jan (IRD) & at Eccup on 6 Jan (MD), 3 at Fairburn on 7 Jan (first record—CWin) & one on 18 Feb; one at Flamborough (first record) on 15 Sept (DAS,RSO).

392. Greenfinch. Spurn: large numbers in early Jan, max. *c.*1,500 on 2nd; 101 passed S on 11 Apr; no considerable autumn moves until 19-21 Oct (*c.*140). & max. *c.*300 passing S on 22 Nov. At Redcar, W-NW coasting moves on 7 Oct & 25 Nov (DRS).

393. Goldfinch. *C.*20 at Spurn on 1 Jan & 10 on rocks at S.Gare on 9 Jan (DGB). Widely reported as numerous in many areas (*cf* recent *ORs*), max. 88 roosting near Doncaster on 21 Jan (CJB,DK); flocks of *c.*70 & *c.*100 at Potteric Carr on 23 Sept (RDM) & up to 100 at Southfield Res on 11, 18 & 25 Oct (EWE).

394. Siskin. After the abundance of autumn 1961, numbers remained very high in Jan, max 218 near Shipley on 4-5 Jan (JCL); *c.*100 near Burley from 1-6 Jan (JRG), *c.*100 near Ossett on 14th (AF,RW), *c.*90 near Hampsthwaite on 18 Jan (PJC) & up to 80 near Barnsley through the month (CB,AA,DJS); 20-50 in 7 other Pennine localities & in 3 in Clevelands; *c.*40 at Hornsea Mere on 4 Feb (GRB) & *c.*50 near Barnsley on 11 Feb, otherwise small numbers through Feb & Mar; a few reported from 6 localities up to 20 Apr, & at Spurn on 23-24 Apr & on 28 May. A moderate autumn influx at Spurn from 21 Sept to 10 Nov, max. *c.*30 on 2 Oct. *C.*20 at Hornsea Mere on 29-30 Dec (GRB); very few reported inland, & only in Oct & Dec.

395. Linnet. An influx at Spurn in early Jan (*c.*300 on 2nd) had ceased by 14th, but large numbers again recorded from 31 Mar to 8 May: max. between 20 & 22 Apr (*c.*1,600 on 20th) & *c.*1,200 on 7 May; most of the 1,808 ringed at Spurn were caught in the first half of the year. 142 passed S at Atwick on 20 Apr (GRB) & large numbers passed through the Skidby area (W of Hull) on 21-23 Apr (JTL); increase noted in the Doncaster area from early Apr (RJR). Fairly heavy autumn passage at Spurn from 10 Sept, largest numbers between 25 Sept (*c.*600) & 2 Oct (*c.*2,500) & usually over 100 to 9 Nov, with *c.*780 on 4 Nov, *c.*700 at Filey Brigg on 3 Nov (RHA). A flock of *c.*150 on W. Hull foreshore on 29 Dec (WBS).

396. Twite. *C.*50 at Patrington Haven on 7 Jan (ACre) & 2 at Spurn on 4 Mar, all on sea-purslane saltings. Bred in 2 (& probably in a third) Pennine areas; post-breeding parties of 3, 12 & 22 in the VC63 Pennines & 1-3 at 2 localities in VC64. One at Jackson's Bay, Scarborough, on 22 Dec (TMC).

397. Redpoll. Again reported in quite large numbers from several WR areas in the first four months, max. *c.*150 roosting near Doncaster on 4 Feb (DK,CJB).

A small spring passage at Spurn, & up to 50 on several autumn days during the large Linnet moves. Small numbers in WR in autumn, max. *c.*60 in the Doncaster area on 14 & 21 Oct (RJR) & on 2 Dec (TG). 2 birds with the characters of Mealy Redpolls at Fairburn on 14 Jan (CWin,WCWak).

398. Arctic Redpoll. A party of 6 near Patrington on 25 Feb (ACre) showed the characters of this ' species '.

401. Bullfinch. The high numbers of the last 3 years maintained in most areas; parties of 10-30 in Jan & again, more widely, in the last 3 months; reports of more than usual in autumn at Bretton Park (JED) & near Doncaster (RDM). Up to 4 at Spurn on several days from 4 Apr to May & singles on 5 & 18 Nov; 2 ♂♂ trapped on 5 Apr were considered to be of the British race.

402. Scarlet Grosbeak. An imm seen at Spurn on 26 Sept (JC,WCWak) & on 27th (WCWak), the third Spurn & county record.

404. Crossbill. First reported on 29 June (no details—see *Bird Migration*, 2:255); present in Bishop Wood, Selby, one at Spurn & 25 at Eccup on 7 July, *c.*12 at Rishworth from 8-11July (VSC,IM,FM), at least 56 near Sheffield on 15 July (RGH), 20 near Bolton Abbey on 16th (JKF), 30 near Harrogate on 16th & 20 on 21st (AFGW); 40 over Ilkley on 23 July (OMP); the Eccup party up to 24 through the month; singles & small parties from 8 July at Howden, Hornsea & at 8 E.Pennine localities to the month-end; singles at Spurn on 14-15 July & 3 on 29th. Small parties in 5 WR areas in Aug-Dec. *C.*12 at Hutton-le-Hole on 1 Aug (BK) & 7 near Helmsley on 6 Aug (CDM). Singles at Spurn on 4-5 Sept, up to 3 on 7 days from 13-25 Sept & apparently a fresh influx there from 5 Oct (8), 3 on 6th, 2 on 11-12 Oct (& one at S.Gare on 11th (DRS,ABar), 6 on 13th & 7 on 28 Oct, finally 3 on 3 Nov. The only large parties after July were in the Clevelands: *c.*30 in Kildale on 23 Sept (ECG *et al.*) & 23 on Pickering Moor on 22 Oct (*Bird Migration*), excepting records of parties of 9, 16, & 24 at Langsett on 16, 23 & 24 Dec (CB,DJS).

405. Parrot Crossbill. One of 2 crossbills trapped at Spurn on 12 Oct was found dying on 13th & identified (EGo) as of this species. It is now preserved in Bolton Museum. This appears to be the second county record. It seems possible that some other of the Oct crossbills may also have been this species—see *Bird Migration*, 2:260-264.

407. Chaffinch. Figured in the early rush at Spurn between 1 & 4 Jan (*c.*250 on 2nd) & a few present on many days to 26 Mar; spring passage there heaviest (*c.*130) on 1 Apr, *c.*90 on 7th & *c.*230 on 20 Apr. Serious decline in breeding numbers reported from Carleton (Pontefract) & Womersley (per JDP), the Bradford area (JCL) & Harrogate (AFGW). Autumn passage, after a few in Aug & Sept, daily at Spurn from 6 Oct (*c.*30) to mid-Nov, max. *c.*100 on 8 Oct, *c.*150 on 9 Oct & *c.*100 on 7 Nov. Movement noted at Redcar-S.Gare on 6 & 11 Oct & on 15 Nov (DRS). *C.*30 on W.Hull foreshore on 29 Dec (WBS).

408. Brambling. Up to 50 at Spurn from 1-7 Jan. *C.*100 roosted near Nunthorpe during Jan (IFS); *c.*70 seen at Finningley on 11 Feb & *c.*250 just over the county border at Wroot on 5 Mar (AEP,JB). A flock on a W.Hull foreshore rubbish tip from 4 Mar (*c.*40) to 5 Apr (*c.*150) reached *c.*300 on 6 Mar & 3 Apr (WBS). A small autumn passage from 26 Sept at Spurn, max. *c.*80-250 from 11-13 Oct, & a minor influx from 8-10 Nov; *c.*30 at S.Gare & 4 at Redcar on 11 Oct (DRS); 15 at Flamborough on 13 Oct (AFGW). Autumn flocks very small inland. Signs of weather moves in Dec: *c.*10 at Hornsea Mere on 8, 9 & 16 Dec & 24 on 30th (GRB); 15 on W.Hull tip on 29 Dec (WBS).

409. Yellowhammer. *C.*20 at Spurn on 3 Jan & again on 6 Mar. Small numbers feeding in Sheffield factory yards from 1-5 Jan (RGH).

410. Corn Bunting. *C.*20 at Spurn on 1 Jan. Reported May-Aug at Stillington, Ampleforth, Easingwold & Gillamoor (PRE,MDC), all new VC62 localities (AJWa).

421. Reed Bunting. *C.*40 passed S at Spurn on 4 Jan. Main autumn passage at Spurn between 22 Sept & 20 Oct, max. *c.*200 on 20 Oct.

422. Lapland Bunting. 1-3 reported from Redcar, Filey Brigg, Flamborough, Bridlington, Atwick & Spurn on 9 days to 17 Mar (RHA,GRB,DRS,SBO). In autumn: 3 at Spurn on 19 Sept, singles at Redcar on 23rd & Flamborough on 25 Sept (DRS,AJWi); occurred at Spurn on many days to the year-end, max *c.*10-15 on 9 & 20 Oct, 4, 15 & 25 Nov & 15 Dec. Parties of 1-8 at 5 coastal points between Redcar & Hornsea, mainly on stubbles, to late-Dec, largest numbers from 14-20 Oct (RHA,GRB *et al.*). An inland record of one near Eccup Res on 9 Oct (GRN).

423. Snow Bunting. Singles at Eccup, Fairburn & near Ilkley in Jan; *c.*20 near Wetwang on 12 Jan (CJW), apparently the first *inland* Wold record for over 50 years (see Nelson); one at Wintersett Res on 18 Mar. All other records for the first quarter were on the coast & Humber, small numbers generally, but up to *c.*100 at Spurn to mid-Jan & *c.*60-80 in Feb; *c.*300 at Patrington Haven on 25 Feb (ACre); the last at Spurn on 21 Apr. 5 autumn arrival dates from 13-22 Sept on the coast & at Scaling Dam, & no large parties (max. 42 at Spurn on 29 Sept) until Nov; max. at Spurn *c.*150 on 4, 17, 18, 24 & 25 Nov & 3 Dec, *c.*230 on 1 Dec; *c.*50-80 at several Holderness coastal points from 17 Nov, when 19 came in from the sea at Atwick (GRB), & *c.*120 at S. Gare on 24 Nov (DRS); *c.*250 at Filey Brigg on 15 Dec (RHA) & 106 at Atwick on 16 Dec (GRB). Small parties in several Pennine areas from 10 Nov (& 6 on Danby Moor on 11 Nov (DGB)) max. *c.*20 near Cupwith Res (RCr) & *c.*20 & 35 at Scar House Res (WWG); 1-2 at 11 localities in the E.Pennine foothills & central plain in Nov-Dec. 4 on stubble on the Wolds above Birdsall on 9 Dec (HOB).

424. House Sparrow. Fewer passing at Spurn than in 1961: *c.*300 on 2-5 Jan, & on 30 Oct, *c.*380 on 4 Nov & *c.*460 on 15 Dec.

425. Tree Sparrow. Large numbers in the Doncaster area in Jan: *c.*400 near Armthorpe & *c.*180 at Harlington Flash on 7th (RJR,JBH). Max at Spurn *c.*100 on 3 Jan & *c.*120 on 24 Oct.

The following were also reported during the year: Little Grebe, Red Grouse, Partridge, Pheasant, Moorhen, Snipe, Curlew, Redshank, Dunlin, Common Gull, Woodpigeon, Little Owl, Kingfisher, Carrion Crow, Jackdaw, Magpie, Jay, Great Tit, Blue Tit, Marsh Tit, Grey Wagtail.

ADDITIONS AND CORRECTIONS TO EARLIER REPORTS

1960

91. Buzzard. Delete—' one dead at Roos on 17 Sept.'

98. Honey Buzzard. One found dead at Roos on 17 Sept, is now set up in the Hull Museum.

1961

151. Whimbrel. One through autumn to the year end at Staithes (HPKR).

171. Little Stint. One at Cherry Cobb on 2 Dec (GRB).

213. White-winged Black Tern. A juv at Hornsea Mere on 19 Aug (GRB).

423. Snow Bunting. A flock of 2,000 plus at Patrington Haven on 15 Jan (ACre).

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The Common Lands of England and Wales, by **L. Dudley Stamp** and **W. G. Hoskins.** Pp. xvii + 366 with 28 plates, 4 in colour, and 41 text figures. *New Naturalist Series No.* **45**. Collins, 1963. 42/-.

Since most of the wild tracts in this country are commons, or have been commons until recently, naturalists will find this book of great interest. In the first seven chapters Dr. Hoskins gives his views on the origin and former utilisation of commons and village greens; he traces the history of the enclosure movement and comments on the fate of the common land which survives as such. In Part Two (Chapters 8 to 25) Professor Stamp reviews the distribution of remaining commons, region by region, giving a general statement of their present vegetation, utilisation and geological foundations. The last hundred pages are devoted to an appendix in which the surviving commons are listed, with their acreages, on a county basis.

Part Two is a veritable mine of information and will stand as a useful work of reference. Part One makes absorbing reading and, provided the reader realises that it represents just the views of one writer, it can do nothing but stimulate the minds of enquiring naturalists regarding the development of the landscape beneath the hand of man. This section is ecologically disappointing however. Dr. Hoskins holds a highly romantic view of British commons which will not be shared by ecologists with their concept of ' plagioclimax vegetation ' or by agriculturalists with their awareness of the sterility which was created in so many places by centuries of neglect in common usage. Indeed even historians may be provoked by the view that ' . . . numerous small Greens of Essex and Kent . . . pretty certainly originated as clearings in densely wooded country, either as natural glades (*sic*) or as deliberately cleared ground.' One could wish that Dr. Hoskins had made more use of recent work by various specialists in this field. Nevertheless, one feels indebted to him for his wealth of interesting examples and for his most interesting presentation.

The book is enriched by frequent, well-chosen plates, some of superb quality, and by over forty interesting maps and diagrams.

S.R.E.

ROSS'S GOOSE IN YORKSHIRE

A. F. G. WALKER

A ' Snow Goose ', lame in the left leg, was seen at Harewood Park at the end of May, 1962, by S. J. Wells, *et al.*, and was last recorded there on June 1st. On June 5th, a ' Snow Goose ', also lame in the left leg, appeared at Gouthwaite Reservoir, near Pateley Bridge, and stayed until July 26th, after successfully completing the moult. Nothing more was heard of it until August 18th when a ' Snow Goose ' was seen flying round Ripley Park, near Harrogate, in company with Canada Geese (*Branta canadensis*). It continued to appear at Ripley and in several localities round Knaresborough during September and October, and was identified as the same bird by the damaged left leg. The bird carried a ring. Many bird-watchers saw the bird.

Whilst the bird was at Gouthwaite, there were many opportunities for studying it at close range as it grazed close to the road or swam past. Twice I watched it at 10 to 15 yards range and also studied it at leisure in bright sunshine with a × 30 telescope at a range of 20 to 30 yards for half an hour one day. It was completely flightless on June 25th and was first seen to fly strongly again on July 23rd.

The size, shape and colour of the bill did not fit in with illustrations in the *Handbook of British Birds* of Snow Goose, and it was I. R. Downhill who first suggested that it might well be a Ross's Goose (*Anser rossii* (Cassin)). I then compared the bird with the colour plate in Peter Scott's book, *Wild Geese and Eskimos*, and found that the Gouthwaite bird resembled the illustration perfectly. K. Hardcastle had, earlier in the year, kindly sent me a colour print of a ' Snow Goose ' he had photographed with Canada Geese on the River Lune in Lancashire (February 11th, 1962). Comparison of the Gouthwaite bird with the print showed complete resemblance and it was concluded that both the Gouthwaite and the River Lune birds were Ross's Geese. As I gather the Lune bird was also ringed on the left leg and that it was last seen there in April, there was a strong suggestion that this was the bird which appeared at Gouthwaite. Although it was almost certainly an escape, there does not appear to have been any previous record of the species in the county.

Description: A small, rather short-necked, white goose with black primaries and and pinkish-red legs and feet. The small, neat head resembled a Pinkfoot's (*Anser fabalis brachyrhynchus*) and the bill was small and stubby, even shorter than that species. The whole of the base of the bill was pale blue and the rest of the bill was dark pink apart from a cream nail. The shortness of the bill appeared to be accentuated by a steeply sloping forehead. The bird was much smaller than a Canada Goose with which it always associated and a little smaller than a Pinkfoot, though that species was never seen with it for direct comparison.

A detailed description of this bird and the photograph of the Lune bird was submitted, on request, to the Rare Birds Committee of *British Birds* which accepted the record, and the Records Committee of the Ornithological Section of the Y.N.U. agreed with the decision.

FIELD NOTE

***Geastrum triplex* at Spurn.**—On November 25th, 1962, while taking part in a drive on the Chalk Bank South trap I saw a species of fungus which was easily recognisable as an Earth Star. It was growing close to an Elder bush on the chalk ridge which extends southwards to the ' Wire Dump ' trap, this ridge having a good surface of sandy soil. The exoperidium was reflexed and had six lobes; the endoperidium was open at the apex and emitted spores at the slightest pressure. From its general appearance and size, I considered it to be *Geastrum triplex* Jungh., and this was confirmed by Mr. J. T. Palmer of Liverpool, to whom the specimen was sent. There are four previous records of *G. triplex* for the county, but this is the first time it has been recorded for V.C. 61, although Miss M. Livingstone stated that she found four specimens growing on the identical site in the autumn of 1961, but had not realised the scarcity of Geasters in East Yorkshire. It is surprising that *G. triplex*, which grows readily on sand dunes, has not been previously recorded at Spurn. I would like to thank Mr. P. J. Mountford for his help in preserving the specimen, and Mr. J. T. Palmer for his comments and information on the Geasters generally.—Mrs. G. Pashby.

THE MAMMALS OF THE SHEFFIELD AREA

T. M. CLEGG

During the period 1960-63 I have spent a considerable amount of my time looking at mammals in and around Sheffield. On the west side of the city I have been trapping members of certain species in order to try to work out their distribution, especially with regard to the transition from low-lying habitats to moorland in this area. I have also had occasion to work through the mammal collection of the Sheffield City Museum and during the course of this a number of hitherto unrecorded occurrences of various species came to light. The literature on mammals in South Yorkshire is scanty and after consulting such works as exist I came to the conclusion that the following notes might be worthy of publication in order to provide a basis for future work in an area which has changed enormously since Sheffield Naturalists' Club summarised the distribution and status of vertebrates in this area in 1910. The late Arthur Whitaker worked out the status of bats in South Yorkshire in a series of papers which appeared in *The Naturalist* between 1905 and 1913.

The area to which these remarks apply stretches from Barnsley in the north to the Yorkshire-Derbyshire border in the south. Its eastern and western extremities are the Rother Valley and the moors along Derwent, parts of which are in Derbyshire. The principal river valleys in the area are those of the Dearne, Dove, Rother, Don and its tributaries, and the upper part of the Derwent. It falls within a ten mile radius with Sheffield as the centre.

The following systematic list covers all the species which have been recorded in the last eighty years or so, together with the highest altitudes at which I have found various species during the past three years.

INSECTIVORA

Hedgehog, *Erinaceus europaeus*. Widespread even in built-up areas. This species can be found up to 1,000 feet above sea-level in the Sheffield area.

Common Shrew, *Sorex araneus*. Common in hedgebanks, woods, garden walls, etc. This species is frequently found at about 1,100 feet above sea-level in districts to the west of Sheffield.

Pygmy Shrew, *Sorex minutus*. Less common than the previous species but occurs in the same habitats. Out of 35 shrews trapped in the Sheffield suburb of Totley in 1962 one was of this species. During 1961 four out of twelve shrews caught at Redmires were Pygmies. In the first instance the habitats covered were gardens, hedgerows and coppices, at Redmires shrews were caught amongst stones near conifer plantations at the edge of moorland.

Water Shrew, *Neomys fodiens*. Occurs in a number of local river valleys. A skull of this species was found in a Short-eared Owl's pellet at Redmires in 1960. Denny (1910) states that it occurs widely on the banks of local streams, but in small numbers. It is now considerably more restricted in its distribution.

Mole, *Talpa europaea*. Widespread and increasing in the higher suburbs of Sheffield, possibly following the improvement of moorland soils by gardening. Denny mentions white and pinkish varieties at the edge of Hallam Moors in the past.

CHIROPTERA

Noctule, *Nyctalus noctula*. Thinly distributed in this area. The sites of a number of colonies in the Barnsley area, which were discovered by the late Arthur Whitaker about fifty years ago, have now disappeared.

Leisler's Bat, *Nyctalus leisleri*. Rare, no recent records. Arthur Whitaker collected them from holes in trees in the Worsbrough district.

Pipistrelle, *Pipistrellus pipistrellus*. The most common bat in the area. It is frequently found in buildings even in the centre of Sheffield.

Daubenton's Bat, *Myotis daubentoni*. Rather local in its distribution, but still present in some of the localities described by Whitaker.

Whiskered Bat, *Myotis mystacinus*. This species which was recorded at several sites near Barnsley about fifty years ago, may be more widespread than the number of records suggest. The only Sheffield record is of one found alive at Parkhead in 1919.

Natterer's Bat, *Myotis nattereri*. Fairly widespread, still present in its haunts of forty years ago. This species was regarded by Whitaker (1906) as not uncommon and occurred all over the Barnsley district.

LONG-EARED BAT, *Plecotus auritus*. Local, recorded at several sites in South Yorkshire and North Derbyshire. There are two records for the city of Sheffield, one at Fulwood in 1881 and another in London Road in 1913.

BARBASTELLE, *Barbastella barbastellus*. This species, which is rare in the North Midlands was added to the local list in July, 1960. The specimen concerned was picked up dead in a Sheffield street.

LAGOMORPHA

RABBIT, *Oryctolagus cuniculus*. Widespread and common. Rapidly recovering in numbers following the myxomatosis outbreaks of the middle fifties. In some areas black specimens form a significant percentage of the population.

BROWN HARE, *Lepus europaeus*. Widespread and common up to an altitude of about 1,000 feet above sea-level.

MOUNTAIN HARE, *Lepus timidus*. Introduced about 1870 to the moors between Sheffield and Oldham, now fairly common along the Yorkshire-Derbyshire border at Langsett, Derwent and Howden. In April, 1962, up to 30 were seen on the slope above Derwent Reservoir and on walks between Langsett and Derwent numbers in excess of 50 can often be seen. On the moors above Langsett it shares its habitat with the Brown Hare.

RODENTIA

BANK-VOLE, *Clethrionomys glareolus*. Widespread and common in hedge banks, woods, etc. at low altitudes. In February 1963, one was trapped by a moorland stream near Dore at an altitude of 1,200 feet above sea-level.

SHORT-TAILED VOLE, *Microtus agrestis*. Widespread and sometimes abundant on grass land and moors. In 1961-62 the population on marshy meadow land in parts of the Dearne Valley was very high, but on moors in the Redmires area they were scarce.

WATER-VOLE, *Arvicola amphibius*. Fairly common in the lower river valleys and occasionally found by moorland streams during the summer. On Totley Moss which lies on the Yorkshire-Derbyshire border the streams appear to be vacated during the winter.

LONG-TAILED FIELD MOUSE, *Apodemus sylvaticus*. Common in hedge banks, woods, gardens, etc. To the west of Sheffield it occurs up to an altitude of at least 1,200 feet above sea-level.

HOUSE-MOUSE, *Mus musculus*. Very common close to man and his settlements. Its habitats in South Yorkshire range from dwelling houses to the underground sections of coal mines.

BROWN RAT, *Rattus norvegicus*. Widespread and common in some areas in spite of constant attempts at extermination. This species also occurs in coal mines and on occasions when the underground workings of a rat-infested colliery have broken through into others containing House-Mice the latter have become extinct within a short time.

DORMOUSE, *Muscardinus avellanarius*. A record of a specimen caught at Millhouses, Sheffield in 1958 is the only one in recent years. The City Museum's collections contain examples from Norton in 1877 and Heeley in 1892.

RED SQUIRREL, *Sciurus vulgaris*. After some years of decrease this species now seems to be increasing slightly in areas to the north of Sheffield. It still occurs within the city boundary.

GREY SQUIRREL, *Sciurus carolinensis*. Spreading slowly now after its rapid initial colonisation of the area. Occurs within the Sheffield City boundary in the Botanical Gardens, Crookesmoor and Ecclesall woods.

COYPU, *Myopotamus coypus*. A small number, which were introduced in the Treeton area in 1959-60, were quickly exterminated. They did, however, breed whilst they were free and there is a remote chance that some survived.

CARNIVORA

FOX, *Vulpes vulpes*. Widespread, especially on moorland edges and similar rough terrain. Quite frequently seen in suburban districts.

BADGER, *Meles meles*. Widespread, with setts in all types of country from low-lying woods to moorland edges. Their distribution around Sheffield was summarised recently by C. B. Waite and R. G. Hawley (1956). Often the first indication of the presence of this species comes when one is the victim of a road accident.

OTTER, *Lutra lutra*. Rare, the few records in existence seem to be mainly of immature examples which enter the area during the winter. R. Bramhill (1952) refers to occurrences in most winters at Roche Abbey near Maltby.

PINE MARTEN, *Martes martes*. This species was regarded by Denny in 1910 as ' now probably extinct ' in the area. The most recent record seems to be of one, now in the City Museum's collection, which was killed at Broomhead in 1927. In 1960 a gamekeeper in the Broomhead district told me of an unfamiliar ' cat-like ' animal which he had seen in the trees of a dense conifer plantation. No further news of this animal was received however.

STOAT, *Mustela erminea*. Widespread and fairly common, quite often reported in suburban districts. Since the reduction in the numbers of rabbits it now feeds to a greater extent on Brown Rats. Individuals which have assumed white pelage during the winter have been seen occasionally on local moorlands.

WEASEL, *Mustela nivalis*. Widespread and fairly common. This species seems to be increasing in its urban appearances.

POLECAT, *Mustela putorius*. Now apparently extinct locally. In North Derbyshire it persisted until 1876 in the upper Derwent valley. Escaped Ferrets are not infrequently met with and these are sometimes reported as Polecats.

UNGULATA

RED DEER, *Cervus elaphus*. Mainly in parks now, but odd specimens have been recorded in Sheffield suburbs during the last few years. One seen in the Shiregreen area, for example, may have escaped from Wentworth Woodhouse.

FALLOW DEER, *Dama dama*. Mainly confined in parks, but a few remnants of former herds have been seen in the Wortley and Cawthorne districts recently. One on Blacka Moor in late 1962 may have come from Chatsworth Park.

ACKNOWLEDGEMENTS

I would like to express my thanks to Mr. H. R. Singleton, Director of the Sheffield City Museum, for permission to quote records relating to the specimens in the Museum's collection. Mr. J. D. Atter informed me of the 1958 occurrence of the Dormouse at Millhouses—he caught it and later allowed it to go free. Messrs. A. Archer, C. Bower and D. Standring of Barnsley passed on information on the mammals which they met with on their travels in the Barnsley area.

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How to Draw Birds, Fish and Reptiles, by **Arthur Zaidenberg.** Pp. 64 with 54 pp. of sketches. Abelard-Schuman, London, 1963. 15/-.

The author, when an art student in Paris, had the great good fortune to be taught by one of those rare teachers who not only lives his subject but by his enthusiasm and example successfully conveys his own feelings to his students in a way which they never forget. In turn Mr. Zaidenberg stresses the necessity of getting to know the creature you have in mind, to ascertain its character so that you have the feeling for it before you try to draw it. Ways of building up the living creature are cleverly suggested in large clear sketches. Should prove a valuable guide to anyone wanting to know how to set about drawing these animals.

E.H.

DR. BEDFORD'S OBSERVATIONS AND FIELD EXPERIMENTS ON *ORTHOTHECIUM RUFESCENS* AND *O. INTRICATUM*

G. A. SHAW

The late Dr. T. H. B. Bedford devoted considerable time to a study of the reasons for the infertility of dioecious mosses, and was able to show that this was due in great measure to the separation of the two sexes. An excellent paper on 'The Sex Distribution in Colonies of *Climacium dendroides*,' was published by him in *The North Western Naturalist*, **13,** 213-221 (1938) in which he showed that fruiting could be induced in female colonies by introducing male plants.

Shortly after Dr. Bedford's death in December, 1961, his specimens and certain notes were passed over to me by his widow, Mrs. Olive Bedford. Among these are numerous packets of the two species of *Orthothecium*, *O. rufescens* and *O. intricatum*, from various sites in Yorkshire and Westmorland, and specimens resulting from some field experiments which he carried out. It was, I believe, Dr. Bedford's intention to write a paper on this subject, and I feel it a privilege to put together the following notes, based on his investigations.

Orthothecium rufescens (Brid.) B. & S.

This moss is exceedingly rare in fruit. According to Dr. Bedford the colony of *O. rufescens* at the head of Heselden Ghyll is entirely female, whilst the colony at Kisdon, Swaledale, is entirely male. It might be asked here how this conclusion was arrived at, and one can only assume that he adopted the method he used for sexing colonies of *Climacium*, as described in the above-mentioned paper. The following extract is taken from that paper; 'Theoretically, the whole of the plants in a colony should be examined in order to determine the sex distribution. This is manifestly impossible unless the colony is small, and it has frequently been necessary to resort to a system of sampling. Small tufts containing 10 to 20 plants were gathered at regular intervals throughout the colony. This was done systematically and the tufts were placed in a definite order in a sponge bag. When the material came to be examined, it was possible to obtain a fair idea of the relative positions of the plants of different sex . . .'' The absence of fruit at Heselden Ghyll or Kisdon would tend to confirm his findings.

Experiment I. In April, 1939, a small tuft of female *O. rufescens* from Heselden Ghyll was implanted in the colony of male *O. rufescens* at Kisdon. About a year later out of twenty transplants, nine were bearing fruit. Most of the remainder had been displaced during the severe winter.

Orthothecium intricatum (Hartm.) B. & S.

This, too, is exceedingly rare in fruit. According to Dr. Bedford, colonies of *O. intricatum* at Ais Gill, Black Dub and Hell Gill were all female, and at each site were intimately associated with the male plants of *O. rufescens*. Examination of the *O. intricatum* showed that it was bearing fruit at all three sites, and in view of the facts stated above, Dr. Bedford was convinced that the female *O. intricatum* had been fertilised by the male *O. rufescens*.

Experiment II. In 1940 a tuft of female *O. intricatum* from Garsdale was implanted in male *O. rufescens* at Kisdon. A year later the introduced plants of *O. intricatum* were fruiting, having apparently been fertilized by the male *O. rufescens*. H. N. Dixon (in letter dated June 29th, 1940) accepts these findings, but at the same time says: 'I should have expected to see some more definite influence of the *O. rufescens*; I do not see any; the seta is scarcely longer than normal and the capsule seems to be that of *O. intricatum*; at any rate it has the shorter lid. If and when there is plenty of fruit available it might be interesting to see if there is any influence on the exothecium cells or any trace of cilia in the peristome.'

Conclusion

It is shown that (1) the lack of fruit in *O. rufescens* is due to the isolation of the sexes, and that if the two sexes are brought into contact, fertilization occurs and fruit is formed.

(2) Similar reasons explain the lack of fruit in *O. intricatum*, but fertilization of female plants can be effected by male *O. rufescens* when in close proximity.

BOOK REVIEWS

Learning and Instinct in Animals, by **W. H. Thorpe.** Second Edition. Pp. 558 with nine plates. Methuen & Co., London, 1963. 63/-.

The first edition of this book published in 1956 (reviewed in the *Naturalist*, 1956, pp. 152-153) was a most important synthesis of the work done in this field and gave a valuable statement of the position the subject had reached at that time. This is, however, one of the rapidly advancing frontiers of zoology and is attracting much research activity. Dr. Thorpe has incorporated the results of this into the new edition both by additions of new references to the appropriate paragraphs and by revision of certain sections. The basic contents, the lay-out and format of the book remain substantially the same. The most important changes have been to the neurophysiological chapter regarding the possible rôles of D.N.A. and R.N.A. in this context, the inclusion of work on the platyhelminthes, revisions of the cephalopod section, and the bird-orientation section and additions to the section on the using of tools by birds and finally and most importantly to the list of references. The chapter on mammals, which remains virtually unchanged, reflects the disappointing lack of work on this difficult group. It is most valuable to have this major work brought up-to-date, and at a very mild increase in cost.

I.W.

The Origin of Races, by **Carleton S. Coon.** Pp. xli+745 with 32 plates, 84 figures and 13 maps. Jonathan Cape, London, 1963. 63/-.

The central theme of this book is of much technical interest but can be considered almost incidental to the enjoyment of the book as a whole. Many of the broader concepts in biology, including that of evolution itself, have appeared a number of times in fragmentary form or merely as isolated ideas and attracted little attention; their hope of serious consideration depends upon their presentation against a thoroughly documented background, with all the relevant evidence assembled, and in the book under review this background is fascinating in itself and quite admirably assembled. The whole history of the primates is outlined, with a discussion of the evolutionary forces bearing upon it and a summary of the changing geographical and climatological environments, becoming more detailed as the hominid level is approached through the Dryopithecines and Australopithecines; finally for the genus *Homo* a full description is given of all the known remains. This description is well balanced and very complete and is written so that the unavoidable abundance of anatomical detail can easily be skipped without seriously interrupting the flow of the narrative, giving the reader of more general interests by far the best available account of the whole fossil history of man. Throughout the book also there is a series of new or freshly orientated ideas of much interest—on human pygmies and their possible significance, on the effect of social life on human evolution and so on—of which a reassessment of the Neanderthal people might particularly be mentioned.

To consider now the main thesis of the book. Coon suggests that the races of men can be looked upon as sub-species, which may be accepted as a reasonable view, but then goes on to point out the difficulty in understanding how this separation from an assumed homogeneous population of *Homo sapiens* could have taken place in the relatively short time available. His solution is to suggest that these sub-species actually antedate *Homo sapiens*, in other words that they had become separate at an earlier or *Homo erectus* stage and evolved more or less in parallel. Hence the various races of mankind crossed the *erectus-sapiens* threshold independently, to become fully human at different times in different places and, of course to different degrees. From the point of view of evolutionary genetics such a suggestion would have appeared most unlikely even twenty years ago, when it first occurred to Coon, but since then work particularly on birds has rendered it theoretically unobjectionable. Nor does the level chosen for drawing the inherently arbitrary line between sub-human and human—based on brain size, use of tools and fire, power of speech and so on—seriously affect the issue, since even at its earliest it can still be considered too recent. The main difficulty is simply to establish the theory with reasonable plausibility on the basis of the very scanty evidence available, and here one can only say that Coon has argued his point of view well. Taking his five primary races he can make a good case for the direct derivation of the Mongoloids, and hence of all the peoples of the Americas as well, from the Peking remains at the *erectus* level, a suggestion indeed made some years ago by Weidenreich; for the Caucasoids of farther north and west and for the Australoids of farther south he can produce

some evidence in favour of a separate origin and emphasise that there is none against, but for Africa only speculation is possible at present. Here he divides the races into a Congoid group of Negroes and Pygmies belonging to the tropical west, with no known forerunners, and a Capoid of Bushmen and Hottentots, originating in North Africa and driven south later by Caucasian pressure.

The main objection to the book may well be emotional, with its implication that the difference between races is rather deeper than generally supposed, but equally this makes it all the more desirable that the facts should be established. A further volume on living races, in which such important topics as blood grouping can be adequately treated, is promised and must be awaited with genuine anticipation.

T.K.

Collins Guide to Bird Watching, by **R. S. R. Fitter.** Pp. 254 with 40 photographic plates and 49 line drawings. Collins. 21/-.

This latest addition to the bird watcher's library is well produced, though there is inevitably some duplication of the ground covered by earlier writers.

The first section on ' How to Watch ' is an introduction to the basic aspects of the subject. Valuable information for beginners is given on the wide variety of literature available and the book is naturally complementary to the author's earlier *Pocket Guide to British Birds.* He gives guidance on note-making, selection of binoculars and the attraction of birds into gardens for feeding and nesting. Hints on first-aid include advice on dealing with injuries, the disposal of supposedly abandoned young and the feeding of deserted fledglings or injured birds. Scientific enquiries are briefly introduced and photography and sound recording are also covered. A short history of organised bird watching in Britain shows how far the interest has widened since the sixteenth century.

The second part of the book on ' What to Watch ' is perhaps disappointing. This consists of what the author describes as thumbnail sketches of typical birds, supported by good black and white plates. These sketches are hints on identification rather than full plumage descriptions. With no colour illustrations the reader is referred to the *Pocket Guide* for more complete identification reference. While this section has its limitations there is much useful information for the beginner.

A topographical guide forms the third part of the book and it is a first-class compendium of information for the itinerant bird watcher with generous information on places to visit and birds to be found. Where the locality of rarities is concerned, Mr. Fitter is discrete, which is more than can be said for some authors. The guide describes the habitats, special birds, nature reserves, societies and literature of each county. It is regrettable that many natural history societies must have been omitted because they do not specify ' bird watching ' or ' ornithological ' in their titles. Many such societies describing themselves simply as ' natural history ' groups include very active ornithological sections, but have been excluded from the references in this book. It is perhaps hard to criticise the author for this but equally the societies concerned can scarcely be expected to splinter into their various sections in order to secure recognition.

A good book, as far as a complementary volume can be, and the final section justifies its inclusion in a reference collection.

A.H.B.L.

Birds of the World, by **Hans Hyass,** translated by Gwynne Vevers. Pp. 210, with illustrations in colour covering 1,100 species by Wilhelm Eigener. Methuen. 21/-.

Prior to the Second War, the ornithologist seeking birds on the Continent had difficulty in finding illustrations of certain birds absent from the British List such as Corsican Nuthatch, Blue Rock Thrush and Azure-winged Magpie, but this was remedied in 1954 by an excellent Field Guide. Now in compact form, the entire world is covered, with emphasis on European birds and those of North America; and to mention four of the colour-plates featuring Trogons, Cranes, Pheasants, and Peafowl, each is a triumph of artistry and printing. Every bird figured is supported by a brief descriptive text. There is a mix-up concerning Ural and Lapp Owls, but it is an excellent book for the bird-lover and at a guinea is remarkably good value.

J.A.

A Sailor's Guide to Ocean Birds (Atlantic and Mediterranean), by **Ted Stokes.** Pp. 64 with 18 pp. of black and white illustrations. Bosun Books, No. 18. Adlard Coles Ltd. 1963. 6/-.

For what the book sets out to be and at the modest price, this is an admirable pocket guide. It is intended as a quick reference book for the average sailor who is no expert on birds and as such it will help to ensure that for at least some, 'idle curiosity grows into serious interest.' Five albatrosses are briefly described, only one illustrated. Of twenty-three species of gulls, only eight are illustrated. The Iceland Gull is simply described as 'a small version of the Glaucous Gull.' The illustrations by Keith Shackleton are for the most part adequate for their purpose. Some of the best are obviously Peterson-inspired. The auks, in particular are not well proportioned.

The whole of the Atlantic seabird species are dealt with in this small compass. A first sighting recognition table would need to be tested by a novice to prove its worth. He would perhaps be a little disturbed to find that on the grounds of possibility a medium-sized mainly white bird with pale grey wings which he had seen could be any one of ten species. For the idly curious, it is a quite good little guide. or a good buy for the schoolboy beginner who is spending a holiday by the sea.

R.F.D.

A Guide to the Birds of Sussex, by **G. dés Forges** and **D. D. Harber.** Pp. 177 with 12 full-page photographs of habitats, and an outline map. Oliver and Boyd, Edinburgh. 30/-.

The authors record their 'enormous debt' to the late J. A. Walpole Bond and his monumental *A History of the Birds of Sussex* (1938), the records in which are brought up to date and subjected to necessary editing where insufficiently authenticated. The problem of the so-called 'Hastings records,' 'a controversial topic which we would have been glad to avoid,' has been faced fearlessly. Following the findings of E. M. Nicholson and I. J. Ferguson-Lees published in *British Birds*, 40 listed species and six races have been jettisoned from the Sussex List; details of all can be found in *A History of Sussex Birds*; some of them will doubtless eventually need to be brought back when again recorded under modern techniques. The authors had the advantage of having edited ('one or other or both') the Sussex Bird Report for a number of years.

Carefully and adequately compiled, well printed on good paper, the book is a necessity to anyone who studies birds seriously in Sussex. Some of the names on the folding map that follows the index stress the quality of the county: the Downs, Ashdown Forest, the Midrips, Beachy Head to Pagham and Chichester Harbours, and Thorney Island, where only have I seen Greenshanks in flocks of more than 50 silvery birds. Sussex still has breeding Stone Curlews and Cirl Buntings; and had Bee-Eaters in at least one recent year.

R.C.

Collins Field Guide to Archaeology in Britain, by **Eric S. Wood,** with an introduction by Sir Mortimer Wheeler. Pp. 384 with 59 photographs and 189 maps and line drawings. Collins, 1963. 25/-.

Mr. Wood is to be congratulated on this latest book in the Collins *Field Guide* series.

In Part I the general background of geology, climate and cultures is treated. Compression has, unfortunately, made a number of hypotheses sound as though they were proved facts, and some of the historical statements made, e.g. the total loss of the Ninth Legion in 117-120 are not in accordance with modern scholarship. Part II describes Field Antiquities, and is the more important part of the book. Mr. Wood has gathered together a great deal of information and the fifty pages of odds and ends contain information which would be difficult to find elsewhere. Part III gives a summary of Archaeological Techniques, and Part IV gives the names of Societies and Sites to visit and a Book List. This could have been improved by giving more basic site reports, e.g. in Yorkshire, Professor Clarke's report on Starr Carr, or Sir Mortimer Wheeler's on Stanwick, rather than more general works, many of which are out of date. Some of the authors and titles are inaccurately noted: 'A Short Guide to Roman York' is wrongly ascribed to G. G. Watson, and the correct title of the R.C.H.M. volume is 'Eburacum.'

G.F.W.

A Guide to the Study of Fresh-water Biology, by **J. G. Needham** and **P. R. Needham.** 5th Edition. Pp. x + 107 with 15 pages of illustrations consisting of numerous drawings and 13 text figures. Holden-Day, Inc., San Francisco, distributed in Britain by Constable & Co. Ltd. 25/-.

This is mainly a guide to the freshwater animals of North America. The only plants included are algae which are partly in a key and partly in a heterogeneous list of Protozoa. The drawings of algae are helpful but the key is unsatisfactory and contains several misprints. The beginner may well find difficulties which are not resolved in the glossary. The zoological section of the book is attractively produced with well-packed plates but it is questionable whether its merits outweigh its limitations for the British naturalist except in cosmopolitan groups such as Protozoa and Crustacea. The section on fish has little relevance to Britain but reminds us of the poorness of our fish fauna. The section on methods is not of much use to a botanist. It is a little difficult to see why some chemical estimations are advised and others omitted. In any case those for whom apparently the manual is devised might apply the remark at the end of the description of the oxygen method to all such water chemistry—'untrained persons should not be permitted to make (oxygen) analyses.' There are several suggestions for collecting which could be improved. Polythene are preferable to the quartz bottles recommended and the lifter and handscreen described seem to have less utility than a wide-bore pipette and a stout pond net. If by a 28-mesh sieve is meant 28 meshes per linear inch then most of the fauna would be lost. The book has merits but the British collector should not put it high on his list. For identifying animals one of the British guides listed in the references is a better starting point and there is a good American guide to algae which is not listed.

J.W.G.L.; J.H.M.

Wildlife in Britain, by **Richard Fitter.** Pp. 191 with 67 illustrations, mainly from the National Collection of Nature Photographs. Penguin Books, 1963. 7/6.

This book was published in collaboration with the Council for Nature in connection with the National Nature Week Celebrations of May 18th to 25th, 1963. It deals comprehensively with the plant and animal life of the British Isles, in a general way, and with the natural history movement which has grown up to study them, and which has latterly become acutely aware of the need to conserve them.

The climatic and geological factors which determine our flora and fauna are first described and separate chapters dealing with plant and animal life are followed by consideration of their habitats. In addition to tracing the growth of the natural history and conservation movements, the author indicates the sort of work which naturalists are undertaking and how others can help. Each chapter is followed by a useful 'Further Reading' list.

The whole book is done with Fitter's customary thoroughness. For this type of publication, the photographs are remarkably well reproduced.

The appendix might suggest that Barnsley and Castleford, for instance, have local naturalists' societies, while Bradford and Hull lack them. It is, of course, a list of society members of the Council for Nature, to which no local society can afford not to belong.

This book should be put into the hands of everyone, especially the youngster, who shows the slightest interest in the wildlife of Britain, and concern for its welfare. Local societies could do worse than present all their junior members with a copy.

R.F.D.

The Web of Life: A First Book of Ecology, by **J. L. Storer.** Pp. 142 with 47 photographic illustrations. Vincent Stuart Publishers Ltd., London, 1963. 21/-.

In this book the author attempts to show the wholeness of nature; the complex balance which exists between all living things, both plant and animal, and between them and their physical environment. In other words he deals with the basis of ecology, and does so in a simple and straightforward manner. The author goes on to show how man has influenced, and in many instances destroyed, this balance and in so doing has altered and devastated the land. The most familiar examples are the dust bowls and man-made deserts which have replaced former grasslands and forests of the United States, yet the general message is the same the world over and the book becomes a powerful plea for conservation in its widest sense.

D.D.B.

The Insect Factor in Wood Decay: an account of the wood-boring insects with particular reference to timber indoors, by **Norman E. Hickin.** Pp. 336 with 2 coloured plates and 263 black and white figures. Hutchinson, 1963. 50/-.

Insects are the most important group of animals which damage wood and most people will have seen evidence of the work of the furniture beetle, *Anobium*, while the destruction caused by the death-watch beetle, *Xestobium*, in the old oak timbers of York Minster and other historic buildings is well known. Less familiar is the house longhorn beetle, *Hylotrupes bajulus*, which only occurs in pest numbers in Surrey, and the large wood-wasp, *Urocerus gigas*, which sometimes causes alarm when it emerges from the timber of new houses. Dr. Hickin describes these insects and their allies and others which may occur in timber in Britain, whether indigenous or as importations, so that they may be identified and their effect on wood known. Those which do most damage, e.g., the furniture beetle, receive detailed treatment; those of no economic importance are more briefly described, sufficiently for their identification and an understanding of their harmlessness. Keys for the identification of species are given for all the longhorn beetles likely to be found in Britain and for some other genera. The abundant illustrations facilitate recognition of the species described. Insects are only included here if they are likely to be found indoors and such serious pests of growing timber as the bark beetles (Scolytidae) only receive brief mention.

This is a text-book for the student and practitioner of wood preservation which surveys competently current knowledge in its field. It will be extremely useful, not only to these but to public health officers who have to advise on pest infestations and who are called upon to identify the insects that have been found in houses. The extensive lists of references are a guide to much specialised literature. The index is not perfect. The reader who tries to trace any reference in the text to two of the beetles figured, *Pseudoceocephalus picipes* and *Cylindrus niger*, will have a problem.

J.H.F.

Animal Life in Fresh Water, by **Helen Mellanby.** 6th Edition. Pp. 308 with 212 text figures. Methuen, 1963. 25/-.

This book is a new edition of an old favourite. That it is in continued demand is its best recommendation. It contains drawings and descriptions of all the reasonably common fresh-water animals to be found in Britain together with interesting accounts of their life histories and distribution. The drawings are simple, accurate and informative and should promote easy identification at least to genus, often to species. It is a convenient ' pocket size ' and makes an admirable field book as well as a simple laboratory handbook.

It is written in a style which is useful to school teachers and amateur naturalists and yet commands the respect of the more academic biologist. The new edition, revised and reset, brings classification, nomenclature and references up to date. The figures are still clean and sharp and show no signs of their continuous reproduction. The book remains as valuable as ever for all institutions engaged in the teaching of field biology.

H.H.

People of the Forest, by **Hans Lidman.** 80 pp. text and 143 photographic illustrations. Oliver & Boyd. 42/-.

This breath of forest air could live by its illustrations alone. Outstanding monochrome photographs of an extraordinarily rich, wild life and scenery in one of the great Swedish forests are printed, mostly full page without margin or title and some even double page, with beautiful gradation and pleasant semi-matt texture. The text which supplies the missing titles (but why not a list of illustrations somewhere ?) is far more than a ' lantern lecture ' to the pictures, but gives the impression of a generalised synthesis rather than of precise ecological study. There is, however, sufficient topographical and background detail to re create the atmosphere of the forest in each successive season. Though in an easy narrative style, it could only have been written by a true naturalist, and being free from much technical detail can be recommended for general reading or for the young naturalist. Sometimes there are snapshots in the narrative as sharp and revealing as those of the camera close-ups.

G.E.P.

Plants that changed the World, by **Bertha S. Dodge.** Pp. 164 with 9 sketches in black and white. Phoenix House Ltd., London. 15/-

The writer describes how seven plant products were originally collected and brought into cultivation. The commodities range from wax, rope and rubber to foods and drugs. Few people would include breadfruit, cocoa and chaulmoogra seeds (a former palliative in leprosy) amongst the world's most important plants but the choice has obviously been made on what journalists would call ' a story'. The adventures experienced by intrepid plant hunters are related in an accurate and exciting style which almost puts the book into the ' thriller ' class. Well printed and bound, it is singularly free from typographical errors but has a few dubious passages, for example, the all-conquering Spaniards were ' vanquished ' (p. 22) by the Aztecs' cocoa, and (p. 42) ' the great and noble Count of Chinchon ' is credited with popularizing Cinchona bark. But it was Ana, his Countess, who had the fever and encouraged its use: why should it otherwise have carried the synonym Countess Bark for over two centuries ? But these are small matters in a book well worth reading—and re-reading.

G.R.N.

Watch for the Otter, by **Elaine Hurrell.** Pp. 115 with 47 photographs and five diagrams. Country Life, London, 1963. 18/6.

This attractively illustrated book outlines some of the difficulties encountered so frequently by naturalists interested in the recording of British mammals and their habits. H. G. Hurrell and his family investigated the otter population of their Devonshire neighbourhood from 1957 to 1961. This account tells of their experiences, the highlights and the frustrations, how they overcame some of the difficulties peculiar to observing this nocturnal yet perhaps most fascinating of our native creatures and offers useful guidance to others who would care to carry out surveys of our greatest wanderer in their own localities. The value of ' signs and indications ' such as its seals, hovers, holts and spraints denoting the presence and feeding habits of the unseen animal is duly stressed. Much helpful information was gained by keeping in captivity two otters which later became film stars in their own right. The book is a useful and entertaining addition to the natural history records of our British mammals. The mysterious ' black tarry spraints ' so often mentioned no doubt refer to digested blood which I have found so frequently in the stomachs of members of the British Mustelidae.

E.H.

Shark ! Killer of the Sea, by **Thomas Helm.** Pp. 190, with 14 photographic illustrations and 22 drawings. Robert Hale, 1962. 18/-.

Popular interest in life in the sea has been intensified in recent times not merely by the increasing number of books on marine life but particularly by the fascinating revelations of underwater cinematography with its intimacy and element of adventure. The powerful but seemingly effortless propulsive movements of the shark through the water among shoals of small fish and round rock and coral reef seeking its food has become a striking and familiar feature of film presentations but, with records of the dangers of shark attacks on surf bathing beaches in many parts of the world, it is regarded as a fearsome monster. This sinister reputation is examined and discussed in the lively and interesting narrative of this book and the author, himself a keen angler, is able to contribute many informative and dramatic accounts from his own experience in American coastal waters.

It seems there has been a rapid rise in the number of shark attacks in the last few years and explanations based upon increased numbers of shark or more skin-divers or warmer waters have not provided the complete answer. Except for the large Whale and Basking Sharks, content to feed on small marine organisms and harmless to man, these fish have a rapacious way of life and with their size, teeth, jaws and instincts can become dangerous to man. Their sight is not good so that the hunt depends primarily on the nose and the smell of dead or dying fish in the water or blood will attract them from a distance. Putrid fish, however, is avoided and this aversion led to a search for chemicals with repellent effects which could be used for the protection of swimmers. An interesting summary of investigations into ways and means of protection is the substance of the concluding chapter of the book.

E.A.S.

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YORKSHIRE NATURALISTS' UNION
ORNITHOLOGICAL SECTION

In conjunction with the Ornithological section of the Y.N.U., the Doncaster and District Ornithological Society have arranged a joint meeting with the British Trust for Ornithology to be held at the Doncaster Museum and Art Gallery, Chequer Road, Doncaster on the afternoon and evening of Saturday, 30th November, 1963, commencing at 3-0 p.m.

For the B.T.O., Ron Hickling, whose subject is "How many birds?" will be speaking on the vital topic of the effects of toxic chemicals. After tea R. F. Dickens will speak for the Y.N.U., on his studies of Skuas in Shetland and Iceland.

Bookings for tea to J. B. Hague, 17a Woodfield Avenue, Mexborough, with 5/- remittance.

Exchange copies of the following periodicals may be had on loan from The Editor of *The Naturalist*, The University, Leeds 2, on receipt of stamped addressed envelope:

British Birds.
Bird Notes.
Bird Study.
Essex Naturalist.
The London Naturalist.
Irish Naturalists' Journal.
Transactions of the Lincolnshire Naturalists' Union.
Transactions of the British Mycological Society.

Copies of Mr. A. A. Pearson's Papers, Mycena and The Genus Inocybe, price 2/6 each, and Mr. P. D. Orton's Cortinarius Part 1 and 2, price 7/6 each, may be obtained from the Editor of *The Naturalist.*

SPURN POINT AND ITS PREDECESSORS

G. DE BOER

THAT the interest of members of the Y.N.U. in the flora and fauna of Spurn Point extends also to the history and character of their habitat as a physical feature is attested by a number of contributions to this theme that have appeared in *The Naturalist* from time to time.[1] This present article presents the results obtained so far of investigations by members of the Department of Geography, the University of Hull, made possible by a grant from the Nature Conservancy in 1959, and much helped by the friendliness and co-operation of the officers of the Yorkshire Naturalists' Trust.

Information relating to the earlier history of Spurn Point is quite plentiful, varied, and intriguing, but because it consists of isolated scraps of information rather than a connected narrative, there has been much difference of opinion and confusion in its interpretation, the more so because of the mutability of Spurn Point as a physical feature and corresponding variations in place names. Speculation about the evolution of Spurn Point as a physical feature has been much more limited, indeed little has been added to the suggestions made by Clement Reid in the Geological Survey Memoir on Holderness of 1885.

This is no doubt partly because for the last century, and therefore for much the greater part of the time for which reliable maps are available, Spurn Point has been maintained artificially following the closing of the breaches of 1849-56 and the placing of groynes along the seaward side of the threatened portion; as a result, that part of the history of Spurn for which there is the clearest and best evidence is the least representative of the whole. The main developments of these last hundred years can be gathered from a comparision of the first Ordnance Survey six-inch map of Spurn of 1852 with the current edition which is based on a survey of 1928. The 1852 map, made before the main breach had been closed, shows that the neck of Spurn at high water was a string of small islands and that the Head with the light-houses was a larger island; it is in fact named Spurn Island on this map. It was suffering severe erosion and was long and slender (Fig. 1b). On the 1928 map, little change in the position of the seaward side of the Head is shown, but, as a result of the closing of the breaches and the building of groynes, high water mark along the sea side of the neck is some yards seawards of the 1852 line, very probably the only such advance in the whole history of Spurn. The tip of Spurn, made narrow and tapering by erosion in 1852 has, on the 1928 map, been restored to the bulbous shape which it seems generally to have had. In 1870 the site of the breach was further strengthened by the building of the Chalk Bank.

Spurn Point therefore at the present time is not a fair sample of what there has been there before, so that it is necessary to use caution in applying arguments based on what is happening there now to what might have happened in the past, when Spurn has been of a very different size and shape. To provide a full account of Spurn, therefore, we have to have recourse to evidence of earlier periods, evidence of possibly dubious reliability, and which, as was said earlier, consists of items of information which need to be threaded together in the way which most agrees with and makes the best sense of all that is known. The problem has been therefore attacked on two fronts, in the field by a study of the movements of material along the beaches at Spurn and of the conditions associated with accretion or erosion there on the one hand, and on the other by a comprehensive examination of the historical data. Miss A. W. Phillips undertook the greater part of the work in the field and the present writer has been responsible for the historical aspects of the enquiry and for combining the two in the hypothesis presented below.

The main processes involved in the building of Spurn Point have always seemed fairly clear. Sand and shingle derived from the erosion of the cliffs of Holderness are carried southwards by wave action and are thrown up to form a spit which grows longer as material is carried along the beach and deposited at the tip which is still extending southwards. Some stays here, some is carried by refracted waves round to the Humber side and helps to give the tip its bulbous shape, and some is swept by

[1] J. Cordeaux, (1884). The Spurn. 1-8.
T. Blashill, (1904). Changes in Spurn Point and their bearing on the site of Ravenser, 264-268.
A. E. Butterfield. (1904). Notes on the Growth of Spurn, 325-328.
G. H. Ainsworth, (1951). The Entomology of Spurn Peninsula: 1 A Short introduction to the Geology of Spurn, 78-83.

the ebb-tide on to the Stony Binks, the great banner-like shoal that curves seawards from the tip. Experiments by Miss Phillips with tracer pebbles have confirmed this. Sand is swept up by the wind from the wide beaches exposed at low tide and is built into dunes which are colonised by plants. This very general account fails however to explain the existence of Old Den, the shoal of muddy shingle in the Humber a quarter of a mile off the Chalk Bank, and the phases of destruction that historical evidence indicates have punctuated periods of relative stability and growth. A satisfactory account has to explain therefore how a constructional feature such as Spurn Point is built at all on a coast where wave activity is so generally destructive, why construction should at intervals turn to destruction, and has to show how all this harmonises with the historical evidence.

One conclusion reached by Miss Phillips has a very important bearing on this point. Regular surveys and plots of profiles of the beaches studied in relation to wind and wave records show that serious erosion of the beaches is almost exclusively associated with winds of over 15 knots blowing from directions between about north and north-west. These winds, which blow from the North Atlantic along the length of the North Sea, are responsible for the biggest and most powerful waves which occur, and these are refracted on to the Holderness coast and Spurn Point with destructive effect. Because they blow in the rear of depressions crossing the North Sea, north-westerly gales are often associated with surges, that is the raising of sea-level as a result of wind and barometric pressure distribution, and the most destructive conditions of all occur when such a surge, high spring tides, and north to north-westerly gales coincide. Winds of less strength from this direction or almost any strength from other directions have either little erosional effect or cause accretion on the beaches. Evidence to much the same effect was given in 1907 before the Royal Commission on Sea Erosion which reported in 1909. ' The only real sea erosion occurs in gales from north-west to east. Gales from south to east cause no erosion on this coast worth mentioning.' It was in just such conditions that the breach of 1849 was made. The conclusion appears to be that those parts of Spurn most exposed to waves from these directions are particularly liable to damage, and if the natural course of development followed by Spurn Point leads to such exposure, then a breach sooner or later will be inevitable.

The natural course of development followed by Spurn Point does, in fact, seem to lead to just this situation. The south-eastern end of Holderness, the root from which Spurn grows, is wedge-shaped; coastal erosion is constantly shaving away one face of the wedge at a sustained rate for which there are few parallels in the world. As therefore sea erosion causes this side of the wedge to retreat south-westwards, the point of the wedge, the root of Spurn, will fall back even more rapidly, in fact, because the angle of the wedge is about 30°, about twice as rapidly. The neck of Spurn will therefore be extended after it in the same direction and so will become increasingly exposed to the quarter from which destruction comes.

Figure 1a represents the theoretical cycle of development to be expected on this basis. The shaded triangle represents the wedge shaped root. Let us suppose that one ' Spurn ' has just been destroyed and that a new one is developing. It seems likely that the new Spurn will grow out from the root in the direction which is most sheltered, and this is south-eastwards, tucked up as it were into the mouth of the Humber in the lee of the wedge. There may be a fairly sharp angle where the spit joins on to Holderness. As waves carry material along the beach of this new feature and round its end, so a broad end will be formed that will grow out farther and farther. Wave energy will be concentrated by refraction on to the initial sharp angle which will be modified in consequence into a broader curve. All the while, however, the withdrawal of the point of the sheltering wedge means that the spit is becoming more exposed, that the balance of conditions, which in the early stages is tilted in favour of construction, swings over to the other side. Eventually, when it has thus become vulnerable, the neck will be breached, probably when a north to north-westerly gale coincides with a high spring tide. The material torn out of the breach will be carried into the Humber and dumped there as a shoal, a process perhaps aided by tidal currents sweeping through, which will develop the breach into a swatchway or transverse tidal channel. Material moving along the beach will be carried though the breach or swatchway, so the head, no longer supplied, will dwindle away. What remains of the neck will probably be pushed back by the sea, and relative stability will only be achieved and growth renewed when the beginnings of the new spit are in the lee of the new position of the root.

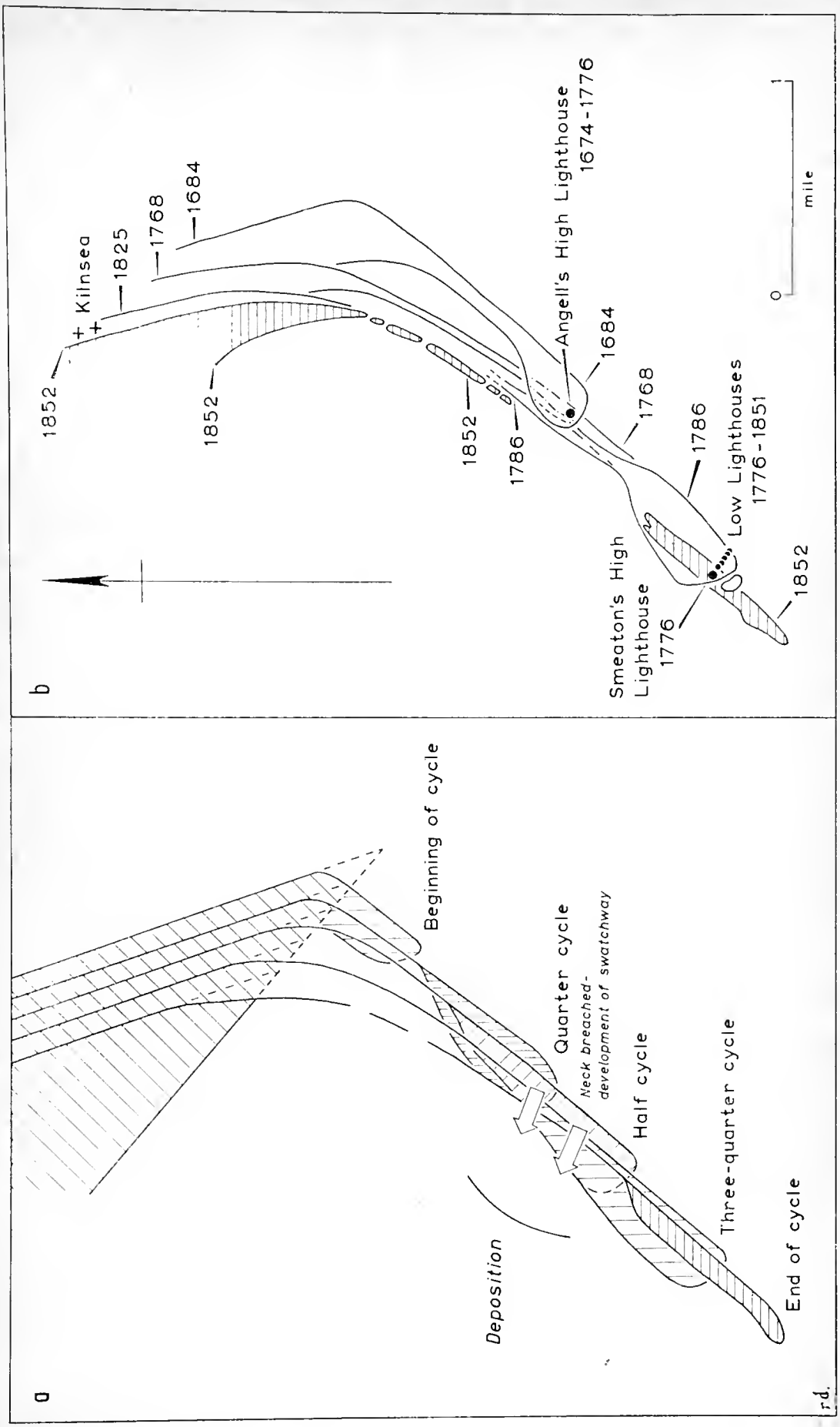

Fig. 1. (a) Hypothetical evolution of Spurn.

(b) Spurn Point 1684-1852.

The evidence from Miss Phillip's field work bears out this hypothesis as far as it goes but it obviously cannot provide confirmation for the whole pattern of variation outlined above. It does show that the erosion of the beaches during strong north-westerly gales is more severe on the exposed section from the neck northwards than along the head, but to find out how long it takes after one breach for a new spit to grow out until it is breached in its turn, the pattern of events when a breach is not closed artificially, and the succession of shapes presented by the spit as it develops, we must turn to the historical evidence.

This evidence suggests that there is an interval of about 240 to 250 years between major breaches; Ravenser Odd was destroyed in about 1360, the spit that developed after this was breached in 1610-20, and its successor would almost certainly have disappeared if the breaches of 1849 to 56 had not been closed. Blashill made a similar suggestion in his article of 1904. ' . . . There seems to be a possibility that between the destruction of Ravenser Odd and the formation of the present bank of shingle, a new and distinct Spurn Point was thrown out and destroyed.' However, it is only for the period from about 1610 onwards that the historical evidence is sufficient to provide a continuous story. There are maps, charts, sailing directions from pilot books and a great deal of information from litigation about the Spurn lighthouses.

The early seventeenth century breach is referred to by a lawyer Robert Callis in a course of readings or lectures upon the Statute of Sewers given by him in 1622: ' . . . of late years parcel of the Spurnhead of Yorkshire which before did adhere to the continent was torn therefrom by the sea and is now in the nature of an island '— and in a lawyer's brief for a lawsuit of 1684 which summarises evidence to the effect that Ravensey Spurn had been swept into the Humber near the beginning of the century. Pilot books of the period provide further details. *The Light of Navigation* of the Dutch cartographer W. J. Blaeu, first published in English in 1612, describes conditions before the breach. The mariner sailing into the Humber is directed to get Patrington steeple (mistakenly called Poltoren) in line with the tip of the north point of Humber which is Ravenspurre. Blaeu's *The Sea-Mirrour* (first English edition, 1625), which superseded *The Light of Navigation*, shows the effects of the breach. The mariner now must get Patrington steeple (confused with Paull again) a little south of the north point (i.e. the spit is shorter) and "runne to the little Iland which lyeth a little by west that foresaid north poynt.' The chart in John Sellers *The English Pilot* (1671) shows the ' north point ' still well short of the little island now labelled ' The Denn.' Nearby contemporary depositions of witnesses tell us it was also called John Harrison's Hill or the South Point. Sellers' *Coasting Pilot* (*c.* 1675) shows Angell's lighthouse, built 1674, on a tip that now overlaps the Den. The sailing directions refer to Spurn Point, the first recorded use of this name, and North Point and South Point fall out of use. The Den to begin with had sand hills with sea-bent and bushes growing on them. Depositions of witnesses in lawsuits and references by Smeaton indicate the stages by which it became a shingle bank covered at high tide and very similar to its condition today. Its current name, Old Den, first appears on a chart of 1825.

Spurn Point continued to grow. Collin's chart of 1684 is probably the most reliable representation of this period; the ' hammer-toed ' shape of Spurn may be exaggerated but probably reflects a real characteristic of this early stage and is not just a blunder. Growth went on rapidly for, by 1766, Angell's lighthouse, which was right on the tip in 1674, was a little over a mile from the point and was thus misleading. New lighthouses were therefore built by Smeaton in 1772-1776. These early lighthouses were built in pairs, with a ' low-light ' to seaward of the main or high light to act as a leading mark. The fortunes of the lowlights show how the shape of Spurn was changing. Angell's low light had to be moved farther inland in 1735 and was demolished by the sea in 1763. By 1776 the site of his high lighthouse was below high water mark. Charts reveal how the ' hammer-toe ' of 1684 had become by this time a sweeping curve. Smeaton's low lighthouse was washed down about 1778 and its successors, brought into use in 1816, 1830, 1831 and 1851 each nearer to the high lighthouse than the one before show how Spurn was retreating westwards as well as growing longer.

The way in which the greater exposure resulting from the north-westwards retreat of the neck was causing the neck to become lower, narrower and longer stretches of it to be more frequently covered by high tides can be gathered from Smeaton's account and from depositions of witnesses in lawsuits of this period. The head also became narrower, losing by erosion on the river side as well as on the sea side. Finally during

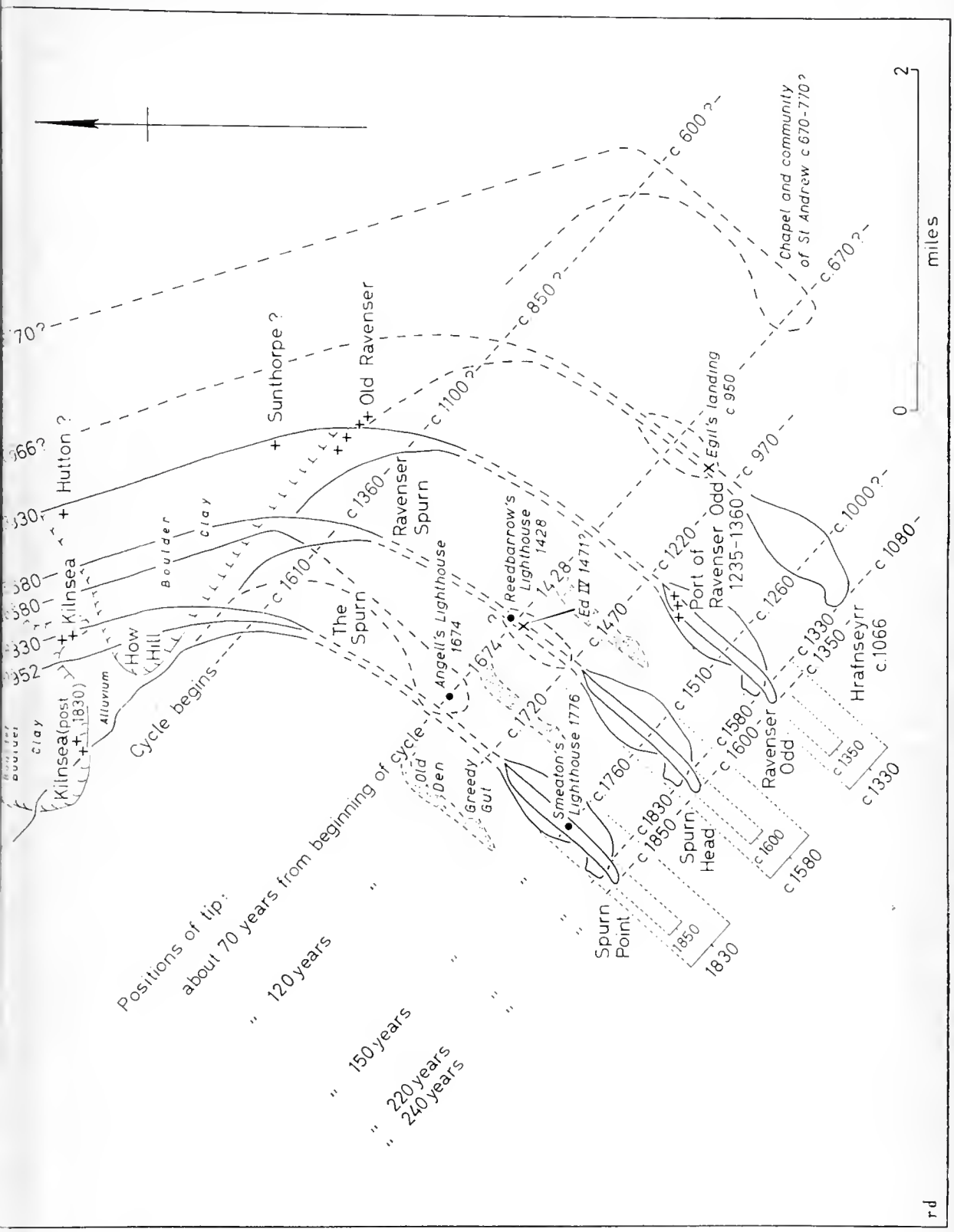

Fig. 2. Spurn Point and its predecessors.

a north-westerly on December 28th, 1849, a breach was torn open in the neck of Spurn which grew in size until by 1851 it was 500 yards wide at highwater and 16 feet deep. This breach was still growing therefore up to the time when it was sealed and it seems very probably that, had it not been closed, it and other breaches that occurred farther north in 1851 and 1856 would have developed until the spit had suffered the fate of its predecessor.

The actual evolution of the spit during this period, therefore, agrees closely with the hypothetical evolution outlined earlier (Fig. 1). As, however, the same marine processes were at work in the same general setting before as well as during the 1610-1850 period, it seems reasonable to suggest that the predecessors of this Spurn probably evolved on broadly similar lines. We will therefore now take the 1610-1850 period as a model or analogy of what might have happened previously in order to see if this less well recorded earlier history falls into a pattern of repeating cycles of development. The 1610-1850 period also provides us with what the general hypothesis could not, namely a time scale.

This is done diagrammatically in Figure 2. Spurn and a number of its predecessors have been placed in their appropriate relative positions on the basis of an assumed mean annual retreat of the coast near Kilnsea of about $2\frac{1}{2}$ yards a year and a repeating cycle of 250 years.

With two exceptions, only the very end stages of each cycle are indicated, in fact those stages which cover the reduction of the head of the spit from quite a broad area to a narrow strip, as in 1830 and 1850 respectively, and these shapes have been used for the earlier spits because they are regarded as typical of these late stages. The two exceptions are the two shapes derived from Collins' chart of 1684 to represent conditions about 1680 and also those about 1,000 years or four cycles earlier, about 670 A.D. The names distinctive of each cycle have been put by each spit—Hrafnseyrr, Ravenser Odd, Ravenser Spurn later Spurn Head, and Spurn Point. An estimate of the successive positions of the tip throughout each cycle is made by drawing parallel lines through the known positions of the tip in the last cycle to intersect the earlier spits. This is obviously an over-simplification because, apart from the 1680 outline, it ignores the westwards movement of the spit during each cycle, but it does give some indication of what the situation might have been, and we can check by seeing how far this agrees with or makes good sense of the historical evidence.

The earliest references provide us with so little information and are so widely separated from each other in time that to consider them in relation to this cyclical pattern is hardly more than sheer speculation. Nevertheless to do so does not cause any conflict between evidence and hypothesis, indeed it suggests interesting possibilities. The first reference occurs in Alcuin's *Life of St. Willibrord*. Shortly after Willibrord's birth in 657 or 658 A.D., his father Wilgils became a monk and later retired to ' the promontories encircled by the Ocean sea and Humber river ' where he founded a chapel and small community in honour of St. Andrew, of which Alcuin himself (735-804 A.D.) later became patron and legal proprietor. The description of the site implies a predecessor of Spurn; that Alcuin was concerned with the community indicates that it probably lasted until the second half of the eight century, i.e. for at least a century; this is analogous to conditions a millenium later when Angell built his lighthouse in 1674 on a site that lasted until about 1776. Probably a site amongst sand dunes, cut off at times from the mainland by high tides would be attractive to a religious community in this, the period of greatness of Lindisfarne.

Possibly Wilgil's spit would reach the end of its cycle about 850 A.D. There is nothing further however, until we come to a reference in an Icelandic saga to an event of about 950 A.D. during the brief rule of Eric Bloodaxe in York. As Egil, the hero of Egil's Saga, and his companions were being driven in a boat by a gale south along the coast they found themselves encircled by breakers to landwards, ahead and seawards. They could not turn back against the wind so they had to land by going through the breakers to shore, wrecking their boat in the process. They found themselves at the mouth of the Humber. The conditions described are precisely those that obtain when a heavy sea is breaking on the Stony Binks.

The next references are to events of which the climax was the battle of Stamford Bridge in 1066. The Scandinavians called here before the battle, and the survivors sailed from here afterwards and the place is now named Hrafnseyrr (= Hrafn's sandbank). The meaning of the name implies a physical feature, probably the same

predecessor of Spurn that Egil landed on, and none of the references imply a settlement or haven, but instead a bare and somewhat remote spot.

There are no further references for nearly two centuries. We may speculate that Hrafnseyrr by 1066 would have developed to the vulnerable late stage of the cycle corresponding to about 1830. There were great storms and sea floods associated with spring tides on the east coast in 1099 to which the origin of the Goodwin Sands was traditionally ascribed, and this possibly was about the time that this predecessor of Spurn came to an end and was replaced by a successor.

This successor eventually became called Ravenser Odd, and there has been so much confusion about the names Ravenser, Ravenser Odd, and Ravenspurn that a word of explanation is necessary. As we have just seen, Hrafnseyrr or Ravenser was originally the name of the predecessor of Spurn that existed as a bare physical feature in 1066. By 1230 Ravenser had become the name of a village, the home of an agricultural community, and a later reference tells us that, at about that time, the spit itself was called Ravenser Odd (=the headland near Hrafn's sandbank). About 1235 however, building began on Ravenser Odd and this developed into an important port also called Ravenser Odd, or Odd juxta Ravenser, or sometimes just Ravenser. The original, rural Ravenser, began to be called Old Ravenser, though either place might be referred to simply as Ravenser. We can distinguish which is meant by whether farming or commercial or maritime activity is referred to.

Although there has been much discussion of the site of Ravenser Odd, it seems to have been on the spit itself, probably on the river side where it would have shelter from the sea, and might have been sheltered from the river by a feature similar to Old Den, perhaps a relic of Hrafnseyrr. The corresponding position on Spurn today would be a little north perhaps of the Lifeboat Inn, though the actual site was perhaps 1½ miles to seaward of this. The *Meaux Chronicle* describes how the town was reached by a long sandy causeway with the sea on one side and the Humber on the other. If we mark the port of Ravenser Odd in this position on Figure 2, there is good agreement with the evidence of location and duration. At this period, the old English mile of 10 furlongs or a little more was in use. The *Meaux Chronicle* says that Ravenser Odd was a mile or more from the mainland and about four miles south of Easington. The site on Figure 2 is 1½ old miles from the mainland and about 4½ old miles south of Easington. Moreover, the port of Ravenser Odd came into existence about 1235, began to suffer from erosion in 1310 which became serious in the 30's and 40's and was destroyed about 1360. According to the diagram, the site came into existence between 1220 and 1260, erosion would become severe after 1330 and destruction would be likely between 1350 and 1360.

The new feature that began to grow, the immediate predecessor of the present Spurn, was called Ravenser Spurn, Ravenspurn, or Ravenspur, spur signifying a projecting feature. The village of Old Ravenser survived for a while the destruction of the port of Ravenser Odd but there is no evidence whatever of a town on Ravenser Spurn or of this name. The forms Ravensburgh or Ravenspurgh used by some of the chroniclers and by Shakespeare may be partly responsible for this notion. The name Ravenser Spurn is first recorded in 1395, and when Henry IV landed in 1399, he was met by an unlicensed hermit, apparently the only inhabitant. As J. R. Boyle pointed out (*The Lost Towns of the Humber*, p. 59, footnote), there appears to be no reason to link this event with the Kilnsea Cross. Reference to the place simply as Spurn occurs as early as 1423, possibly as early as 1408. The erection of the first lighthouse recorded on Spurn was in hand in 1428 by another hermit Richard Reedbarrowe, and although we know nothing of the site, the date phases almost exactly with Justinian Angell's lighthouse. A further royal landing took place in 1471, that of Edward IV. A contemporary account says he was driven ashore in a gale and had to go two miles to a poor village for shelter. The poor village probably was Kilnsea, and the reconstruction in Figure 2 makes good sense of this, for a landing place two old miles farther south would, according to the diagram, bring the king ashore near the tip, probably on the gently shelving sands inside the head, sheltered from the easterly gales which had driven him and his companions up the river. Little else is recorded of Ravenser Spurn. A commissioners' report of 1567 describes it as consisting of sandy hills covered with a few small bents and scrubby thorns, almost covered by high spring tides, and valueless. There is interesting information from maps. Saxton's county map of 1577 has the name Spurn Head for the first time, but it is on a very small scale. Two larger scale maps in the British Museum and reproduced in Sheppard's *Lost Towns of the Yorkshire Coast* (pp. 209 and 217) are particularly

valuable. They can be dated about 1540 and 1579 (not temp. Henry VIII as in Sheppard, p. 209) and, though crude, they represent Spurn in the appropriate stages of the cycle suggested here, as will be seen if they are compared, for example, with Tuke's map of Yorkshire of 1787 and the first edition of the Ordnance Survey one-inch map of 1824. A document of 1602 mentions 'the Wasting and the great Dekay of Ravinspourne' and presumably soon after 1610, destruction followed.

Thus, in conclusion, it seems reasonable to suggest that there are traces of four predecessors of the present Spurn, and rather more than traces of two of these four. Although proof may be well beyond our reach, at least this hypothesis seems to be in harmony with and to make good sense of both the physiographical and historical evidence so far available, and to indicate a number of directions for further investigation. It also warrants treatment at greater length, and it is hoped to do this in due course.

***Trocheta subviridis*—a further Yorkshire record.**—Since the recent record of Dutrochet's Land Leech in the *Naturalist* (1963, p. 29) the following find has been made at York. On June 4th, 1963, Mr. M. J. Payne brought to me a large leech which he had discovered in a greenhouse soakaway on the Rural Science Estate of St. John's College at Heworth Croft, York. This was identified as *Trocheta subviridis* and subsequent search revealed five more specimens in the soakaway. In Mann's 'Key to the British Freshwater Leeches' (*Freshwater Biological Association Scientific Publications*, No. 14 (1954), it is stated that *T. subviridis* may be found 'in garden soil particularly yellow clay' and it is noteworthy that the soakaway drains into such a clay soil.

Mr. D. H. Adams informs me that two or three years ago workmen digging up an old field drain on the same estate uncovered a number of large leeches. These were not identified at the time, but it seems probable that these also were *T. subviridis*.

The life cycle of this interesting amphibious leech has recently been described by J. C. Hartley in *Journ. Anim. Ecol.*, **31,** 519-524 (1962).—D. C. Geddes, Biology Department, St. John's College, York.

Lincolnshire Sphagna Additions.—Since the publication of my article on the distribution of *Sphagna* in Lincolnshire (*Nat.*, 1962, 45-49) numerous records have been added to the registers. Other than a small pocket of *Sphagnum recurvum* growing in a boggy field at Benniworth Haven, the locations coincide with previously published records. A clearer picture of the present status of this genus in Lincolnshire is apparent since records of all species, with the exception of *Sphagnum nemoreum*, are based on recent recordings.

The nomenclature and index numbers, as in the previous article, are according to Richards and Wallace (An annotated List of British Mosses, *Trans. Brit. Bryol. Soc.*, **1,** 4, Appendix i-xxxi, 1950), although these have, in many instances, been superseded. The number preceding the location corresponds with the natural history division as illustrated in my previous article. All records are substantiated by herbarium material in the Herb. Bryol. Lincolniensis at the City and County Museum, Lincoln, unless otherwise stated.

1/1. *S. palustre* Linn. 3, add Wrawby Moor (Seaward, July, 1963).
1/4. *S. papillosum* Lindb. 1, Epworth turbary (Seaward, Sept., 1962).
1/6. *S. compactum* DC. 10, Woodhall Spa (H. P. Reader, May, 1914)—in Herb. Bristol Univ.
1/9. *S. squarrosum* Pers. ex Crome. 2, add Twigmoor (Seaward, April, 1962).
1/13. *S. recurvum* P. Beauv. 1, add Epworth turbary (Seaward, Sept., 1962). 8, Benniworth Haven (Miss W. Heath, May, 1963).
1/19b. *S. subsecundum* var. *inundatum* (Russ.) C. Jens. 3, add Wrawby Moor (Seaward, June, 1963).
1/20. *S. fimbriatum* Wils. 3, Wrawby Moor (Seaward, June, 1963).
1/28. *S. plumulosum* Röll. 2, add Twigmoor (Seaward, April, 1962); 13, Hartsholme (Seaward, August, 1963).

I would be grateful for information concerning the records for *Sphagnum rubellum* Wils. from both North (V.C. 54) and South (V.C. 53) Lincolnshire which appear in Sherrin's *Census Catalogue of British Sphagna* (1937). These records are untraceable, and hence have been bracketed in the new (1963) *Census Catalogue of British Mosses*.—Mark R. D. Seaward.

THE STATUS OF CERTAIN BIRDS IN THE SOUTH-WESTERN DALES OF THE NORTH YORK MOORS

P. R. EVANS

Introduction

In the summer of 1962, I was able to spend many hours in Ryedale, Riccaldale and Kirkdale, where I made accurate counts in May and June of certain species of birds which held territories there. Whenever possible, at least two visits were paid to each stretch of the dale. Although no systematic search for nests was made, I do not believe that a census based on territories alone gives appreciably less information on the habitat preferences of each species than a census based on actual nests. In most of the fieldwork I was considerably assisted by members of Ampleforth College Natural History Society—in particular by S. R. Brennan, A. A. Clifton, M. Henry and C. J. Wright—and to these I extend my thanks. I am also grateful to Mr. C. D. Milne for sending me notes from Ryedale; and to Rev. M. R. Everest, Rev. R. A.

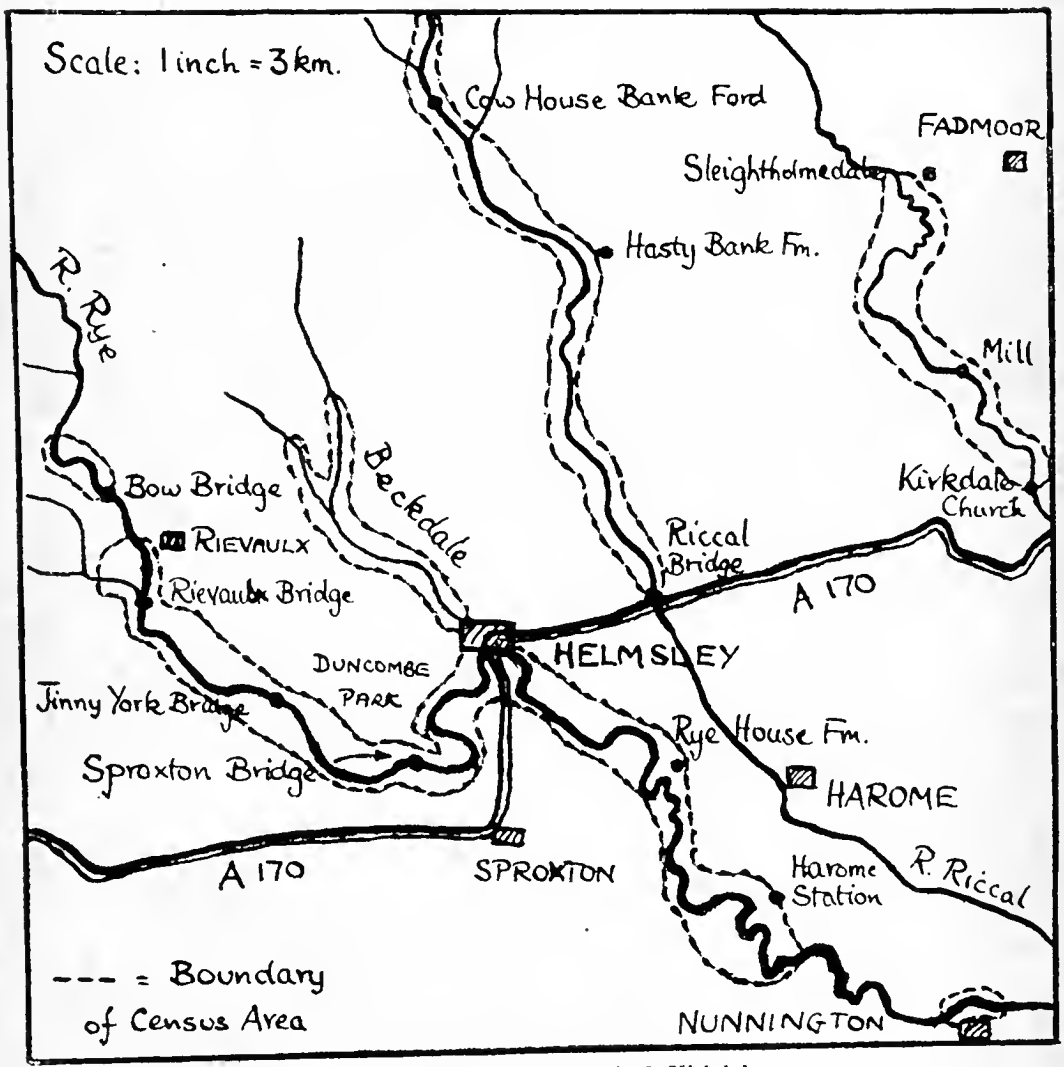

Fig. 1. Ryedale, Riccaldale & Kirkdale.

Gilman and Mr. A. F. G. Walker for reading parts of the manuscript, though I do not wish them to be held responsible for any opinions (or possible errors) which this paper contains.

There were several reasons for choosing the three dales which made up the survey area. 1. There is little detailed published work on their avifauna. 2. They are ornithologically rich in variety of species. 3. They are liable to considerable change in the next few years as ever more deciduous trees give way to the relentless advance of the conifer plantations. 4. They are reasonably close to Ampleforth, so that we were able to visit them regularly. Other dales were visited briefly in connection with the B.T.O. Pied Flycatcher survey.

The Census Area

The boundaries of the area are shown in fig. 1. The rivers Rye, Riccal and Hodge Beck drain the south-western part of the limestone plateau known as the North York Moors. Many of the tributaries of the Rye have their sources in the Hambleton Hills, which form the high western escarpment of the Moors.

In Ryedale, the northern limit of the census area lay just south of the junction of Cadell with the Rye, near Tile House. From here to Rievaulx the river flows swiftly through a fertile plain about half a mile wide. Alder (*Alnus glutinosa*) and Wych Elm (*Ulmus glabra*) line the rocky banks, and more extensive mixed deciduous woodland lies to the east of the river. From Rievaulx to Helmsley, the Rye is contained by a steep-sided U-shaped valley, which is crossed and recrossed by the fairly shallow fast-flowing waters. One bank of the river is predominantly sandy, and adjoins grazing land; the other is a continuation of the steep valley side which is, or has been, heavily wooded. The stretch from Rievaulx to Jinny York Bridge has very few trees along either bank or valley slope, but from here to Sproxton Bridge there is an almost continuous thin fringe of alders on one or both banks. Here also the valley sides are wooded, intermittently, with mature Oaks (*Quercus petraea*) and Beeches (*Fagus sylvatica*)—all that remains of more extensive forest. From Sproxton Bridge to Helmsley the river banks are thickly bordered by Wych Elm and some Alder; the valley sides are also thickly wooded with mature Oak, Ash (*Fraxinus excelsior*) and Beech, and lesser numbers of Sycamore (*Acer pseudoplatanus*) and Birch (*Betula verrucosa*). Oak and Beech are dominant in different parts of the woodland. Between Helmsley and Nunnington, the Rye meanders slowly through a wide flood plain, and is only flanked by trees (mainly Alder) for a mile downstream from Helmsley, and again briefly near Rye House Farm and Harome Station. In this part of the river the banks are 3-4 feet high, and are often sandy when not tree-lined. In the bed of the river, gravel banks are numerous, but shift regularly at times of flood.

The Riccal and Hodge Beck are both much narrower rivers (and valleys) than the Rye. Just north of Eastmoors Chapel, the Riccal at the boundary of the census area is little more than a stream, flowing through a shallow rocky valley bordered by small deciduous trees, chiefly Alder, Birch and Holly (*Ilex aquifolium*). Downstream, from the ford below Cow House Bank to Hasty Bank Farm, the river is flanked by meadowland or gentle slopes covered with open woodland in which Silver Birch dominates. Southwards from Hasty Bank Farm the Riccal flows through a deep narrow valley; both slopes have been, or are being, planted with conifers by the Forestry Commission, and only a few mature deciduous trees (chiefly Alder) remain here and there along the water's edge. In 1962 the river disappeared underground into the limestone about a mile ' upstream ' from Riccal Bridge; this happens each summer, except in very wet weather.

The northern boundary of the census area in Kirkdale lay at Sleightholmedale. Here the west bank of the river is thickly wooded (Skiplam Wood); the steep valley slope holds a close stand of Beech and Ash, while the edge of the high-level plateau is largely composed of stunted Oak and Birch. For at least a half mile south of Skiplam Wood, both sides of the dale are well afforested, mainly with Oak. Further downstream a major area has recently been felled, almost as far as Kirkdale Mill. From here to St. Gregory's Minster (Kirkdale Church) the river valley is rather narrow, with one bank a steep limestone cliff, and thick woodland (predominantly Oak but with some Ash) on the slopes above. Some half a mile downstream from the Mill, the river disappeared into a series of swallow holes, to emerge again just south of the church, near the Kirkdale Caves where prehistoric animal remains were found in 1821.

Also included in the survey was part of Beckdale, which runs north-west from Helmsley. This dale is thickly wooded with conifers in its higher regions, but there are large strips of open ground with extensive growth of Bramble (*Rubus fruticosus*) and Hazel (*Corylus avellana*) along the streams. In the region nearer Helmsley the beck flows through meadows bordered by thick hedges, which also give abundant low cover near the water. It will be apparent that the vegetation of Beckdale is totally different from that of the larger dales; the point will be discussed again later.

Results and Discussion

Species will be dealt with in Wetmore order. The method of counting varied between species, and is usually mentioned in the text below. In general, territories

of those birds which stayed on or by the rivers were found by noting the points beyond which they would not move. Counts of singing birds were backed up by sight records whenever possible.

Pre-1962 records are taken from the Y.N.U. Ornithological Reports unless otherwise stated.

Heron—(*Ardea cinerea*)

The valleys and flood plains of the Rye, the Derwent, and their tributaries provide good feeding grounds for Herons. An old established heronry at Scampston Park, near Malton, has held about a dozen nests annually in the last ten years. Another, in Gilling Woods, also held about a dozen nests regularly up to 1928 (Nicholson, 1929), but it has since had a rather chequered history. During the war years few nests were reported, but it had recovered to its former strength by 1946. Later in the 1940's it suffered from over-enthusiastic photographers, and this may have resulted in its transfer in the early 1950's to another group of Scots Pines (*Pinus sylvestris*) in a less accessible part of the forest. Here it remained until at least 1957, but no trace was visible at the traditional site in 1962. Whether disturbance by forestry operations (e.g. bulldozing of extensive firebreaks) was in any way responsible for its disappearance, I do not know.

Several records of heronries in Ryedale have been published: a small colony near Sproxton was deserted before 1947 (Inman, 1947); a single pair nested at Harome in 1955, three pairs at Rye House Farm in 1956, four pairs in ' Ryedale ' in 1957 and 1959. In 1962 there were four occupied nests in a wood near Sproxton, with full grown young on June 23rd. It seems very likely that all these records refer to the same locality.

There are no recent records of Herons nesting in Riccaldale, but a very old record was quoted by Nelson (1907). The records for Kirkdale, as for Ryedale, probably all refer to a single heronry. One pair bred in 1943; three nests were found at Fadmoor in 1953 and each year thereafter until 1959, when there were four. An apparent gap in observations in 1956 was filled by a reference to three nests at Sleightholmedale. The heronry located in 1962 was in Scots Pines on the opposite side of the valley to Sleightholmedale; it contained *circa* six pairs in May, and one nest held three well grown young on May 31st. Rumour has it that this area of woodland is to be felled before long; one can only hope that the pine trees will be spared. Whether the demise of the Gilling heronry can be related to the growth of those in Ryedale and Kirkdale is uncertain.

Oystercatcher—(*Haematopus ostralegus*)

The first bird to be recorded in Ryedale was in March, 1951; the first pair bred in 1955, and there were two pairs in 1958. In 1961, both pairs were just upstream from Harome Station (W. H. R. Pattisson, *in litt.*), but in 1962 there was only one pair in this locality, and they failed to breed successfully. Buxton (1961) has shown that north Yorkshire was colonised by birds crossing from the west, over the Pennine watershed.

Common Sandpiper—(*Tringa hypoleucos*)

The upper reaches of the Rye were counted in May, 1962. There was a pair at Rievaulx, two between Jinny York Bridge and Sproxton Bridge, and two more between Sproxton Bridge and Helmsley. In mid-June, there were nine ' pairs ' between Helmsley and Harome Station; this might be an overestimate, as it is possible that some free-flying young might have been counted. The systematic count ended at the railway bridge over the Rye, with two pairs between it and Harome Station. A further pair was present at Nunnington. The length of a territory appeared to be determined by the extent of shingle exposed in different stretches of the river, though, for any detailed territory comparison, these should have been recorded in late April when the birds arrived.

In the length of Riccaldale included in the survey, only two pairs were seen—one just south of the ford at the foot of Cow House Bank, the other near Hasty Bank Farm. None were seen between Kirkdale Church and Sleightholmedale.

Kingfisher—(*Alcedo atthis*)

The status of this species on the Rye has been mentioned occasionally in the Y.N.U. Reports. Kingfishers were reported as scarce in 1947 (after the hard winter), and more numerous than for many years in 1949. In 1956, a nest site in Duncombe

Park was disturbed by tree-felling operations (C. D. Milne, *in litt.*). Since then there are few records—single birds on two occasions in 1961, and in late July, September and October, 1962. These records are probably of juveniles which have dispersed from nests in the lower reaches of the Rye and the Derwent. The species was totally absent from our census area in the early summer.

Sand Martin—(*Riparia riparia*)

In 1962 we found colonies in Ryedale of *c.* 30 holes just downstream from Rievaulx Bridge, *c.*15 holes near Sproxton Bridge, and 100+ holes north of Rye House Farm; also several colonies of 30-40 holes near Harome Station. No Sand Martins bred in the parts of Riccaldale and Kirkdale that we visited, though suitable sites were available.

Nuthatch —(*Sitta europaea*)

The Helmsley area and Ryedale have long been famous (in ornithological circles!) for their Nuthatches (see e.g. Nelson, 1907). In Duncombe Park, 8-10 pairs bred in the mid-1940's (Inman, 1947), and 5 or 6 in 1949. The 1962 survey is not strictly comparable with these estimates, as it covered only the valley sides, and not the whole area of woodland. We found one pair half a mile upstream from Helmsley, two more near Sproxton Bridge and a fourth near Jinny York Bridge. I can find no published record for Riccaldale, unless this area is covered by ' dales north of Helmsley ' where Nuthatches were ' well established ' in 1945. At least one pair bred in 1962, as two recently-fledged juveniles were seen below Cow House Bank. We did not record the species from Kirkdale, but the date of our visits came after the main song-period had ended, so we might easily have overlooked them. Nuthatches have been recorded there in former years; the last published record was in 1955.

Dipper—(*Cinclus cinclus*)

In 1962, we had several records from Ryedale, but failed to get an accurate picture of Dipper territories along the river. An adult was seen just upstream from Bow Bridge, north-west of Rievaulx, in June. A pair which had established itself on the stretch of river including Jinny York Bridge (a traditional nest-site) in March, was not seen again, but two young were seen on the wing, with an adult, at Helmsley in early June. No Dippers were recorded between Helmsley and Nunnington, where a pair nested successfully under the footbridge. In Riccaldale, an adult and three juveniles were seen upstream from the ford at the foot of Cow House Bank, and Kirkdale held one adult on the stretch of river below Skiplam Wood.

Warblers—(excluding Wood Warbler)

The thick mature tree canopies which flank part of the valley sides of Ryedale, Riccaldale and Kirkdale allow little or no undergrowth to develop; other stretches of the rivers are flanked by open meadowland or hillsides cleared for reforestation. The lack of low cover in all these sites tends to discourage the *non*-ground-nesting warblers from taking up territories. This helps to explain the virtual absence of Blackcaps (*Sylvia atricapilla*), Garden Warblers (*Sylvia borin*). Common (*Sylvia communis*) and Lesser Whitethroats (*Sylvia curruca*), and Chiffchaffs (*Phylloscopus collybita*) from the major valleys.

In early June 1962, we followed Elton Gill, a tributary of the Rye, for two miles north from Helmsley. A count of singing warblers in this small area of Beckdale gave a total of six Blackcaps, three Garden Warblers, at least six Common Whitethroats and one Lesser Whitethroat. By contrast, in the rest of our survey area, we saw or heard only two Blackcaps (Rievaulx Abbey and Riccal Bridge), one Garden Warbler (Rievaulx Bridge), and a few Whitethroats, singing from areas of very young conifers. Chiffchaffs were heard at Riccal Bridge and Hasty Bank Farm in Riccaldale; also in Duncombe Park (C. D. Milne, *in litt.*), where they are infrequent. A single Grasshopper Warbler (*Locustella naevia*) was heard in a young conifer plantation at Spring Bank Wood in Duncombe Park.

Wood Warbler—(*Phylloscopus sibilatrix*)

Counts were made of singing birds in the months of May and June. The resulting distribution of Wood Warblers in the census area is shown in fig. 2, which also illustrates the preference of this species to nest in groups (Svardson, 1949). Chislett (1952) has described the preferred Yorkshire habitat as deciduous woods on steeply

sloping ground. This description fits almost perfectly the distribution of territories that we found in our survey, including their absence from Riccaldale, where there is little deciduous woodland. The exception was a bird heard on June 21st in a predominantly coniferous, almost level, plantation south of Sproxton, but we have no evidence that this bird nested. The preference for hanging woodland could have its explanation in the lack of undergrowth in the woods we examined, for there would have been little cover for nests on flat ground, whereas on the steep rough hillsides there were many possible sites. In view of Yapp's (1962) comment that

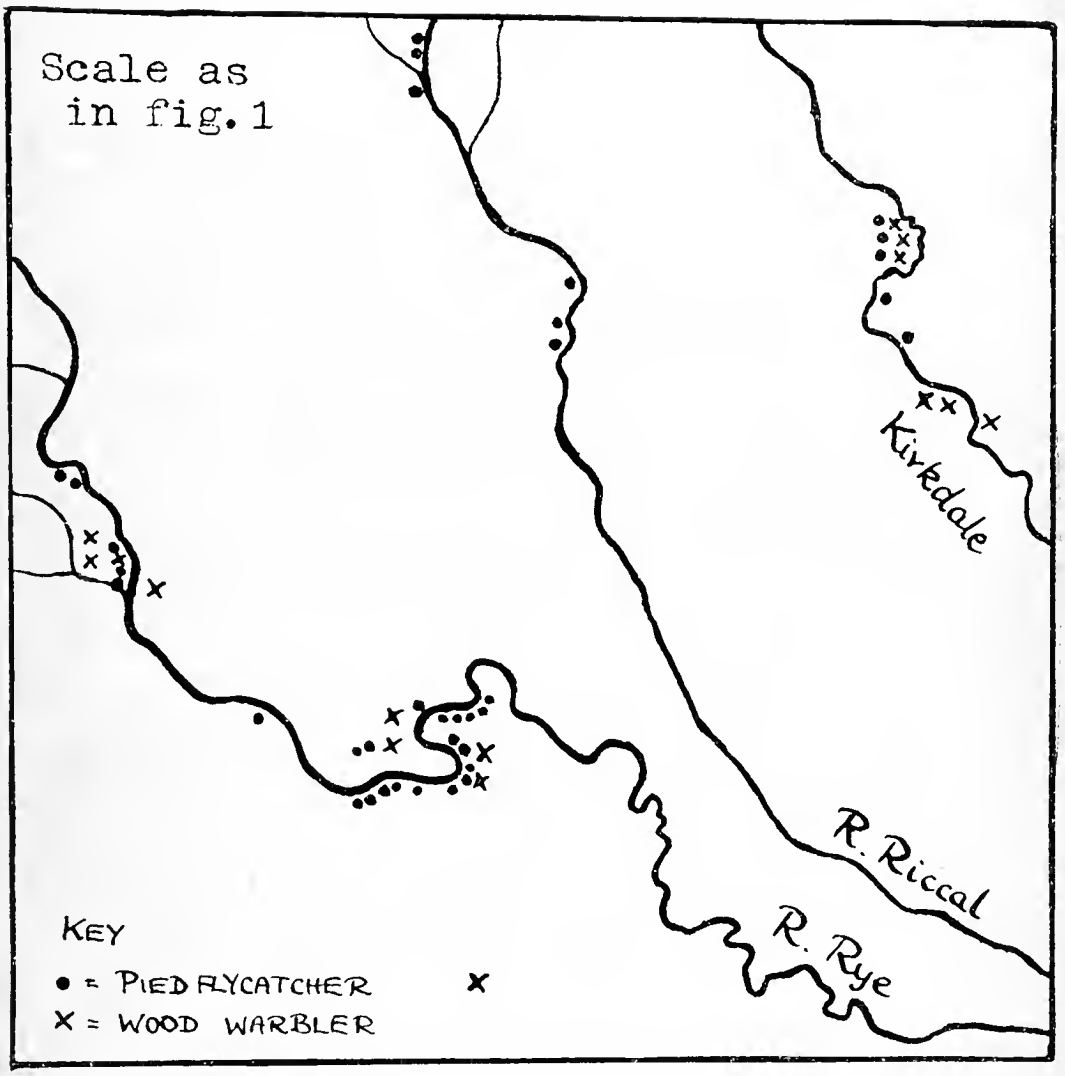

Fig. 2. Wood Warbler and Pied Flycatcher distribution in the survey area.

beechwoods are not a characteristic habitat for this species, it seems worth mention that three Wood Warblers that we saw as well as heard in Duncombe Park were all feeding in the canopy of beech trees, though these were by no means the only dominant species in the wood.

Pied Flycatcher—(*Ficedula hypoleuca*)

The 1962 distribution of Pied Flycatchers is also shown in fig. 2. Campbell (1955) has argued that the availability of nest sites is important in determining the distribution of this species in Britain. It will be noticed that in Ryedale the Pied Flycatchers occupy territories much closer to the river than do the Wood Warblers, whereas in the higher regions of Kirkdale the reverse is true. This illustrates Campbell's hypothesis, for in Ryedale most Pied Flycatcher territories centre on old riverside trees, such as alder and wych elm, which contain many possible nest holes; three nests found were all in wych elm. The upper reaches of the Riccal are also fringed by alder. However, in Kirkdale, there are many more suitable nest

sites in the very old stunted oaks and birches on the level plateau of Skiplam Wood than in the better timber growing on the steep hillsides, for there are but few decaying trees along the river banks. Yapp has drawn attention to the simultaneous occurrence of both Wood Warblers and Pied Flycatchers in many areas. He has attempted to express the degree of association of the two species in mathematical terms (1962, p. 21) as a correlation coefficient of 1.62, which, he argues, is probably large enough to indicate an attraction of one species for the other, or, more probably, similar requirements. While I agree that, throughout Britain as a whole, Wood Warblers can usually be found wherever there are Pied Flycatchers, the reverse is certainly not true. The correlation coefficient seems, therefore, to be of very limited value in any attempt to understand the distribution and habitat preferences of the two species.

Grey Wagtail—(*Motacilla cinerea*)

In 1962 we found Grey Wagtails on the Rye just upstream from Helmsley (pair with three young), at Sproxton Bridge (where six young were successfully reared) and at Rievaulx. A note on nest sites of this species in Ryedale appeared last year (Harmer, 1962), but unfortunately no indication was given of the exact localities of the nests, nor of the length of river watched. Riccaldale held one pair, a mile upstream from Riccal Bridge. We found one pair near Kirkdale Mill, and also saw a hen further downstream, almost at the point where the water disappeared underground.

Other species which occurred in the census area, but which were too numerous to be counted exactly with any degree of success, included Redstart, Willow Warbler, Spotted Flycatcher and Tree Pipit. No attempt was made to assess the populations of tits and finches, as their habitat requirements were in no way limited by the boundaries of our census area.

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The Birds of Monmouthshire, by **G. C. S. Ingram** and **H. M. Salmon** revised by **P. N. Humphreys.** Pp. 56, 8½ × 5½ including title page, index, etc. Newport Museum, 1963. 2/6.

This was first issued in 1939 and has now been revised by Humphries with the aid of Ingram and Salmon and of many others. Altogether 213 species are included—and six doubtful occurrences—in a table comparing the different categories with the figures for the adjoining counties of Glamorgan (253), Breconshire (211), and Herefordshire (225). The introduction, with map showing the rivers, deals with increases and decreases, migration (not very adequately), topography, and conservation (bird mortality due to irresponsible shooting by youths has increased). The arrangement is in Wetmore order. Eighteen selected ringed birds recovered in the county are tabulated. There appears to have been no ringing done in Monmouthshire. The bibliography is followed by an unusual page—' some useful addresses '. An excellent summary which will be useful to any who go to Monmouthshire and to students of distribution.

R.C.

THE FUNGI OF ILKLEY MOOR

PAULINE WALKER AND FREDA DRAPER

As part of the Wharfedale Naturalists' Society's Survey of Ilkley Moor, the fungi were studied and some 100 species were recorded during a period of about eighteen months, including the very wet summer and autumn of 1960, when weather conditions were very favourable for the growth of fungi. Although few of them were seen in 1961, most of the species reappeared in the autumn of 1962 and several additions were made to the list.

The slopes of the Moor face north and are chiefly covered by large areas of crowberry and bracken, broken by the rather steep ravines formed by the main streams. Heather and cottongrass are on the higher plateaux, with close-cropped turf at the foot of the ravines and along the roadside. Cow Close is the only wooded ravine and the seven plantations are all at the Ilkley end of the moor. Apart from a very few scattered hawthorns and mountain ash, Burley Moor is devoid of trees. Most of the fungi associated with trees were, therefore, found at the Ilkley end, particularly in Cow Close ravine. The contrast between the two ravines on Burley Moor was very interesting. Coldstone, from which so many of the flowering plants were recorded was rather poor in fungi, whereas Rushy ravine, so very limited in flowering plants, was much richer in its fungus flora and had many species that were recorded nowhere else on the moor.

In the following account the species have been grouped in their most typical habitats and form seven main groups. Some overlapping cannot be avoided as several species occur in different habitats.

1. In bogs and marshy ground and among *Sphagnum*.
2. On debris formed by crowberry, bilberry, heather and bracken.
3. In turf; dry turf and edges of footpaths and damp, mossy turf by streams and flushes.
4. On burnt areas.
5. On sheep dung and highly manured ground.
6. On wood; living and dead trees and stumps.
7. In association with trees in Cow Close ravine and the plantations.

In bogs:

Small bogs are scattered over the lower slopes of the moor and at the sides of the streams with extensive marshy areas higher up by the reservoirs.

Some of the species were very common in all marshy places, particularly *Hypholoma elongatum* and *Omphalia ericetorum* and some of the *Galerinas*, but *Leptoglossum lobatum*, a member of the Cantharellaceae, was found only in a small bog by Crawshaw Moss. A bright orange-red species of *Hygrophorus*, identified by Kew as ' near *H. turundus*,' occured in large numbers in a *Sphagnum* bog at Weary Hill and in a few places on Burley Moor. A more accurate naming of this little fungus should now be possible.

Leptoglossum lobatum ((Pers.) Fr.) Ricken
On mosses in bog below Crawshaw Moss; Aug., 1960.

**Hygrophorus turundus* (Fr. ex Fr.) Fr.
Large numbers in Weary Hill bog in *Sphagnum*: Oct., 1959. Weary Hill bog; Aug., 1960. Coldstone and Rushy ravines; 1960.

Mycena epipterygia (Scop. ex Fr.) S. F. Gray (det. Kew)
Near Tarn in damp grass and moss; Oct., 1959. Cow Close, Spicey Gill and near Panorama Reservoir; 1960.

M. fibula (Bull. ex Fr.) Kühn.
Damp, mossy ground, Coldstone ravine; Sept., 1960.

Omphalia ericetorum (Fr. ex Fr.) M. Lange (det. Kew)
Damp mossy ground and in *Sphagnum*, Woodhead, Spicey Gill, Cow Close and near White Wells; Oct., 1959 and May-Sept., 1960.

Nolanea staurospora Bres. (det. Kew)
Widespread in mossy turf near tracks and paths, and in bogs, Rushy Beck, Cow Close, Keighley Gate, Carr Bottom, Hangingstones, near Tarn; Oct., 1959, May-Nov., 1960.

Cortinarius sp. in subgenus *Hydrocybe*. (det. Kew)
In *Sphagnum*, among pines, Cow Close; Sept., 1960.

†*Galerina clavata* (Vel.) Kühn. (det. Kew)
In turf by spring, Rushy Beck; Nov., 1959.

G. hypnorum (Schrank. ex Fr.) Kühn. (det. Kew)
Among moss in Rushy, Coldstone and Cow Close ravines, Spicey Gill; Nov., 1959 and Sept.-Nov., 1960.
G. mycenopsis (Fr. ex Fr.) Kühn. (det. Kew)
Spicey Gill, in *Sphagnum*; Oct., 1959.
G. paludosa (Fr.) Kühn. (det. Kew)
In *Sphagnum* near Spicey and Coldstone becks, and in bog below White Wells; May-Sept., 1960.
G. unicolor (Vahl. ex. Sommerf.) Sing.
In turf by spring, Rushy beck; Nov., 1959.
**Pholiota myosotis* (Fr. ex Fr.) Sing.
Woodhead, near Tarn, Rushy and Spicey becks; Oct., 1959-60.
Hypholoma elongatum (Pers. ex Fr.) Ricken (det. Kew)
Very common on moor in damp mossy places and bogs, Rushy, Coldstone and Cow Close ravines, near Tarn, Hangingstones, etc.; Oct., 1959, May-Nov., 1960.
Geoglossum nigritum Cooke (det. Kew)
Mossy turf near Rushy ravine, and among mosses in Lanshaw bog; Oct., 1960.

On debris.

The crowberry forms a considerable amount of debris and here *Mycena vitilis* was particularly common, varying in colour from almost white to dark brown. Several other *Mycenas* and *Macrocystidia cucumis* were frequent, with *Marasmius androsaceus* on drier crowberry and bilberry debris. Among the thick deposit formed by the bracken were troops of *Collybia maculata* and *Clitocybe vibecina*. In one place by Rushy ravine the latter had an unusual and very beautiful poroid formation of the gills, so that each fungus appeared to have a treble row of milky-white frills surrounding the cap. Where the bracken grew under trees the stinkthorn, *Phallus impudicus*, occured.

Clitocybe vibecina (Fr.) Quél. (det. W.A.S.)
Rushy ravine, Nov., 1959, with unusual poroid formation of the gills. Rushy, Coldstone and near Carr Bottom, 1960, very numerous, growing in troops among bracken.
Collybia maculata (Alb. & Schw. ex Fr.) Kummer (det. Kew)
Widespread among bracken, Coldstone, Rushy and Cow Close, near Tarn, near Panorama reservoir; Sept.-Oct., 1959-60.
Macrocystidia cucumis (Pers. ex Fr.) Heim (det. Kew)
On fibrous debris, Rushy ravine; Nov., 1959. Near Carr Bottom; Oct., 1960.
Mycena galopus (Pers. ex Fr.) Kummer (det. Kew)
Rushy, Coldstone and Spicey becks, Woodhead, Carr Bottom; Oct., 1959, Sept.-Nov., 1960.
M. sanguinolenta (Alb. & Schw. ex Fr.) Kummer
On crowberry debris, Coldstone and Carr Bottom; Sept.-Oct., 1960.
M. leucogala (Cooke) Sacc.
On debris, by paths and on burnt areas, Hangingstones, Coldstone and Rushy ravines; Sept.-Nov., 1960.
M. vitilis (Fr.) Quél. (det. Kew)
On crowberry debris, Rushy ravine; Nov., 1959. Rushy, Spicey Gill and Carr Bottom; Aug.-Nov., 1960.
Marasmius androsaceus (L. ex Fr.) Fr.
On debris of crowberry, heather and bilberry, Coldstone ravine; Oct., 1960.
Gymnopilus penetrans (Fr. ex Fr.) Murr. (det. Kew)
On bilberry debris and on burnt areas, Coldstone, Rushy and Cow Close ravines, Crawshaw Moss and near Tarn; Sept., 1960.
**Conocybe rickeniana* Sing. ex P. D. Orton
On fibrous debris, Rushy beck; Nov., 1959.
Phallus impudicus (Linn.) Pers.
In bracken, edge of moor by Cow Close; Nov., 1960.
Cordyceps militaris (L. ex St. Amans) Link
Parasitic on pupating larva, among peaty debris near Rushy ravine; Nov., 1962.

In turf.

This is the largest section and includes common species which occured in large numbers, when the weather was favourable, from early summer to late autumn. Two

spring fungi were *Tricholoma gambosum* (St. George's mushroom) and *Entoloma clypeatum*. *Agaricus campestris* (Field mushroom) appeared in the roadside turf in summer. Several of the species listed for the bogs also grow in damp turf, particularly *Mycena epipterygia*, *M. fibula* and *Nolanea staurospora*.

Some of the most colourful species are in this section, *Hygrophori* in crimson, white and yellow, together with the variegated *H. psittacinus* (the Parrot). The most interesting area was a short stretch at the foot of Rushy ravine where a few yards of mossy turf were studded with an assortment of small grassland speeies. The fragile yellow and white *Clavaria inaequalis* and *C. vermicularis*, sometimes known as 'fairy elubs,' contrasted with the blaek elubs of several speeies of *Geoglossum*. In 1962, *Clavaria luteoalba*, with apricot-yellow, white-tipped fingers, was abundant here. A seareh for these speeies in similar situations in other parts of the moor was unsuecessful, exeept in the ease of *Geoglossum nigritum*, which was found in one of the Lanshaw bogs at 1,000 feet. A few species, such as *Agaricus silvaticus* (Brown Wood Mushroom), more usually assoeiated with woodlands, were found here although there are now no trees anywhere in the area.

The last speeies to be added to the moorland list was found here in November, 1962. This was the entomogenous fungus, *Cordyceps militaris*. A single, orange-red club appeared in peaty debris, parasitie on the pupating larva of a noeuid moth, probably *Triphaena pronuba* (Large Yellow Underwing), a very common speeies in this area, many larvae of whieh had already produeed *C. mititaris* in a pasture just below the moor.

Hygrophorus ceraceus (Wolf. ex Fr.) Fr.
In short grass, edge of moor, Ilkley; Aug., 1960. Rushy ravine; Oet., 1962.
H. coccineus (Sehaeff. ex Fr.) Fr.
In turf near White Wells; Coldstone ravine; Sept., 1960.
H. laetus (Pers. ex Fr.) Fr.
In mossy turf, Cow Close, Rushy Beek, Spieey beek; Sept., 1960.
**H. nigrescens* (Quél.) Quél.
In short turf, Woodhead, Keighley Gate; Aug., 1960.
H. niveus (Seop.) Fr. (det. Kew)
Short turf Rushy beek, Coldstone beck, Keighley Gate, near Panorama reservoir; Nov , 1959, Sept.-Oet., 1960.
H. pratensis (Pers. ex Fr.) Fr. (Buff Cap)
Short turf Keighley Gate, near White Wells, near Rushy beck; Sept., 1960.
H. psittacinus (Sehaeff. ex Fr.) Fr. (The Parrot)
Short turf, Burley Moor, Rushy ravine; Sept.-Nov., 1960.
†*H. subradiatus* (Schum. ex Seer.) Fr.
In turf near Keighley Gate road and Woodhead; Sept., 1960.
Tricholoma gambosum (Fr.) Kumm. (St. George's Mushroom.)
In turf by Paddling Pool, April, Coldstone ravine; May 1961.
**Lyophyllum decastes* (Fr. ex Fr.) Sing.
In turf by roadside near Rushy ravine, Oet., 1962.
Hygrophoropsis aurantiaca ((Von Wulfen) Fr.) Maire
Very common on all parts of the moor in turf; 1959. Less plentiful but in most parts; Aug.-Oet., 1960.
**Mycena aetites* (Fr.) Quél. (det. Kew)
Rushy ravine, Cow Close, near Tarn; Sept.-Oct., 1959-60.
M. epipterygia (Seop. ex Fr.) S. F. Gray (det. Kew)
Near Tarn in damp grass and moss; Oct., 1959. Cow Close, Spicey gill and near Panorama reservoir, 1960.
M. fibula (Bull. ex Fr.) Kühn.
Damp mossy ground, Coldstone ravine; Sept., 1960.
M. galopus (Pers. ex Fr.) Kummer (det. Kew)
Rushy, Coldstone and Spieey beeks, Woodhead, Carr Bottom; Oet., 1959, Sept.-Nov., 1960.
M. swartzii (Fr. ex Fr.) A. H. Smith
Mossy turf near Rushy beek; Oet., 1960.
Entoloma clypeatum (L. ex Fr.) Kummer (det. Kew)
Short turf, edge of moor; May, 1960.
Nolanea sericea (Bull. ex Merat) P. D. Orton
In turf near Panorama reservoir; Oet., 1960.

Nolanea staurospora Bres. (det. Kew)
Widespread in mossy turf near tracks and paths and in bogs, Rushy beck, Cow Close, Keighley Gate, Carr Bottom, Hangingstones, near Tarn; Oct., 1959, May-Nov., 1960.
Tubaria furfuracea (Pers. ex Fr.) Gill.
Short turf near path, Panorama reservoir; Oct., 1960.
†*Galerina clavata* (Vel.) Kühn. (det. Kew)
In turf by spring, Rushy beck; Nov., 1959.
G. unicolor (Vahl. ex Sommerf.) Sing.
In turf by spring, Rushy beck; Nov., 1959.
**Pholiota myosotis* (Fr. ex Fr.) Sing.
Woodhead, near Tarn, Rushy and Spicey becks; Oct., 1959-60.
Inocybe obscura (Pers. ex Pers.) Gill. (det. Kew)
In turf lower end Cow Close ravine; Aug., 1960.
Conocybe tenera (Schaeff. ex Fr.) Kühn.
Short turf, Rushy beck, Keighley Gate; Oct., 1959, Aug., 1960.
Agrocybe semiorbicularis (Bull. ex St. Amans) Fayod
Keighley Gate and along track to Weary Hill quarry and near Heber's Ghyll; Oct., 1959. Sept.-Oct., 1960.
Stropharia aeruginosa (Curt. ex Fr.) Quél. (Verdigris agaric)
In turf near Rushy ravine; Nov., 1959.
Hypholoma subericaeum (Fr.) Kühn. (det. Kew)
Short turf, Burley Moor; Nov., 1959. Oct., 1960.
Psilocybe semilanceata (Fr. ex Secr.) Kumm. (Liberty Cap)
Burley Moor, Cow Close, Spicey beck; July-Sept., 1960.
P. semilanceata var caerulescens (Cooke) Sacc. (det. Kew)
Woodhead and near Tarn; Oct., 1959.
Agaricus campestris (L. ex Fr.) (Field Mushroom)
In turf by roadside, Woodhead and Ilkley; July, 1960.
A. silvaticus Schaeff. ex Secr. (Brown Wood Mushroom)
On bank near Rushy ravine; Oct., 1959.
Lepiota cristata (Fr.) Kummer. (Crested Parasol)
Lower end of Cow Close in turf; July-Aug., 1960.
Clavaria inaequalis Fr.
In short turf lower end of Rushy ravine; Sept.-Oct., 1960.
C. vermicularis Fr.
Mossy turf roadside near Rushy ravine; Oct., 1960.
C. cinerea (Bull.) Fr. (det. Kew)
Mossy turf roadside near Rushy ravine; Oct., 1962.
C. corniculata Fr.
Mossy turf, roadside, Rushy ravine; Oct., 1960.
C. corniculata var pratensis (Cott. & Wakef.) (det. Kew)
Mossy turf, roadside, Rushy ravine; Oct., 1960.
C. cristata (Holmsk.) Fr. (det. Kew)
In turf under bracken, Rushy ravine; Oct., 1962.
C. luteoalba Rea (det. Kew)
Mossy turf, roadside, near Rushy ravine; Oct., 1960.
Lycoperdon perlatum Pers. (Common puffball)
Short turf on bank, Coldstone ravine and near Hangingstones; Sept., 1960.
Trichoglossum hirsutum (Pers. ex Fr.) Boud. (det. Kew)
Mossy turf, roadside, near Rushy ravine; Oct., 1960.
†*Geoglossum nigritum* Cooke (det. Kew)
Mossy turf, near Rushy ravine and among mosses in Lanshaw bog; Oct., 1960.
†*G. fallax* Durand (det. Kew)
Mossy turf, roadside, Rushy beck; Oct., 1960.
**G. glutinosum* Pers. ex Fr. (det. Kew)
Mossy turf, roadside, near Rushy ravine; Oct., 1960.
G. cookeianum Nannf. (det. Kew)
Mossy turf, near Rushy ravine; Oct., 1960.

On the burnt areas.

In the dry summer of 1959 there were exceptional numbers of moorland fires and extensive blackened areas were left. The first colonist on these areas was often

a small cup-fungus, *Anthracobia melaloma*, which appeared in large numbers at the beginning of 1960 and survived considerable frost. It reappeared in the autumn of that year in a few places but in the subsequent wetter summers with fewer fires this species has not been recorded.

Mycena leucogala (Cooke) Sacc.
On debris, by paths and on burnt areas, Hangingstones, Coldstone and Rushy ravines; Sept.-Nov., 1960.

Gymnopilus penetrans (Fr. ex Fr.) Murr. (det. Kew)
On bilberry debris and on burnt areas, Coldstone, Rushy and Cow Close ravines, Crawshaw Moss and near Tarn; Sept., 1960.

Pholiota carbonaria (Fr. ex Fr.) Sing.
On and near burnt areas; August, 1960.

**Anthracobia melaloma* (A. & S.) Boud. (det. Kew)
First colonist, in large numbers, of bare peat after burning; found in Feb., 1960, disappearing in the spring and reappearing Aug.-Oct., 1960.

On dung.

A considerable number of sheep are pastured on Ilkley moor and several of the fungi associated with dung and highly manured ground are frequent on the tracks and in grassy areas. *Stropharia semiglobata* is very common throughout the summer and autumn and three species of *Panaeolus* occur, including *P. sphinctrinus*.

**Bolbitius vitellinus* (Pers. ex Fr.) Fr.
On dung at foot of moor; July, 1960.

Stropharia semiglobata (Batsch ex Fr.) Quél.
Widespread and common on dung, Burley moor, Rushy beck; near Heber's Ghyll; Nov., 1959 and July-Nov., 1960.

Panaeolus campanulatus (Bull. ex Fr.) Quél.
On dung, Coldstone and Rushy ravines, Hangingstones and near Panorama reservoir; Sept.-Nov., 1960.

P. papilionaceus (Bull. ex Fr.) Quél.
Spicey gill; Oct., 1959. Rushy ravine; Sept., 1960.

P. sphinctrinus (Fr.) Quél. (det. Kew)
In grass by spring, Rushy ravine; Nov., 1959 and July 1960.

On wood.

There are comparatively few trees on the moor and the species in this group are confined to the plantations and Cow Close ravine and a few scattered stumps along the edge of the moor. More dead wood was caused by the gales of 1956 and 1962 which did considerable damage in the plantations. The trees are mostly pine and larch with a few hardwoods. *Polyporus betulinus* (Birch Bracket) was common on both living and dead silver birches and *Calocera viscosa* (Beautiful Horn) on logs, roots and stumps of conifers. *Ganoderma applanatum* was found on a hardwood log and several of the more common lignicolous fungi occurred wherever there was dead wood. A much less common species, *Ptychogaster albus*, grew at the foot of a pine stump, spreading over the ground and encrusting bracken stems.

Armillaria mellea (Vahl. ex Fr.) Kummer (Honey fungus)
Near Keighley Gate on dead elder, Coldstone ravine probably on roots; Sept., 1960.

Flammulina velutipes (Curt. ex Fr.) Karst. (Winter fungus)
On dead wood in Cow Close; Dec., 1960.

Mycena galericulata (Scop. ex Fr.) S. F. Gray
On old stump near Rushy ravine; Oct., 1962.

Pholiota squarrosa (Muller ex Fr.) Kummer (Scaly cap)
On old stump near Keighley Gate road; Sept., 1960.

Coprinus micaceus (Bull. ex Fr.) Fr. (Glittering Toadstool)
On grassy bank, Coldstone (on buried wood); Sept., 1960.

Pluteus cervinus (Schaeff. ex Fr.) Kummer
On old stump lower end of Cow Close; Oct., 1959.

Polyporus betulinus (Bull.) Fr. (Birch Bracket)
Parasitic on birch, Cow Close ravine and plantations; Oct., 1959 and Aug.-Nov., 1960.

Ganoderma applanatum (Pers.) Pat.
On old stump, lower end Cow Close; Oct., 1959 and Aug., 1960.

Polystictus versicolor (Linn.) Fr.
Cow Close ravine on dead wood, and near Keighley Gate road on stump; Sept., 1960.

†*Ptychogaster albus* Corda (det. Kew)
Cow Close ravine at foot of dead pine stump and encrusting bracken stems; July-Sept., 1960.

Stereum rugosum (Pers.) Fr.
On stumps near White Wells; Sept.-Nov., 1960.

Dacryomyces deliquescens (Bull.) Duby
On old wood foot of Rushy ravine; Oct., 1962.

Calocera cornea (Batsch) Fr.
On dead wood, Hangingstones plantations; Oct., 1959.

C. viscosa (Pers.) Fr. (Beautiful Horn)
On pine stump, Cow Close ravine and plantations; Aug.-Oct., 1960.

Xylaria hypoxylon Grev. (Candle-snuff fungus)
On old stump foot of Rushy ravine; Oct., 1962.

With trees.

This section includes some of the larger toadstools, *Boleti*, *Russulas* and *Amanitas*, and most of them were recorded from Cow Close ravine, which has Scots and Austrian pines, larches and silver birch. Several of the fungi were definitely associated with certain trees. *Boletus elegans* (Elegant Boletus) always grew under larches, *B. luteus* (Butter Boletus) beneath pines and the rough stalked *B. scaber* and orange-capped *B. testaceoscaber* under birches. Also under birches was *Lactarius turpis*. Beneath conifers in the plantations was *L. rufus* with large numbers of *Paxillus involutus*, *Tricholomopsis rutilans* and *Hygrophorus hypothejus* growing under pines and *Cystoderma amianthinum* among pine needles in one of the plantations. Very large specimens of *Amanita rubescens* (The Blusher) appeared on a bare clay bank in Cow Close ravine under the pines, and the cup-fungus *Peziza badia* in damp sand and shingle.

Boletus chrysenteron Bull. ex St. Amans (Red Cracked cap)
Cow close ravine; July and Aug., 1960.

B. elegans Schum. ex Fr. (Elegant Boletus)
Cow Close ravine, associated with larch; July 1960.

B. luteus L. ex Fr. (Butter Boletus)
Cow Close ravine under pines; Oct., 1959.

B. scaber (Bull, ex Fr.) (Rough-stemmed Boletus)
Cow Close ravine among bracken and bilberry, associated with birch; July-Sept., 1960.

B. subtomentosus L. ex Fr. (Felt Boletus)
In turf among pines Hangingstones plantation; Oct., 1959. Cow Close ravine; Sept., 1960.

B. testaceoscaber Secr. (Orange cap Boletus)
Cow Close ravine among bracken and bilberry associated with birch; Aug.-Sept., 1960.

Paxillus involutus (Batsch ex Fr.) Fr.
In turf among pines, Hangingstones plantation; Cow Close, above Heber's Ghyll; Oct., 1959, July-Sept., 1960.

Hygrophorus hypothejus (Fr. ex Fr.) Fr. (det. Kew)
Cow Close ravine, under pines; Nov., 1960.

Tricholoma terreum (Schaeff, ex Fr.) Kumm. (Earthy fungus)
Under pines at foot of Cow Close; Nov.-Dec., 1960.

Tricholomopsis rutilans (Schraeff. ex Fr.) Sing.
Cow Close ravine under pines; Aug., 1960.

Laccaria laccata (Scop. ex Fr.) Cooke
Cow Close ravine and near Tarn; Oct., 1959 and July-Sept., 1960.

Cystoderma amianthinum ((Scop.) Fr.) Fayod (det. Kew)
In turf near Rushy beck and Carr Bottom and among pine needles, Hangingstones plantation; Oct., 1960.

Amanita rubescens ((Pers.) Fr.) S. F. Gray (The Blusher)
Numerous, Cow Close ravine under pines; July, 1960.

A. vaginata (Bull. ex Fr.) Vitt. (Grisette)
A few under trees, Cow Close ravine; Sept., 1960.

Russula fragilis (Pers. ex Fr.) Fr.
Damp places in Cow Close ravine; Oct., 1959.
R. heterophylla (Fr.) Fr.
Grassy slope under trees, Cow Close; Aug., 1960.
R. lutea (Huds. ex Fr.) S. F. Gray
In grass among trees, Cow Close ravine; Aug., 1960.
R. ochroleuca (Pers. ex Secr.) Fr.
Under pines in Cow Close ravine and Hangingstones plantation; Aug., 1960.
R. puellaris Fr.
Cow Close ravine near water's edge and among bracken above Heber's Ghyll; July-Sept., 1960.
R. rubra ((Lamb.) Fr.) Fr. (Red Russule)
Grassy slope under trees, Cow Close; Aug., 1960.
Lactarius glyciosmus (Fr. ex Fr.) Fr.
Damp, mossy ground in Cow Close ravine and above Heber's Ghyll; Sept., 1960.
**L. helvus* (Fr.) Fr.
Mossy ground in plantation; Aug., 1960.
L. rufus (Scop. ex Fr.) Fr.
Hangingstones plantation and Cow Close ravine under pines and larches; Sept., 1960.
L. turpis (Weinm.) Fr. (Base toadstool)
Cow Close ravine and moor above Heber's Ghyll growing with birches; Oct., 1959 and Sept., 1960.
Peziza badia Pers. ex Fr. (det. Kew)
Damp sand and shingle and on bare banks, Cow Close ravine; Oct., 1959, July-Sept., 1960.
Phallus impudicus (Linn.) Pers. (Stinkhorn)
In bracken, edge of moor, Cow Close; Nov., 1960.

† Not in Mason and Grainger's *Catalogue of Yorkshire Fungi.*
* Not in Mason and Grainger's *Catalogue of Yorkshire Fungi* for V.C. 64.

Nomenclature is from the *New Check List of British Agarics and Boleti*, Supplement to *Trans. Brit. Mycol. Soc.*, June, 1960 (Cambridge University Press), and for other Basidiomycetes, from Carleton Rea's *British Basidiomycetae* (1922). Discomycetes were named by Kew. English names are from E. M. Wakefield's *Observers' Book of Common Fungi* (Warne, 1954) and Step's *Toadstools and Mushrooms of the Countryside* (1913).

Collins Guide to Mushrooms and Toadstools, by **Morten Lange** and **F. B. Hora.** Pp. 258 with 96 colour plates and 12 figures. Collins 1963. 30/-.

Good colour plates are an indispensable aid to the identification of agarics and the coloured illustrations in Jakob E. Lange's invaluable—and now prohibitively costly—*Flora Agaricina Danica*, are amongst the finest which have been published. Later the two Langes, father and son, issued a more popular illustrated guide to Danish fungi which included selected examples of the larger species from other groups of Basidiomycetes and Ascomycetes as well as agarics. The text of the present work has been adapted from this. The 377 species of agarics illustrated are all reproductions from Jakob Lange's famous book; the other 200 species are reproduced from paintings made for the later work.

Descriptions are brief with distinguishing characters italicised and with information as to habitat, duration and frequency; and—most welcome feature—descriptions and illustrations are so arranged that they consistently stand on opposite pages throughout the book. Nomenclature has been revised throughout so that names agree with recent revisions and check-lists. Keys to the genera are also provided. For those wishing to pursue identifications at a more advanced level there is a supplementary section dealing with microscopic characters and chemical aids to field recognition; spore shapes and measurements and cystidial and cap cuticle characters are also given for each species in the index.

But it is primarily for the coloured plates that this book will be valued. The quality of the illustrations has suffered little in reproduction and their high standard combined with Dr. Hora's careful editing of the text make this a first-rate guide to the identification of the larger fungi. W.A.S.

VARIABLE PLUMAGE IN REED BUNTINGS

R. F. DICKENS

In the summer of 1960, I prepared the following notes for possible inclusion in *The Naturalist*, and showed them to J. Cudworth and the late A. Hazelwood, before submitting them. The latter commented that this could not be a case of feather-wear in normal female birds because the base of the feathers is not dark enough and he suggested watching out earlier in the season to see if incubating females were in any cases abnormal in plumage. I therefore left the matter for further investigation. However in the recent circulation of records among the Reports Committee, R. Chislett has written ' Reed Buntings can vary a lot. One female I knew had a black-brown head and a dirty white collar, and until I saw her mate, I thought *she* was the male. Both fed the young.' In view of this I have thought it appropriate to publish my original notes exactly as they stood in August 1960.

On Saturday, July 23rd, 1960, Miss B. Lonsdale and Miss M. England drew the attention of G. R. Bennett and R. F. Dickens to a Reed Bunting's nest they had found on Spurn Peninsula. The nest contained four almost fully-fledged young, and while we were watching it, a parent bird arrived with food. From its blackish head, we presumed this was the male bird beginning to change into its winter plumage. But a second bird which subsequently arrived with food was undoubtedly the cock bird, having a uniform glossy black head, clear white collar and moustachial stripes, and a complete clearly-defined bib.

A closer look at the first bird showed that it had a completely black cap, a somewhat obscured superciliary stripe (a little more conspicuous on the right side), rather patchy browny-black cheeks, a distinct moustachial streak (though not as clear as in the male in good plumage), a complete, but off-white collar, and a black bib which although divided by a whitish patch under the chin, extended on the upper breast. The bib was not as clearly defined as in the cock bird.

On the following day, the birds were again watched and P. J. Mountford's attention was also drawn to them. Observers agreed that a superficial view would give the impression that the first bird we had seen was a male bird, and that even with closer study, in the field it would have passed for a male bird moulting into winter plumage.

Three possibilities suggest themselves. A typical female bird was seen about 100 yards away, and the possibility of bigamy was considered. It was soon found, however, that this female was a mated bird, also feeding a brood of young. At the nest we had under observation, no typical female was seen at all, although the two birds were watched repeatedly bringing food.

Secondly, the bird we had first seen may have been, as we originally thought, a male bird in incomplete plumage. It could possibly have been an additional male or adolescent bird assisting with the rearing of a brood of young where a female parent had been lost, or was already engaged with a subsequent nest. This we dismissed, because although there was a resemblance to a male bird in appearance, differences in behaviour made it readily distinguishable and suggested a female. There was a slight difference in call note, the bird fed the young with less hesitation, and there was a greater tendency to give distraction display.

The *Handbook of British Birds* states that abrasion gradually makes the crown of the female darker, but never uniformly black, that a narrow greyish white collar at the back of the neck appears in much worn specimens, and that the streaks on the breast and flanks become more prominent. I think therefore the correct solution is that this was a well marked female whose very worn plumage resulted in a completely black crown and the streaks on the breast merged to form a bib.

This recalled observations made by A. H. B. Lee and R.F.D. in June, 1954, when two presumed males were seen feeding young in a nest at Brotherton. My notes for that occasion were: ' Reed Bunting nest with four young, about six days old. Two birds fed these—both apparently males. One was a well-marked cock bird, the other less conspicuously marked (moulting or first-year bird ?). The black of the head was less intense, and less contrasting with the white collar than in a male in full breeding plumage. No female seen during half-hour watch.'

It may well be that close examination of pairs of Reed Buntings in late summer will show that female birds are not infrequently so like moulting male birds that the greatest caution should be exercised in sexing trapped birds, and, of course, where any doubt exists, the attempt to sex them should not be made.

YORKSHIRE NATURALISTS' UNION EXCURSIONS IN 1963

HAWES, V.C. 65, 1st-3rd June

The Whitsun meeting was well attended some thirty members taking part, a few for one day, the majority for the whole weekend. The weather throughout was excellent, although the strong wind on Sunday made observations of both birds and plants rather difficult. Three very different types of country were visited and all proved interesting, while the countryside generally was looking very beautiful. Saturday's excursion to Marsett and Raydale was in upland grassland, the only woodland had been heavily grazed and is now in a degenerate condition. There was some interesting ground near the beck, and the two ponds near Raydale house were worth the visit. Sunday was spent on the disused railway line towards Garsdale Head. Here the botanists had a good day but photographers found the strong wind difficult to contend with.

On Monday, the well-worked area of Millgill and Whitfield Gill was sheltered from the wind and provided the botanists with *Actaea spicata* (Baneberry or Herb Christopher) a plant not seen here for many years. The party only worked as far as Whitfield Gill waterfall, leaving some attractive ground to be explored at some future date. As the party returned to headquarters on Sunday, the alien Oxford Ragwort was noted in the railway sidings, a new station for this plant sometimes called ' Railway Ragwort ' from its spread throughout Britain along railway lines. It is a rare plant in Vice-County 65, although common in many parts of Yorkshire.

Fifteen affiliated societies answered the roll-call at the meeting when reports on the weekend's work were presented by the representatives of the sections present. Dr. Sledge thanked the Divisional Secretary for organising the meeting and Miss Rob proposed a vote of thanks to Mr. Kit Calvert, without whose help it would not have been possible to arrange the meeting.

ORNITHOLOGY (R. Chislett): In the upper parts of Wensleydale, 61 species were noted in several days, for which G. E. Alderson, Miss M. Andrews, R. Chislett, A. C. M. Duncan, D. Hodgson, T. Scaling, C. Simms, and Mrs. C. A. Ward were mainly responsible. Nests were found of Lapwing, Curlew, Ring-Ouzel, Meadow-Pipit, Wren and Oystercatcher. Special note was taken of comparative prevalance in view of the reductions in numbers of common species after the toll levied by the severe and protracted winter.

Lapwings were much reduced but Curlews were near to normal. The thrush tribe had evidently been hit heavily and I noted more Ring-Ouzels on the high ground than Blackbirds, Song and Mistle-Thrushes combined anywhere. Robins and Hedges-Sparrows were scarce, Willow-Warblers common wherever there were trees. The few Grey Wagtails and slightly more numerous Pied Wagtails combined were less numerous than the ubiquitous Yellow Wagtails. Chaffinches were fairly numerous, Linnets and Redpolls scarce. Wrens were only noted in one small area. Skylarks were pleasingly abundant, as were Redstarts, with only one pair of Whinchats noted. No Woodpeckers were noted. An Owl had dropped castings in a wood, the only sign of its family. A Kestrel was the only hawk.

Fishing and boating around and on Semerwater had banished the grebes. A pair of Tufted Duck were the only birds on the water and Sandpipers, formerly so common, had become scarce.

Other species noted were: Mallard, Teal, Red Grouse, Partridge and Pheasant (both scarce), Snipe, Golden Plover, Dunlin, Lesser Black-backed and Black-headed Gulls, three ' comic ' terns, Woodpigeon, Cuckoo (in several places), Swift, Swallow, House-Martin, Sand-Martin; Carrion Crow, Rook and Jackdaw, seemingly all unaffected by the severe winter; Great, Blue and Marsh-Tits (all somewhat scarce), Dipper, Wheatear, Sedge-Warbler, Garden-Warbler, Whitethroat, Wood-Warbler, Spotted Flycatcher, Pied Flycatcher (one), Hedge-Sparrow (scarce), Tree-Pipit, Starling, Goldfinch (one pair), Reed-Bunting, and House-Sparrow.

FLOWERING PLANTS (W. A. Sledge); With splendid weather prevailing throughout the week-end, the valley and fells around Hawes were looking at their best. Winter's banks of snow were replaced by drifts of Bird Cherry and Sweet Cicely, their flowers unspoilt by wind or rain. Wood Cranesbill and Wood Forget-me-not were not yet at their best but Mealy Primrose was in full flower. About 250 species were noted during the week-end; a somewhat meagre total for three full days' recording though a normal result in such upland terrain without arable cultivation, and a total which could be added to at a later date when grasses and some other plants are more in evidence.

The best plant seen on Saturday's excursion to Raydale above Marsett was *Ribes spicatum* which was in full flower by the stream above Raydale Grange. Other plants seen during the day were *Cardamine amara* (Large Bitter-Cress), *Cochlearia officinalis* ssp. *alpina* (Mountain Scurvy-Grass), pistillate plants of *Petasites hybridus* (Butterbur), *Cirsium heterophyllum* (Melancholy Thistle), *Crepis paludosa* (Marsh Hawk's-Beard), *Primula farinosa* (Mealy Primrose), *Veronica montana* (Wood Speedwell) *Salix pentandra* (Bay-leaved Willow), *S. purpurea* (Purple Willow), *S. phylicifolia* (Tea-leaved Willow), *Carex paniculata* (Tufted Sedge) and *Thelypteris oreopteris* (Mountain Fern). Mr. Chislett reported seeing *Trollius europaeus* (Globe flower) in wet pastures near Semerwater.

On Sunday the botanists worked the disused railway line from Hawes as far as Mossdale. The embankments along some sections of the line are now being used for grazing but for the most part they are undisturbed and are refuges for a varied flora. *Pyrola minor* (Lesser Wintergreen) and *Coeloglossum viride* (Frog Orchis) were seen on the embankments together with *Trollius europaeus* (Globe Flower), *Gerauium sylvaticum* (Wood Cranesbill), *Myosotis sylvatica* (Wood Forget-me-not), *Cirsium heterophyllum* (Melancholy Thistle), *Salix phylicifolia* (Tea-leaved Willow) and *Selaginella selaginoides*. *Ophioglossum vulgatum* (Adder's Tongue Fern) was seen here and on both the other excursions. The New Zealand Willow-herb, *Epilobium nerterioides* was found on the Mossdale railway bridge and at many places between Hawes station and Mossdale the alien Wood-rush *Luzula luzuloides* was plentiful.

Many species noted on the previous days' excursions were encountered again on the Monday when Mill Gill and Whitfield Gill above Askrigg were visited. The old record for *Actaea spicata* (Herb Christopher) cited in Baker's Flora was confirmed. Five plants were seen. *Stellaria nemorum* (Wood Chickweed) was abundant near the lower fall and *Saxifraga aizoides* (Yellow Mountain-Saxifrage) was seen in its well-known station at Whitfield Force, its only North Riding station other than upper Teesdale. *Asplenium viride* (Green Spleenwort) was also noted on the rocks at Whitfield Force. Mr. Chislett reported seeing *Rubus chamaemorus* (Cloudberry) on the fell top above Askrigg.

On Tuesday, I revisited the wood below Aysgill Force above Gayle to see *Ribes alpinum* (Mountain Currant) where I last saw it on the 1936 Y.N.U. Excursion. Several hours were subsequently spent on Dodd Fell searching for those elusive species recorded by Dr. Lees which were searched for in vain in 1936. The summit region has a very restricted flora typical of such peat-covered fell-summit areas. Cloudberry is there but was not flowering. On the dry mountain limestone below the grit rocks at 1,900 feet, *Draba incana* (Hoary Whitlow-Grass), *Saxifraga hypnoides* Mossy Saxifrage), *Sesleria caerulea* (Blue Sesleria) and *Adoxa moschatellina* (Moschatel) the last named in the shelter of a stone wall and at an unusually high altitude, were seen; but calcareous flushes such as would alone give ecologically suitable conditions for *Thalictrum alpinum* and *Juncus triglumis* were nowhere to be found.

Nomenclature follows Dandy's *List of British Vascular Plants*.

Bryology (Miss M. Dalby and G. A. Shaw): This report refers only to Whitfield Gill, as the writers were able to spend only the one day at the meeting.

The hepatic *Nowellia curvifolia* was conspicuous on many of the fallen tree trunks in Whitfield Gill. On the wet cliffs, *Cratoneuron commutatum* and *Eucladium verticillatum* were frequent, the former fruiting abundantly, the latter sparingly. Careful search under the overhanging rocks revealed plenty of *Seligeria trifaria* in fruit. At the head of the gill, *Preissia quadrata* was abundantly fertile.

The best find of the day, however, was a capsule on *Breutelia chrysocoma*, which moss was plentiful on the open moorland above the tree-line of the gill. This moss is very rare in fruit and I question whether it has been found in this condition in Yorkshire since the late Dr. Bedford's discovery of it near Sedbergh in 1940. For an informative account of the fruiting of *Breutelia* reference should be made to Dr. Bedford's paper in *The Naturalist*, 1940, 113. Here he suggests that *Breutelia* is so rarely found in fruit for the following reasons: (1) the remarkable segregation of the sexes; (2) the rarity of male colonies: (3) the restricted fertilisation range of the male plant. The large terminal discoid male flowers are easily seen when present (they were quite apparent at Whitfield Gill), and it is suggested that the presence of male flowers, although no certain guide, does at all events give the possibility of fruit. It must also be borne in mind that the capsule is normally hidden from view by innovations and it is usually necessary to part the stems before any fruit can be seen.

The following is a list of bryophytes definitely identified. Nomenclature follows *An Annotated List of British Mosses* (Richards & Wallace), and *An Annotated List of British Hepatics* (Jones).

Sphagnum papillosum
S. subsecundum var. *auriculatum*
S. fimbriatum
S. girgensohnii
S. plumulosum
S. capillaceum
Atrichum undulatum
Fissidens taxifolius
Ceratodon purpureus c. fr.
Seligeria trifaria c. fr.
Dichodontium pellucidum
Leucobryum glaucum
Gymnostomum aeruginosum c. fr.
G. recurvirostrum
Eucladium verticillatum c. fr.
Grimmia apocarpa c. fr.
Rhacomitrium aciculare
Pohlia albicans
Bryum pallens
B. capillare
Breutelia chrysocoma c. fr.
Fontinalis squamosa
Neckera crispa
Thamnium alopecurum
Anomodon viticulosus
Cratoneuron commutatum c. fr.
Hygrohypnum luridum
Camptothecium sericeum
Eurhynchium riparioides
Pleurozia schreberi
Plagiothecium denticulatum
Ctenidium molluscum
Rhytidiadelphus triquetrus
R. squarrosus
Conocephalum conicum
Preissia quadrata
Metzgeria furcata
Solenostoma triste
Plagiochila asplenioides
Cephalozia bicuspidata
Nowellia curvifolia
Scapania umbrosa
S. aspera
S. undulata

LITTLE WEIGHTON, V.C. 61, June 15th

Those attending this meeting enjoyed very good weather and a very pleasant countryside. Thirty-two people attended, all but five being from the Hull area: seven societies were represented. The morning was spent in Risby Park and in the afternoon the Berkhill wood area was visited. Mr. Dearing, one of the keepers on the estate, accompanied the party for part of the day and soon became a keen botanist !

Mr. R. Chislett took the chair at the meeting after tea. A vote of thanks to the landowner, Captain A. Wilson-Filmer was moved and carried, also to the head-keeper, Mr. F. Childs and to Mr. Dearing, as well as to the Divisional Secretary who had made the arrangements and to the Rev. D. C. Urquhart for his invaluable help. Five new members were elected.

FLOWERING PLANTS (E. Crackles); In the morning, the botanists visited Fishpond Wood. Species noted included: *Athyrium filix-femina* (Lady Fern), *Cardamine flexuosa* (Wood Bitter-cress), *Lysimachia nemorum* (Yellow Pimpernel), *Lycopus europaeus* (Gipsywort), *Veronica officinalis* (Common Speedwell) and *V. montana* (Wood Speedwell). *Acorus calamus* (Sweet Flag) forms extensive beds both at the lake margin and in the marsh beyond the wood.

Pedicularis sylvatica (Lousewort) is locally common on grassy slopes in a field west of the wood. *Dactylorchis maculata* ssp. *ericetorum* (Heath Spotted Orchid), a rare East Yorkshire species, occurs at the bottom of this slope, while the hybrid *D. maculata* ssp. *ericetorum* × *D. fuchsii* is found on the edge of the low-lying marsh which contains *D. fuchsii* (Common Spotted Orchid), as well as a number of marsh plants including *Equisetum palustre* (Marsh Horsetail), *Stellaria alsine* (Bog Stitch-wort) and *Carex ovalis* (Oval Sedge).

Lunch-time was spent in the vicinity of a hillside bearing a chalk flora: species occurring here include *Brachypodium pinnatum* (Heath False Brome), which is locally dominant; also *Helianthemum chamaecistus* (Common Rockrose), *Linum catharticum* (Purging Flax), *Poterium sanguisorba* (Salad-Burnet) and *Helictotrichon pubescens* (Hairy Oat).

The Berkhill wood area was visited in the afternoon. This area, although over-grown, retains many of the interesting species formerly found here. *Carex remota* (Remote Sedge) and *C. ovalis* (Oval Sedge) are frequent on the rides with *C. pallescens* (Pale Sedge) occurring more locally. On the site of felled woodland, *Calamagrostis canescens* (Purple Small Reed) has spread over a much greater area than formerly and *Milium effusum* (Wood Millet) is still frequent. Other species recorded include:

Lotus uliginosus, × *Geum intermedium* (Large Bird's-foot trefoil) with both parents, *Luzula pilosa* (Hairy Woodrush) and *L. multiflora* (Many-headed Woodrush). *Chrysosplenium oppositifolium* (Opposite-leaved Golden Saxifrage) was found on one of the wetter rides while *Paris quadrifolia* (Herb Paris) persists in one place, some twenty years after the felling of the oaks under which it formerly grew.

MAMMALS, REPTILES AND AMPHIBIA (B. S. Pashby); Several mole-hills were noted close to the Fishpond Wood area and Shrews heard in most areas. Rabbits were more common in the Risby Park pastures than at Gillywood. Plenty of Hares were seen in the surroundings fields. A Stoat was seen at Gillywood. (Field and Bank Vole skulls have been identified in Tawny Owl pellets from Risby). A Toad was seen in the small marsh at Risby.

ORNITHOLOGY (B. S. Pashby); A good attendance enabled the estate to be well covered and the intimate knowledge of the estate by keeper Dearing proved very valuable in assessing the effect on the bird life of the recent severe winter.

The Lapwing population of the surrounding fields was notably reduced and the odd breeding pair at the marsh in Risby Park was absent. One Green and one Great Spotted Woodpecker had managed to survive, but whether either had paired was not known. Three Long-tailed Tits in a party were the only ones of their kind to be seen, but three Tree-Creepers in one of the coniferous woods showed how well this species had stood the winter. The Wren population had been reduced to a pair in each of two woods at Risby and only two singing male Robins were noted. Of the Finches, Goldfinches and Bullfinches had fared badly, only two of the former and one of the latter being seen, whereas the Chaffinch, Greenfinch and Linnet were everywhere and the Lesser Redpoll, numerous at both Risby and Gillywood, delighted everyone with its spectacular song flight. Not a single Pied Wagtail nor a Goldcrest was seen, the latter being generally widely distributed here, but the Woodpigeons were in good number, as were the Thrushes. Of the summer visitors, two Cuckoos were seen, Willow Warblers and Whitethroats were common, Blackcap, Garden Warbler and Sedge Warbler in smaller numbers and the Lesser Whitethroat noted by two singing males. Turtle Doves and Spotted Flycatchers were thinly distributed; a pair of the latter had taken over the disused nest of a Willow Tit, excavated in a rotting stump two feet above ground. Corn, Yellow and Reed Buntings were recorded and of the Tits only the Blue and Coal Tits seen, Although they were not seen, a pair of Barn Owls were known to be nesting in a dead tree in the Park. A pair of Shelduck, at the edge of a small pond raised much conjecture; they flew off in a SW. direction, and had apparently been frequenting this pond for a few days. Other more common species seen in the Park and flying around brought the total number to 48.

ENTOMOLOGY (C. Hyde West); The members of the Section had an interesting day. Of the Coleoptera collected, those identified include *Harpalus ruficornis*, *Nebria ruficornis*, *Ferinia* (*Pterostichus*) *madridus*, and *Agonum dorsalis* under logs near the marsh; *Tachyporus obtusus* in Fishpond Wood, and on Hawthorn blossom *Meligethes viridescens*, *Anaspis ruficollis* and *A. maculata*, *Choleva grandicollis* and *Cantharis bicolor* were taken at Gilly Wood.

Only two butterflies were noted, *Pieris brassicae* and *P. rapae*. Other Lepidoptera included Carpet Moths in Fishpond Wood, and Brimstone Moth in Gilly Wood together with *Larentia montanata* and *L. ocellata*.

LANGDALE END, V.C. 62, June 29th

About twenty people assembled at West Ayton on a very unpromising morning. The torrential rain of the previous day and night had given way to a less violent downpour but the heavy grey sky and low cloud which threatened more rain to come when the party left their cars at Langdale End were so bleak and uninviting that prospects for the excursion were most unfavourable. The rain however, soon ceased and though it remained chilly and sunless throughout the day we were able to complete the proposed route—two and a half miles up the Derwent to High Langdale and back—in reasonable comfort. At the same time the conditions gave little inducement to those present to stray far from the path into the taller, sodden vegetation and Mr. Payne and Mr. Bramley in particular were hampered in their collecting by the wet conditions.

Eleven societies answered to the roll call following tea at headquarters. Reports

on the day's observations were made by representatives of four sections and a vote of thanks to Mr. Lawrence for his work in connection with the arrangements for the excursion was proposed by the President.

ORNITHOLOGY (R. Chislett); Those who braved the lowering clouds and early downpour in the effort to reach West Ayton by 10.15 a.m. were rewarded by a lovely valley set in wooded hills through which water surged to swell the brown, turbulent upper Derwent in spate. Observers included Mrs. J. Payne, R. Appleby, C. E. A. Burnham, C. S. Moxon, T. Scaling and myself.

Water levels had obviously been higher; slices of sandy bank had fallen in places; but Sand-Martins flew repeatedly to holes to feed young—nest holes of others may have fallen. A pair of Common Sandpipers seemed disconsolate—their eggs or young may have been washed away. From the same spit of shingle, two Green Sandpipers towered—early passage migrants—and nearby rose a Heron and a Pied Wagtail. About the woods near to the river, Marsh-Tits fed young in the branches; and Redstarts, Blackcap and Garden Warbler, Whitethroat, Willow Warbler and Chiffchaff, Tree-Pipit, and both Spotted and Pied Flycatchers were noted. Finches included Greenfinch, Linnet, Redpoll, Chaffinch and Yellow-hammer. In view of the damage done by the severe winter, it is pleasant to record at least one each of Green Woodpecker, Kingfisher, Tree-Creeper and Wren.

Other species noted were: Mallard, Pheasant, Herring Gull, Wood-Pigeon, Swift, Swallow, House-Martin, Skylark, Carrion Crow, Rook, Jackdaw, Great and Blue-Tits, Songthrush and Blackbird, Robin, Hedge Sparrow, Starling and House-Sparrow; making a total of 43 species, which would have been extended had the bracken and other herbage been less water-logged.

MAMMALS, ETC. A few Rabbits and Moles were noted, and tadpoles, but the Derwent was too turgid, rapid and deep for *pisces* to be seen.

FLOWERING PLANTS (W. A. Sledge): The route from Langdale End up the valley of the Derwent to its junction with the Lownorth Beck leads through well wooded country. Near Langdale End the vegetation shows evidence of a relatively base-rich soil with Hazel, Bird Cherry and *Rosa villosa* frequent. Higher up the valley the flora becomes progressively more acidic in character with Ling, Bilberry, Cow-wheat and Wavy Hair-grass as significant indicators of the changing soil conditions. *Platanthera chlorantha* (Greater Butterfly Orchid) and both species of Spotted Orchid (*D. fuchsii* and *D. ericetorum*) were seen in the lower part of the valley. Sedges were numerous, ten species of *Carex* including *C. laevigata* and *C. pallescens*, and *Scirpus sylvaticus* was noted in two or three places. *Potentilla anglica* (Creeping Tormentil) and *Hypericum humifusum* (Trailing St. John's-wort) were seen by the path side and *Pentaglottis sempervirens* (Evergreen Alkanet) was in the hedge at the point where the cars were left. Ferns and Horsetails seen included *Thelypteris oreopteris* (Mountain Fern), *Dryopteris borreri* (Borrer's Male Fern), *Equisetum telmateia* (Great Horsetail) and *E. silvaticum* (Wood Horsetail). Other species observed were all too characteristic of the type of ground covered to call for comment.

Nomenclature follows Dandy's *List of British Vascular Plants.*

FUNGI (W. G. Bramley); The sodden state of the vegetation was not conducive to intensive collecting with the result than many species which were no doubt present were not collected.

Some 40 species, chiefly those classed as micro fungi, were finally determined. Several agarics were seen but not collected. A feature of some old oak logs was the number of *Polyporus squamosus* on one and *Pleurotus ostreatus* covering another. A single specimen of *Polyporus sulphureus* was seen in another locality. The bright yellow galls, especially when seen from underneath, of *Taphrina populina* were abundant on a number of planted poplars and *T. tosquinetii* was also found on *Alnus*. The former is not uncommon but there are few Yorkshire records for the latter though the writer saw it in Newton Dale a week earlier.

Cyphella villosa, which to the eye seems to be a *Dasyscyphus*, also appears to be seldom collected. *Microscypha grisella* is also not often recorded but can probably be found wherever bracken is plentiful.

A full list of the species determined has been sent to the Scarborough Field

Naturalists' Society and one kept by the writer. The list includes the following species:

Synchytrium taraxaci de Bary and Woron., on *Taraxacum*
Taphrina tosquinetii (West.) Magn., on *Alnus*.
†*Leptosphaeria derasa* (B. & Br.) Ancrew, on *Senecio jacobea*
Sillia ferruginea (Pers.) Karst., on *Corylus*
Dasyscyphus acutipila (Karst.) Sacc., on *Dactylis*.
†*Dasyscyphus nudipes* (Fuckel) Sacc., on *Filipendula ulmaria*. This is very common on meadow-sweet in early summer and must have been overlooked when the *Catalogue* was compiled.
Dasyscyphus fuscescens (Pers.) Rehm, on *Quercus* leaves.
**Microscypha grisella* (Rehm) Syd., on *Pteridium* fronds.
Cyphella villosa (Pers.) Karst., on *Senecio jacobea*.
Amanita excelsa Fr.
†Not in Mason & Grainger's *Catalogue of Yorkshire Fungi*
*Not in Mason & Grainger's *Catalogue of Yorkshire Fungi* for V.C. 62.

MELTHAM, V.C. 63, July 7th

The week preceding the meeting had been very wet and rain fell as we set off in the morning. However, it soon cleared and the remainder of the day was cloudy but dry save for a heavy shower at tea time. The day was mainly spent in exploring Royd Edge Clough, which is an interesting high level valley leading up to the moors. Despite the uncertain weather and the wetness underfoot, all the members and friends who attended had an enjoyable time and much useful work was done, especially by the entomologists who were quite strongly represented.

Twenty-five members attended the meeting after tea, which was presided over by Mr. G. A. Shaw in the absence of any Vice-Presidents. Ten Affiliated Societies answered the roll-call. Reports were submitted and votes of thanks passed to the farmers on whose land we had been working, and to Mr. Crossley, the Local Secretary, who had made the arrangements.

ORNITHOLOGY (Derek Mallinson): High moorland cloughs rarely produce anything out of the ordinary and Royd Edge was no exception. As we walked steadily up the valley bottom alongside the stream Linnet and Meadow Pipit bounced about over the bracken slopes and Yellow Hammers called continually. A Tree Pipit was noted and three Mallard flew over in a southerly direction, presumably from Blackmoorfoot Reservoir two miles away to the north. The small collection of trees and bushes below the farm gave us Willow Warbler, Blackbird, Song Thrush, Blue and Great Tits, Wren, Robin and Hedge Sparrow.

We decided to strike up the south-west gulley to the quarry and moor at the 1,100-1,200 feet level in the hopes of seeing the Merlin which is recorded in this area. We were unlucky ! However, on the way up we noted two family parties of Mistle Thrush and the quarry produced one Stock Dove. This and one Wheatear was our only reward for the strenuous climb to the edge of Meltham Moor. Red Grouse, which breed on the moor, were absent and only one Curlew was heard all day.

One Wagtail was seen, the Pied, although I have recorded the Grey in this locality. Swallow, Swift and House Martin were present at the lower end of the clough and near the farm. As we returned to the main valley down the north slopes a party of fifteen Twite, a Ring Ouzel and two Whinchats were a welcome sight and, I think, made up for an otherwise uneventful day. Eleven other species were recorded including a cock Reed Bunting and two gulls, the Black-headed and the Lesser Black-back.

ENTOMOLOGY (J. H. Flint and E. W. Aubrook): The wet start to the day hampered collecting and the results were not as good as had been expected. Insects were scarce and hard to find but became more plentiful in the late afternoon just before the rainstorm stopped all activity. Among the Hemiptera *Velia caprai* Tam. was common on the beck as were *Pithanus maerkeli* (H.-S.) and *Delphacodes discolor* (Boh.) among the grasses. The striking *Cixius cunicularius* (L.) was frequent all along the valley, *Psammotettix nodosa* Rib. (new to V.C. 63) occurred on *Deschampsia* slopes and *Delphacodes forcipata* (Boh.) among grasses in a *Sphagnum* bog. Other bugs taken were *Dicyphus pallicornis* (M.-D.), *Orthotylus marginalis* Reut., and *Scolopostethus decoratus* (Hahn.).

Mr. Roy Crossley found hoverflies equally scarce but it was pleasing to see *Sericomyia sillentis* Harris on Umbelliferae. Other species taken included *Syritta pipiens* L., *Platychirus peltatus* Mg., *P. manicatus* Mg., *P. immarginatus* Zett., *Helophilus pendulus* L. and *Melanostoma mellinum* L.

Mrs. Flint reports that, with a few exceptions, sawflies also were scarce. The exceptions were *Rhogogaster viridis* (L.), *Tenthredo livida* L., and *T. balteata* Klug. which became quite common in the late afternoon. Other species taken included *Stromboceros delicatulus* (Fall.), *Strongylogaster lineata* (Christ), *Dolerus aeneus* (Hart.), and *Nematus incompletus* Forst. (new to V.C. 63).

Coleoptera in general were not numerous, and most species seen were represented by single or few examples. *Bembidion redtenbacheri* K. Dan. was common under shingle along the stream, and stone-turning produced *Amara vulgaris* L., *Nebria gyllenhali* Sch., *Corymbites aeneus* L., and *Byrrhus pilula* L. Several *Corymbites incanus* Gyll. were swept from vegetation, along with *Sericus brunneus* L. and *Athous hirtus* Hbst. *Arpedium brachypterum* Gr. occurred in liverwort near the side stream. A dead sheep provided the largest number of specimens, including *Omosita depressa* L., *O. discoidea* F., *Nitidula bipunctata* L., *Hister striola* Sahl., *Catops kirbyi* Spence, *C. tristis* Pz., and *Necrobia violacea* L.

FLOWERING PLANTS (R. Crossley): The clough proved to be interesting, if unexciting, and all the species listed on the circular were encountered. It was too early to see *Wahlenbergia hederacea* (Ivy Bellflower) in flower but the foliage was found in two localities. *Dryopteris borreri* (Golden Male Fern) was particularly conspicuous towards the head of the clough and the fine sight it presented drew admiring comments from the botanists. Not far away large areas of the steep, wet hillside were dominated by the fine sedge *Carex laevigata*, which was at its best, and amongst it were numerous plants of *Crepis paludosa* (Marsh Hawksbeard). A small quantity of *Potamogeton polygonifolius* (Bog Pondweed) was found in a boggy area and a single specimen of *Dactylorchis maculata* subsp. *fuchsii* (Spotted Orchid) was seen in one of the lower fields. A non-flowering plant of *Fragaria vesca* (Wild Strawberry) on a shale bank high up the clough was an unexpected plant in such a habitat.

Bryology (G. A. Shaw): The most interesting parts of Royd Edge Clough from a bryological point of view were the frequent flushes on the sides of the clough. These showed in most cases *Sphagnum squarrosum* and *S. recurvum*, *Dicranella squarrosa*, *Philonotis fontana*, *Bryum pseudotriquetrum*, and *Pellia epiphylla*. Other mosses seen included *Orthodontium lineare*, *Dichodontium pellucidum*, *Plagiothecium denticulatum* and *Acrocladium cuspidatum*. Mr. E. Thompson found a small amount of *Oligotrichum hercynicum*. The dominant hepatics were *Scapania undulata* in the stream and *Orthocaulis floerkii* on the sides. *Cephalozia bicuspidata* and *Calypogeia muelleriana* were also seen.

Nomenclature follows Richards and Wallace (1950), and Jones (1958).

I am indebted to Miss M. Dalby for naming the *Sphagna*.

ASKHAM BOG, V.C. 64, July 20th-21st

Hot sunny weather prevailed throughout the weekend. Numbers averaged 30-40 each day, but since many people came on only one of the days, between 50 and 60 members, representing 16 Societies, are estimated to have taken part.

Both days were spent at the Bog—including Challoner's Whin—and local members of the Yorkshire Naturalists' Trust; Miss Day, Mr. Medd, Dr. Wegener, and the Secretary, Mr. C. J. Smith, acted as guides. Their participation and help added much to the enjoyment of the meeting.

At Copmanthorpe Women's Institute an excellent tea was kindly provided by Mrs. K. G. Payne and family. Afterwards Mr. R. Chislett took the chair for the meeting when reports were given. Mr. D. F. Walker proposed and Mrs. Duncan seconded a vote of thanks to the leaders, and to Mrs. Payne and family for all their hard work. Dr. E. W. Taylor, President of the Trust, responded.

ORNITHOLOGY (R. Chislett); Among the 60 people, or thereabout, who met on one or other of the two days (and a few on both) were several ornithologists. Birds identified totalled 41, which I thought good for this area of ancient marshy woodland in late July when few birds sang; no doubt several were missed. The Moorhen was the only large water-side bird noted: no hawks or game birds, waders or gulls were seen. Wood-Pigeons were conspicuous and a few Turtle Doves. Swifts and Swallows hawked above. We were very glad to record Green Woodpecker, Tree-Creeper and

Wren. Robins were fairly numerous with both adults feeding young and other young on the wing. Five members of the crow group included a family party of Jays. Titmice included Marsh and Willow, and Long-tailed, as well as Blue and Great. Six species of Warbler did not include either Reed or Grasshopper about which there was some doubt. Tree-Pipit occurred but no Wagtail. Finches included Greenfinch, Linnet (fairly numerous), Bullfinch, Chaffinch (scarce), Yellow-hammer, Corn-Bunting, Reed-Bunting and Tree-Sparrow. A Nightingale had been heard by a number of people (including Miss Day and Dr. Taylor) on several days in June.

MAMMALS ETC. Three Weasels were watched walking in procession.

ENTOMOLOGY (excluding Coleoptera) (J. H. Flint): The entomologists were favoured by excellent conditions and, as is usual at Askham Bog at this time of the year, some species of insect abounded. In most orders, however, results were disappointing, and in particular Messrs. A. Brindle, K. G. Payne and R. Crossley all commented on the paucity of interesting flies.

Mr. Payne writes that neither Empids nor Tipulids were plentiful, it being past the season of their maximum seasonal abundance, the only exception being *Empis livida* L. which was feeding on the nectar of Marsh Thistles and other flowers. Among the other flies taken by Mr. Payne by sweeping in the wood and along the drain sides were *Tipula unca* Weid., *T. lateralis* Mg., *T. montium* Egger, *Limnophila* (*Phylidorea*) *ferruginea* (Mg.), *L.* (*P.*) *fulvonervosa* (Schumm.), *L.* (*Pilaria*) *nemoralis* (Mg.), *L.* (*P.*) *discicollis* (Mg.), *Limonia* (*Dicranomyia*) *mitis* (Mg.), *L.* (*D.*) *modesta* (F.), *Hybos femoratus* (Muell.), *Ocydromia glabricula* (Fall.), *Campsicnemus curvipes* (Fall.) and *C. scambus* (Fall.). Mr. Crossley found hoverflies extremely disappointing, attributing this to a mid-season lull, though *Syrphus glaucius* L. was common on Hogweed umbels along the main ride, and with it, though less frequent, *S. laternarius* Muell. *Rhingia campestris* Mg. was very common on the north side of the bog, where *Eristalis intricarius* (L.) also was fairly common. Other hoverflies were *Syrphus luniger* Mg., *S. ribesii* L., *S. vitripennis* Mg., *Syritta pipiens* (L.), *Leucozona lucorum* (L.), *Helophilus pendulus* (L.), *Volucella pellucens* (L.), *Eristalis arbustorum* (L.) and *E. horticola* (Deg.).

Hemiptera proved the most rewarding order as perhaps is to be expected in July. Among the Heteroptera, the extremely local *Capsus wagneri* Rem., only otherwise known in England from Wicken Fen, was plentiful and very active in the sunshine among the tall, marsh grasses and *Polymerus palustris* (Reut.), here at its northern limit in Britain and in its only known Yorkshire haunt, was common on the Marsh Bedstraw. The common *Pithanus maerkeli* (H.-S.) was plentiful and it was pleasing to see a number of the infrequent female macropters which I have not encountered before. Other Heteroptera included **Mecomma dispar* (Boh.), and *Teratocoris saundersi* D. and S. Homoptera included three very local species new to the county and one new to V.C. 64. The discovery of **Araeopus pulchellus* (Curtis) and †*Euidella speciosa* (Boh.) on *Phragmites*, and another marsh species, †*Delphacodes leptosoma* (Flor), extends the known northern limit of these species in Britain and all three were common here. Several examples of another marsh hopper, †*Mocuellus metrius* Flor, were taken but its numbers not assessed as it was not recognised in the field.

Mrs. Flint reports that there were quite a few sawflies about although, again, it was past the season of their maximum abundance. *Macrophya 12-punctata* (L.), was fairly common, and others included *Brachythops flavens* (Klug), *Selandria serva* (F.), *Dolerus aericeps* Thoms., *Rhogogaster chlorosoma* (Benson), *Tenthredo schaefferi* Klug and *T. velox* F. About half the material taken remains to be identified.

†=new to Yorkshire; *=new to V.C. 64.

COLEOPTERA (E. W. Aubrook): Many of the species listed by Fidler ('The Coleoptera of Askham Bog,' *The Naturalist*, 1949: 101-113) were taken by the coleopterists, together with a small number of additions, indicated *.

Open grass marsh: *Bembidion doris* Pz., *Cateretes bipustulatus* Pk.,* *Cyphon ochraceus* Steph., *C. coarctatus* Pk., *Strangalia maculata* Poda, *Clytus arietis* L., *Lema cyanella* L.,* *Hydrothassa marginella* L., *Psylliodes affinis* Pk., *P. picina* Moh.,* *Notaris scirpi* F., *Limnobaris t-album* L., *Rhinonchus perpendicularis* Reich., *Phytobius comari* Hbst., *Nanophyes marmoratus* Gz.

In the recently excavated pond: *Haliplus ruficollis* Deg., *Hygrotus inaequalis* F., *H. impressopunctatus* Schall., *Hydroporus dorsalis* F., *H. erythrocephalus* L., *Agabus*

nebulosus Forst., *A. sturmi* Gyll., *Ilybius fuliginosus* F., *I. quadriguttatus* Lac., *Colymbetes fuscus* L.

In the pool by the railway: *Anacaena limbata* F., *Laccobius biguttatus* Gerh.

Monotoma picipes Hbst. from litter and *Chalcoides fulvicornis* F. from willow were also additions to Fidler's list.

Coleoptera collected by J. Flint, P. W. H. Flint, K. Payne, E. W. Aubrook.

FLOWERING PLANTS (T. F. Medd); After several weeks of wet weather we were favoured with a fine and sunny weekend. The Bog was wetter than it has been in July for several years and it is hoped that it may, at last, have recovered from the dry summer of 1958. The opening page of the York and District Field Naturalists' Society Botanical Recorder's book reads, 'Askham Bog, our nearest and best hunting ground is being gradually dried up,' and that was written in the Report for the year 1894.

On the Saturday morning after a cursory examination of the edge of the golf course where *Cirsium dissectum* was flowering well, a few large specimens of *Osmunda regalis* (Royal Fern) in the Far Wood were visited. Returning to the 'tenth tee,' a few plants presumably introduced with the sand were noticed—these included *Chenopodium rubrum* and *Scleranthus annuus* (Knawel), both new to the 10 km. square.

After lunch the Middle Wood and Near Wood were examined and a fine patch of *Corydalis claviculata* (Climbing Fumitory) was noted. The pond dug out by the Nature Conservancy Corps in 1959 was inspected and seen to be carpeted with *Chara*. *Ranunculus lingua* (Greater Spearwort) was flowering nearby. The ditch to the east contained *Cladium mariscus* but there was no sign of it flowering. *Thelypteris palustris* (Marsh Fern) was common throughout the Bog but no fertile fronds were observed.

Later in the afternoon the edges of the golf course were again examined after inspecting *Carex appropinquata* near the ditch and a small party skirted the western end of the Bog.

On the Sunday morning the Far Wood was penetrated and the Royal Ferns were counted and labelled. In all fifteen were counted but there was no sign of natural regeneration.

The afternoon saw a visit to the eastern end of the Bog and the Chaloner's Whin region. The recently widened road bridge over the railway at Moor Lane gave a very different flora and the species noted include *Melilotus altissima* and *Carduus nutans*. *Ricciocarpus natans* in the pond was inspected before moving to the end of the Near Wood. Here *Potamogeton crispus* was noticed in the ditch running under the railway line and *Myosoton aquaticum* (Water Chickweed) was also observed.

A brief visit was paid to Leetham's pond to the north of the area to finish the day. It was pleasing to see a fine stand of *Ranunculus lingua* and this area would be worthy of a more intensive search.

In all, well over 200 species were recorded during the two days—more than half the total listed for the 10 km. square.

Nomenclature follows Dandy's *List of British Vascular Plants*.

The Heart of Nature, by **Jaroslav Holeček**. Pp. 160 with 165 photographic illustrations. Spring Books, Paul Hamlyn, London, 1963. 21/-.

This is essentially a picture book by an obviously keen animal and bird photographer in which 41 birds and 18 mammals of Czechoslovakia are depicted, some in series, a few in colour, together with photographs of some habitats and landscapes of the wild countryside. Among the birds shown that do not breed in Britain are: Great Bustard. Scops and Eagle Owls, Hazel Hen, Hoopoe and White Stork. Mammals include Brown Bear, Chamois, Lynx, Marten, and Wild Cat. With each photograph the author has written a pleasant paragraph, general and anecdotal, concerning the creature's habits. The quality of the photographs varies. The book does not gain by the inclusion of photographs of young birds that have left the nest too soon; and the admission that a juvenile Golden Oriole was tethered to the branch below which the nest was suspended is also a departure from the book's title, even if the adult hen did untie the knots. On the whole, I prefer the mammals to the birds, especially the attitudes and expressions of the Foxes emerging from a hillside earth, the Brown Bear, the Roaring Stag, and the Lynx photographs. Anyone familiar with the work of British zoological photographers will be interested to see some of the output of a Czechoslovakian photographer-naturalist done in the wild and reproduced on such a scale, and to read his comments. R.C.

BRYOLOGICAL MEETING, MACKERSHAW WOOD AND STUDLEY PARK, April 6th

F. E. BRANSON

Ten members were present on this occasion and the weather was very favourable. The area explored was the valley of the River Skell from Mackershaw Wood, Ripon, to Studley Park. Sixty-six species of mosses and hepatics were seen during the day, including *Orthotrichum diaphanum* epiphytic on the branches of a tree near the lake in Studley Park, *Rhynchostegiella tenella* on the limestone cliff at the side of the river and *Isopterygium depressum* on stones in several places in Mackershaw Wood. On one of the bridges in Studley Park was another species of *Orthotrichum* which was unidentifiable in its present state, although Mr. S. W. Greene, of the B.B.S., thinks it probably belongs to the *cupulatum* group. The river was very swollen owing to recent rains and this accounted for a number of aquatic species not being found. The occurrence of *Dicranum strictum* on a fallen trunk in Studley Park was most interesting and makes yet another location for this species. A number of species which I had noted on former occasions were not seen, amongst them being *Dichodontium pellucidum* var. *flavescens*, *Isothecium myurum*, *Mnium stellare*, *Brachythecium velutinum*, *Eurhynchium swartzii*, *Fissidens rufulus*, *Anomodon viticulosus*, *Camptothecium lutescens*, and *Zygodon viridissimus* var. *viridissimus*. To work an area thoroughly one must make numerous visits over a number of years. Several plants of *Gagea lutea* were on the banks of the Skell in Mackershaw, one of which was flowering. A list of the species noted is appended. Nomenclature follows Jones's *An Annotated List of British Hepatics* and Richards and Wallace's *An Annotated List of British Mosses*.

Mackershaw Wood

Pellia fabbroniana
Leiocolea turbinata
Lophocolea bidentata
L. cuspidata

Fissidens taxifolius
Dicranoweissia cirrata
Barbula unguiculata
B. revoluta
B. cylindrica
B. recurvirostris
Pohlia nutans
Bryum capillare
Mnium hornum
M. longirostrum
M. undulatum
Neckera complanata
Homalia trichomanoides
Campylium stellatum
Amblystegium serpens
Acrocladium cuspidatum
Camptothecium sericeum
Brachythecium glareosum
B. rivulare
B. rutabulum
Cirriphyllum piliferum
C. crassinervium
Eurhynchium striatum
E. praelongum
E. murale
Isopterygium depressum
Hypnum cupressiforme
H. cupressiforme var. *resupinatum*

Studley Park

Conocephalum conicum
Lunularia cruciata
Metzgeria furcata
Nardia scalaris
Plagiochila asplenioides
Lophocolea heterophylla
Porella platyphylla

Atrichum undulatum
Fissidens crassipes
F. cristatus
Dicranum strictum
D. scoparium
Campylopus flexuosus
Encalypta streptocarpa
Tortula subulata
T. muralis
Cinclidotus fontinaloides
Eucladium verticillatum
Tortella tortuosa
Weissia controversa
Grimmia apocarpa
Funaria hygrometrica
Orthodontium lineare
Bryum pallens
B. caespiticium
Orthotrichum diaphanum
Climacium dendroides
Neckera complanata
Thamnium alopecurum
Thuidium tamariscinum
Camptothecium sericeum
Eurhynchium riparioides
Rhynchostegiella tenella
Pseudoscleropodium purum
Ctenidium molluscum
Rhytidiadelphus triquetrus
R. squarrosus

ENTOMOLOGICAL SECTION AT HAGG WOOD

J. H. FLINT

About a dozen entomologists took advantage of a fine morning to visit Hagg Wood, Colton, between Tadcaster and York on May 5th, but although there was plenty of sunshine—and some cloud—a strong, cold wind restricted collecting in the main to the sheltered margin of the south-east corner of the wood. Here the first sawflies, *Dolerus aeneus* Hart. were flying and hoverflies were frequenting sallow bushes. Ten species of hoverfly were reported, conspicuous among them being the common *Eristalis intricarius* L., *E. pertinax* Scop. and *E. arbustorum* L.

Beetles were not plentiful but included *Cis alni* Gyll. and *Dryocoetinus villosus* (F.) under bark. The most profitable area for beetles was a small pond and its surrounding marsh. The water beetles included *Ochthebius minimus* (F.) and an abundance of small *Helophorus* which still remain to be identified. There were plenty of beetles in the marsh, on the mud and at the roots of the grasses, and these included five local species, *Bembidion clarki* Dawson, *B. biguttatum* (F.), *Stenolophus mixtus* (Hbst.), *Agonum gracile* (Gyll.) and *A. viduum* (Pz.). Other parts of the wood were visited but were generally unrewarding due to the retarding effect of the cold spring and the cold wind. A promising area of birch scrub yielded only common species and those but few.

A few white butterflies were seen and lepidopterists confined their attentions to the search for larvae.

The part was entertained to morning coffee and afternoon tea by Mr. and Mrs. K. G. Payne at their nearby home and this sociably completed a pleasant, if not particularly profitable, day. The members present are most grateful for this hospitality.

JOINT MEETING OF THE FLOWERING PLANT SECTION AND THE B.S.B.I. THIRSK, July 27th-28th

C. M. ROB

Although this joint meeting was poorly supported by the B.S.B.I., Y.N.U. members turned up in force. Perfect weather made conditions ideal for botany and an enjoyable week-end was spent in two very different types of country.

Saturday's excursion was to Gormire and Butterdale Pond (also known as Little Gormire) an area very well known and well worked, situated in one of the most-botanised areas in the North Riding. In spite of the many previous visits, the party added five new plants to the square, making a total of 537 species.

This outing was of interest on account of the changes which were observed in the vegetation around Gormire Lake since the Union was last there in 1946. *Pilularia globulifera*, abundant in 1946, was not seen and the area where the plant used to grow now seemed very unsuitable. What was then open water is now a jungle of *Equisetum fluviatile*, and other strongly growing plants. *Naumbergia thyrsiflora* (Tufted Loosestrife) has increased considerably and now grows nearly all round the Lake. *Potamogeton alpinus* was abundant, washed up along the north-west shore, many of the plants in fine flower, but no sign of *P. gramineus* was seen.

Sunday's excursion, the official Section meeting, was to the under-worked Bilsdale square. Only 187 species are given in the Atlas so the object of the party was to visit as many different types of habitat as possible in the time available. The party split up and managed to include moorland, woods, roadsides, wet and dry grassland, streamsides and arable fields, the final total being 278, an addition of ninety-one species. Some of the more interesting plants added included *Corydalis claviculata*, *Stellaria nemorum*, *Anagallis tenella*, *Scirpus sylvaticus* and *Equisetum sylvaticum*. As there is still much ground awaiting investigation the total will no doubt be improved on by further work especially earlier in the season for there are a number of plants missing from the square which should be there for the finding.

A Study of Reptiles and Amphibians, by **Alfred Leutscher**. Pp. 80 with 35 photographs and 104 text figures. Blandford Press. London, 1963. 10/6.

A useful introduction to the natural history of reptiles and amphibians and their keeping as pets, with many interesting notes and suggestions for further study.

E.H.

DICRANUM STRICTUM SCHLEICH. AND ITS DISTRIBUTION IN YORKSHIRE

F. E. BRANSON

In H. N. Dixon's *Student's Handbook of British Mosses* (3rd edition), this species is stated to be ' very rare ', and is given as occurring in Staffordshire, Yorkshire, Midlothian and Inverness. The *Census Catalogue of British Mosses* (1926) compiled for the British Bryological Society gives it as occurring in vice-counties 33 (East Gloucester), 37 (Worcester), 39 (Stafford), 63 (S.W. Yorks.), 64 (Mid-W. Yorks), 83 (Edinburgh), and 96 (Easterness–East Inverness with Nairn). E. C. Wallace mentioned to me in a letter in 1958 that it is found to be spreading in southern England.

The Yorkshire records of this moss were Sunnydale (Bingley), Roche Abbey, Sawley High Moor and Plumpton. All my own records are from V.C. 64. On December 15th, 1957, I came across it on a prostrate tree trunk in Gormires Wood, Hampsthwaite. During an investigation of the bryophyte flora of Birkham Wood, Knaresborough, I saw it in numerous places on fallen tree trunks and living trees. The Birkham specimens are confined to one area of the wood, the part which contains the largest trees and has not been felled. This area is more or less on the Plumpton side of the wood. Last year (1962) I had it from a fallen tree trunk in a small wood on the edge of Brimham Moor and again on some dead sticks in the grounds of Fountains Abbey. On the recent bryological meeting of the Y.N.U. it was found in Studley Park on a rotten trunk by the River Skell, about a quarter of a mile from its Fountains station. It seems to like rotten wood best of all, but can occur on living trees and walls, as I have seen at Plumpton. It is a very brittle-leaved plant and when examined through a hand-lens almost every leaf has the apex broken off. In fact, when preparing a slide for microscopical examination it is difficult to find a leaf that is complete with apex. The plant forms bright green tufts, the leaves being straight, much as in the straight-leaved form of *Dicranum scoparium*, which it somewhat resembles, not falcato-secund as in the typical form of that plant. It can be recognised in the field by its more hard and brittle ' feel ' and by the broken leaf apices.

D. strictum is sterile in Britain, but propagation is brought about by vegetative means. The broken-off apices have the power of forming new plants. The specimens which I have examined have strongly denticulate subulas, and this feature is somewhat more common than Dixon's description—' Entire or faintly denticulate at margin above '—would lead one to suppose. A specialist wrote to me that he had a specimen, determined by Persson (who has made a special study of *D. strictum*) in which the leaves are very strongly and closely denticulate in the upper portion—even more so than in my specimens. The basal cells are elongate-rectangular, four to eight times as long as broad, thin-walled and becoming shorter further up the leaf and almost quadrate near the summit. The cell-walls are not porose as in *D. scoparium*.

The distribution of this plant could be brought about by the agency of wind or by the means of birds, by transporting the broken-off apices which would grow into new plants if falling on a suitable substratum.

The present known distribution of *D. strictum* in Yorkshire is:

V.C. 63. Roche Abbey.
V.C. 64. Bingley; Brimham Moor; Sawley High Moor; Gormires Wood, Hampsthwaite; Plumpton; Birkham Wood, Knaresborough; Fountains Abbey; Studley Park.

The two sites at Bingley and Roche Abbey are evidently outliers and the headquarters seems to be the central portion of Nidderdale with a slight extension northwards.

Tasmanian Wild Life, by **Michael Sharland.** Pp. 86 with 27 photographs and one figure. Melbourne University Press, 1962. 25/-.

This collection of field studies will be of great interest to all naturalists who want first-hand information about Tasmanian mammals and snakes. The chapter on the unique Tasmanian tiger may well prove to be its history and last record. The style is most readable and I have much enjoyed sharing in the author's experiences of Tasmanian animals in their wild state. E.H.

CORRESPONDENCE

ILLEGAL TO GAS BADGERS

The Editor, *The Naturalist.*

Sir,

Since a report last November of eight badger setts being gassed on Forestry Commission ground (but not by authority or with the approval of the Commission who are friendly to badgers) many cases of badgers being gassed have come to light. What most people seem not to realise is that it is in fact **illegal** to gas badgers. A categorical statement has been received from the Ministry of Agriculture, Hook Rise, Surbiton, Surrey, under date 27th August, 1963, and is as follows:

> 'Under the Protection of Animals Acts 1911 and 1927 it is an offence to place any poison in or upon any land or building except where poison is used (subject to certain precautions being taken) for the purpose of destroying rats, mice, or other small ground vermin. It is held that this generally prohibits the use of gassing powder or the placing of cylinders or canisters giving out poison gas. Section 4 of the Prevention of Damage by Rabbits Act 1939 modified this by permitting the use of gas in rabbit holes and Section 98(3) of the Agriculture Act 1947 extended this to allow the use of gas in any hole, burrow or earth for the purpose of killing animals to which that particular section applies. (These animals are rabbits, hares and other rodents, deer, foxes and moles.) Since badgers are *not* specified the gassing of them would appear to be illegal under the provisions of the Protection of Animals Acts.'

Those who, in the press and elsewhere, have strongly protested and pleaded against the gassing of badgers on the grounds of humane treatment for an animal generally—and officially—recognised as useful and beneficial to agriculture, seem in the main to have overlooked or been unaware of the fact that those who gas the badger are clearly laying themselves open to prosecution in the Courts. It is to be hoped that readers of *The Naturalist* will do what they can to broadcast the foregoing very important fact.

It seems that the 'gassers' fall into at least three categories:

(1) The Rabbit Clearance Societies or their employees, who either deliberately or irresponsibly treat every hole as potentially holding rabbits.
(2) Gamekeepers, either on instructions or because they personally suspect the badger of taking their pheasant eggs.
(3) Hooligans who are out to kill and destroy provided they are not caught and punished.

In all these cases, and they have been now reported from almost all parts of the country, from Pembroke to the north of England, and in any others that, unfortunely, are only too likely to occur during the coming autumn, winter and spring months, it will be of the utmost value for the champions of the badger—and they are clearly many—to know that in opposing or reporting the gassings they **have the law on their side.** Incidentally the Council for Nature, 41 Queens Gate, London, S.W.7, are now actively investigating the whole position and cases should be reported to them.

Yours faithfully,
JOHN T. CAPRON,
Gillamoor, Fadmoor, York.

British Native Ponies, by **Daphne Machin Goodall.** Pp. 109 with seven colour and 87 monochrome plates. Country Life Ltd., London, 1963. 35/-.

This book records the historical ancestry of the nine native breeds of ponies of the British Isles, their characteristics and the influence upon the breed of the introduction into it of other stock as for example when the Connemara was crossed with a Welsh stallion with satisfactory results or with various other breeds with almost disastrous results. In each case the Breed Societies and their officials' addresses are given.

In a book serving such a useful purpose and so full of interesting information one wonders whether fewer illustrations but showing the individual ponies in greater detail might not have been an improvement; so often features are lost in the background, the view is too distant or too many people have been included in the photographs for one to be able to appreciate the characters of the breed.

E.H.

BOOK REVIEWS

Birdwatching, by **E. A. R. Ennion.** Pp. 138 with 8 pp. of black and white photographs and 67 line drawings. Pelham Books 16/-.

It is easy to be apprehensive at the thought of yet another introductory book on birdwatching. Much duplication of subjects is obviously unavoidable; but there is only one Dr. Ennion. In his inimitable, breezy manner he scans the world of birds and as might be expected from a practical naturalist, constructive suggestions for field-work are recommended throughout.

There is much sound advice for the beginner; indeed, his ' first hurdle ', the chapter on identification justifies the personal notebook more convincingly than any previous author. The ' second hurdle ' brings in more advanced biological details and would help a birdwatcher to graduate to ornithologist. Having ventured into development and structure, the author then examines the season-by-season life of the bird, dealing first with migration. All aspects are discussed, some a little too briefly; particularly that of the homing propensities of pigeons and shearwaters which led Dr. G. V. T. Matthews to put forward his sun-navigation theory. ' The chapter headed ' Dispersion ' which might have been more clearly called ' Distribution ' deals largely with local ecological niches and territorial behaviour, developing the latter beyond its nesting implications into post-breeding flocks and winter territories. Breeding and then communication receive full attention and in the latter it is emphasised that ' quiet contact notes and contented little sounds ' and ' suspicion calls or quarrelling ' are the most common but less well-known features of avian intercourse. Food supply and requirements are illustrated by the results of studying a ' natural ' pasture and its dependent species.

Dr. Ennion ends with a discussion of the relationships between men and birds. His condemnations are reasonable and, with some justification, he fears that worthwhile preservation is often too little and too late.

A.H.B.L.

The Mountain Gorilla, by **George B. Schaller.** Pp. xvii + 431, with 35 plates and 69 figures. University of Chicago Press, 1963. 72/-.

The detailed study of individual animal species under natural conditions is an essential part of scientific natural history and as much knowledge as possible of our nearest mammalian relatives is clearly desirable; nevertheless an attempt to study the mountain gorilla in the dense tropical forests in which it lives requires pertinacity and courage of a quite uncommon order. One is continually amazed in reading this modestly written book at how successful the author has been in establishing an almost personal contact with these very shy animals and in recording so many aspects of their daily lives. For the general reader the longer descriptions of some of these aspects—nest-making habits and vocalisation, chest beating and social behaviour in general—can be read with pleasure as continuous narratives but much of the book is designed, and admirably so, as a source book with a very detailed text conveniently divided under separate headings. The general impression given by the work as a whole, apart from admiration for the author, is of how restricted are the potentialities of gorillas and how bleak their future.

T.K.

Annelids, by **R. Phillips Dales.** Pp. 200 with 19 text figures. Hutchinson University Library, London, 1963. 15/-.

This is the latest volume in a most useful series of books of restricted length, some dealing with particular animal phyla and some with more general topics of biological interest. A certain previous knowledge of the subject must be presumed but on that basis the present book on Annelids may be welcomed as a readable and up-to-date account of the functional anatomy and physiology of the group, quite worthy of its predecessors. The first chapter is the least satisfactory in that rather much ground is covered rather briefly, so that such complicated questions as the relationships of nephridia and coelomoducts become difficult to follow, but this is succeeded by interesting accounts of feeding mechanisms and digestion, excretion and osmoregulation, nervous control and locomotion and a particularly good chapter on the blood system and respiration. The book can be strongly recommended to students of second year and later, though for their purposes the binding might have been made somewhat more robust.

T.K.

Dolphins, by **Antony Alpers.** Pp. 251 with 18 photographic plates. John Murray. 25/-.

This is a greatly enlarged edition of the author's previous and very successful *A Book of Dolphins*. The original account of dolphin association with man remains and culminates in the charming story of Opo playing with children on a New Zealand beach. The biological section has been entirely recast and although not claimed by the author to be a sicentific treatise, it incorporates the latest information and scientific studies on echo-location and hearing, learning and behaviour, locomotion and bow-riding. Written in such a way that it can be understood by any intelligent young person, it is a delightful book about fascinating animals. J.R.L.

Prehistoric Life on Earth, by **Kai Peterson.** Pp. 162 with 143 illustrations. Methuen & Co. 21/-.

While few people can now doubt the reality of evolution there will be many who are unaware of the vast range of types of plants and animals which have flourished and disappeared during the history of life on earth. As an introduction to this gallery the general principles of evolution are explained, and the development of man's ideas on this subject is examined in the light of the palaeontological and genetical evidence of the time.

Thereafter the author surveys the whole history of life from its uncertain origins to the appearance of man. The story unfolds in so many directions that unfamiliar names will surely cause some indigestion and make readers thankful for those paragraphs in which the author pauses to discuss the particular features which led to the success of one group or the decline of another. It is made clear that many questions cannot be answered, and the idea of ' straight-line ' evolution is dispelled by many examples including the development of the horse.

The many colour illustrations depicting prehistoric scenes may perhaps jar slightly, but they convey more than words can do and will surely fire a young person's imagination and desire to learn more. Apart from the excess of species the text is very clearly written, and a skilful selection of examples—' magnolia trees were still growing in Greenland '—conjures up at once the climatic conditions and changes underlying many of the faunal changes. At a time when extinctions through human activities are causing concern, this recommended book will place man in his correct perspective in the history of life on earth. J.R.L.

The Strange World of Animal Senses, by **Margaret Cosgrove.** Pp. 96, illustrated by the author. Phoenix House Ltd., 1963. 15/-.

The Senses of Animals, by **L. Harrison Matthews** and **Maxwell Knight.** Pp. 240, with 21 half-tone plates and 20 figures. Museum Press Ltd., 1963. 27/6.

These books deal with a field of biology which has not received the attention its importance merits. The subject itself is vast but each book in its own particular way provides an adequate and stimulating general introduction. All groups of animals are considered and the acuteness or otherwise of any one sense or its specialisation and functioning in relation to other senses are discussed with regard to the mode of life, whilst informative accounts are given of echo-location, migration and homing abilities, navigation and proprioceptor sense. The wealth of information presented shows how remarkable and how varied is sensory perception in animals and how different is their world from our own. Knowledge of the range of the senses and of the structure and capacity of sense organs however simple or complex is essential for biologist and field naturalist alike when seeking a proper understanding and interpretation of animal behaviour and it provides an effective counter to the all too common but erroneous assessments of animal activity by human standards.

The author of the first book, having been a medical illustrator in several hospitals, has enlivened her text with numerous distinctive sketches. Her account is a fascinating approach to the subject suitable especially for young people interested in animals in the wild or as pets.

The second book by well-known authors of established reputation, contains more detailed information and is divided into two parts; the first concerned with field observations and simple experiments and the second with the workings of the various senses, their nervous structures and physiology. Advanced students and field naturalists in particular will find much of value and interest in its admirable and authoritative presentation. E.A.S.

Flora of the British Isles, Illustrations, Part 3, Boraginaceae to Compositae. Drawings by Sybil J. Roles. Pp. vi + 116. Cambridge University Press, 1963. 32/6.

The third part of this companion volume to Clapham, Tutin and Warburg's *Flora* contains 441 drawings. As with the previous parts this one will be of value chiefly for the pictures it contains of species not illustrated elsewhere in works dealing with the British flora. Of these there are between 30 and 40 excluding 38 illustrations of Eyebrights and Hawkweeds equally divided between the two genera. It would seem ungracious to belittle these drawings without at the same time acknowledging the devotion and perseverance which Miss Roles has brought to her formidable task. Yet it cannot truthfully be said that they have much artistic merit. In terms of the pleasure given to the viewer they evoke only a lukewarm response. They lack clarity and firmness of outline and the unnatural appearance of so many is often accentuated by the crude representation of pubescence. (Compare for example the drawings of Daisy with Rough Hawkbit, or of Wood Speedwell with Borage, all of which appear to be equally hispid plants.) The dissections which accompany each figure help to offset the failure of many habit drawings to do justice to the species. But these are not always well chosen. The most reliable distinguishing character between *Myosotis scorpioides* and *M. caespitosa* is the different length of style in relation to calyx tube, but these are not shown in the illustrations. Nor is there any indication of the different stem pubescence in the Thymes though these are diagnostic for each of the three species represented. The insistence too on giving habit drawings of small, procumbent species results in confused and inelegant pictures which convey little save that the plant is small and procumbent. *Mentha requienii*, *Sibthorpia europaea* and *Galium saxatile* are examples. Bugle and *Teucrium scordium* are other unhappy examples of habit drawings.

All in all this is a disappointing work which falls well below the standard of the text which it is intended to supplement. The price also increases and the number of drawings decreases with each successive part. W.A.S.

How to Know the Wild Flowers, by **Mrs. William Starr Dana.** Pp. xlii + 418 with 174 full-page drawings. Dover Publications Inc.: Agents, Constable & Co., 1963. 15/-.

Mrs. Dana was to New England botany what Anne Pratt was to British botany. No modernisation of their works is possible without stripping away the authors' personalities. Wisely therefore this reissue of an old favourite originally published 70 years ago remains virtually unchanged, save for revised nomenclature, from that of the 1900 edition. It is essentially a period piece well laced with quotations from the poets and passages from Thorean, Emerson and others. As such it doubtless retains a place in the affections of older generations of American flower-lovers, but the idiom is too dated to appeal to the present generation of outdoor botanists, who are in any case well served with up-to-date works covering the same field at the same level. W.A.S.

Standard Encyclopedia of the World's Oceans and Islands, edited by **Anthony Huxley.** Pp. 383 with 16 colour plates, 72 monochrome photographs and 10 maps. Weindenfeld & Nicolson (Educational) Ltd., 20 New Bond Street. London, W.1, 1963. 45/-.

To everyone not devoid of imagination and a streak of romance there is a compelling interest and fascination about oceans and islands. The more distant and inaccessible they are the greater the sense of enchantment or curiosity which they evoke. This is an alluring book therefore of interest both to the enterprising holiday-maker planning a visit to the Shetlands or Sardinia, or to the more ambitious armchair traveller who can afford to set his sights higher and contemplate a voyage through the North-West Passage or a visit to the Seychelles, Tierra del Fuego or Socotra.

There are more than 300 articles—plus a gazetteer with some 2,000 entries—contributed by 31 writers, in which the features of interest and history of exploration of all the seas and islands included are described. The illustrations add still further to the attractiveness of a handsomely produced book which will appeal strongly to everyone with a taste for travel or an inquisitiveness about the world's highways and bye-ways. W.A.S.

The Chain of Life, by **L. J. Ludovici.** Pp. x and 158, with frontispiece, 20 plates, and several text figures. Phoenix, 1963. 16/- net.

Mr. Ludovici has written a book in which he traces the history of the discovery of the processes of reproduction and the fundamental principles of heredity. What can I, as a professional geneticist, say of it ? It is true, as the title implies, that Mr. Ludovici brings his material right up to-date. Thus we have an account of DNA and all that, but this fashionable topic has already been treated, more successfully I think, in several places.

There is nothing more difficult to write than good popularised science, and genetics is perhaps one of the sciences least amenable to successful treatment in this way. In order to be understood by his intended public, the author must simplify, but overmuch simplification results in the presentation of half-truths as fact, with an increasing danger that the reader will be seriously misled, not merely with regard to detail, but also his conception of basic principles. The author has to strive to achieve an exacting balance between the differing requirements of accuracy and simplicity. I do not think Mr. Ludovici has found this balance in his book. One recognises that it is not easy for a scientist to judge the real quality of a popular work in his own field because inaccuracies of all degrees will be only too obvious to him, and he may very easily be too critical of the author's work. Notwithstanding this consideration, I cannot deny that I dislike this book, and I will not recommend it. Certain of the text figures do indeed quite literally horrify me. But I realise that a great many lay readers may read this book with interest and appreciation. They are not likely to worry overmuch if they get hold of the wrong end of several sticks, since they will have no means of knowing it. J.D.L.

Pond and Stream Life of Europe in Colour. English editor, **John Clegg,** illustrations by Henning Anthon. Pp. 108 with 64 coloured plates. 1963.

Insects in Colour. English editor, **N. D. Riley,** illustrations by Edgar Hahnewald. Pp. 116 with 64 coloured plates. Blandford Press, 1963. 10/6 each.

These admirable introductions are translations respectively from the Danish and Swedish originals, and the selection of examples is so good that there are very few species figured that one would not have expected to find in a purely British production. The figures are clear, the colours generally good and the layout of the plates extremely attractive. The text is restiicted to brief notes on each species illustrated and a very short general introduction. These will make wonderful, inexpensive presents for any young person with a bent towards natural history and at the same time serve as good introductions to older people.

Pond and Stream Life is biased towards the larger organisms but does not neglect to mention the microscopic life. The selection of insects (and their larvae) is particularly good. Unfortunately, the Whirligig Beetle and an example of *Stenus* have turned out bright blue instead of black, and the Whirligig *Orectochilus* a bright light brown, and this will certainly puzzle the beginner who finds them.

Insects in Colour produces one of those problems that arise when a book such as this is translated from another language. The common bumblebee *Bombus terrestris* is correctly shown with a white tail in the queen as this is the continental form. But in Britain it would have a buff tail, hence the name which it is given, Buff-tailed Bumble Bee. This particular figure would more appropriately have been labelled *Bombus lucorum.* By an unfortunate slip, Emperor Moth is labelled ' male ' instead of female, and while the Cockchafer is correctly shown in flight with the elytra open, the Rose Chafer is shown in flight with the elytra closed, an impossibility. The only error of labelling detected in *Pond and Stream Life* is where a series of the beetle *Plateumaris sericea* (or *P. discolor*), to judge by the colour range, are named *Donacia simplex.* These are but few errors and the volumes should be deservedly popular. J.H.F.

Zulu Journal: Field Notes of a Naturalist in South Africa, by **Raymond B. Cowles.** Pp. xiv+267 with 30 plates comprising 67 photographs and one map. California University Press; Agents, Cambridge University Press. 17/-.

Reviewed in the *Naturalist* of April-June, 1960, this work was then considered excellent value at 48/- in stiff covers. In the present reprint nothing is sacrificed in quality except the covers, now paper, and the price is much lower. The matter is in no way dated and yet is sufficiently topical to make it excellent, readable, background material to anyone interested in the problems of this fascinating region or of Africa generally. G.E.P.

Mushrooms and Other Common Fungi of the San Francisco Bay Region, by **Robert T.** and **Dorothy B. Orr.** Pp. 71, with eight plates and several text figures. University of California Press: Agents, Cambridge University Press, 1962. 12/-.

Introduction to Seashore Life of the San Francisco Bay Region and the Coast of Northern California, by **Joel W. Hedgpeth.** Pp. 136 with eight plates and numerous text figures. University of California Press: Agents, Cambridge University Press, 1962. 15/-.

Early Uses of California Plants, by **Edward K. Balls.** Pp. 103, with eight plates and several text figures. University of California Press: Agents, Cambridge University Press, 1962. 14/-.

These three volumes in the *California Natural History Guide* series are well suited to the needs of amateur naturalists in Western America but have only a limited relevance for British readers. This is least evident in the book on fungi since most of the species mentioned occur also in this country. The treatment is inevitably very selective: the colour photographs of 24 species are very good. Though the marine species of animals and plants differ in the two countries British readers will note the close similarity between types of organism and ecological niches on the coasts of both countries. *Early Uses of Californian Plants* describes the extraordinarily diverse and complicated usage made of their native flora by the Californian Indians in the days before the advent of the Spaniards when these people quite literally lived off the country. The plates include photographs of plants with such exotic popular names as Our Lord's Candle and Prince's Plume.

Snakes, by **H. W. Parker.** Pp. 191 with 17 photographs and 11 text figures. Robert Hale, Ltd., London, 1963. 21/-.

The Snake, by **John Crompton.** Pp. 152 with 20 photographs. Faber & Faber, 1963. 18/-.

The Curious World of Snakes, by **Alfred Leutscher,** illustrated by Barrie Driscoll. Pp. 32 with 28 drawings. The Bodley Head, London, 1963. 13/6.

Mr. Parker's well-illustrated and informative book is a ' must ' for a zoologist wishing to be introduced to the biology of snakes, after which the reader will have been confirmed in herpetology ! The author treats snakes as animals which have become highly specialised through evolution to their particular environments stressing their anatomical adaptations but not forgetting that they live. An appendix gives a useful list of antivenins and their makers whilst a bibliography is included for further reading.

Mr. Crompton writes about snakes in a very conversational way which anyone even remotely interested in natural history must find easy to read. Much of the book is concerned with African snakes among which he lived for seven years although such outstanding species as Russell's Viper, Water Mocassin and certain rattlesnakes have also been included.

The title of the third book suggests great possibilities for capturing the interest of the children for whom it is intended, but after carefully reading it one feels that an opportunity has been lost. The text would whet the appetite but, with few exceptions, the illustrations are disappointing. Their proportions and backgrounds certainly leave one guessing as to probable size and they display little feeling for the character of the species. E.H.

Game for the Sporting Rifle, by **Henry Tegner.** Pp. 191 with 20 photographs. Herbert Jenkins, London, 1963. 25/-.

Henry Tegner is a Vice-President of the Natural History Society of Northumberland, Durham and Newcastle-on-Tyne, a member of the Mammal Society of the British Isles, and a member of the Fauna Preservation Society. In this book he informs us of the habits of the red, roe, fallow and sika deer, wild goats, hares, rabbits, squirrels, rats, corvines, grouse and wood pigeons which provide game for the sporting rifle followed by advice as to suitable and unsuitable weapons for the destruction of these creatures and notes on the preservation of trophies.

After reading this book one is well able to understand the present anxiety to conserve what is left of native faunas when, as in Africa, so many species are considered on the verge of extinction. Even so Mr. Tegner, who had ' always wanted to do a shoot in Africa,' managed to devote his five days there to bagging a sable, a koodoo and two duiker bucks. It will interest only other ' sportsmen.' E.H.

CONTRIBUTORS

CLASSIFIED INDEX

COMPILED BY G. A. SHAW

CIRCULAR NO. 611

Yorkshire Naturalists' Union.

The 585th Meeting

will be held at

HAWES

V.C. 65

from Saturday, June 1st to Monday, June 3rd, 1963

HEADQUARTERS.—Burn Brae Guest House, Hawes, Yorkshire. Telephone Hawes 234, Proprietors Mr. and Mrs. J. C. Moore. Dinner, Bed and Breakfast 19/- per day, packed lunches extra.

Other accommodation may be had at the White Hart Hotel, Telephone, Hawes 259 (about 35/- per day).

Accommodation is very limited and members are advised to book without delay There is a shortage of single rooms and members are asked to be prepared to share wherever possible.

PREVIOUS VISITS.—The Union has visited Hawes and district on several occasions, meeting at Askrigg in 1905, 1914 and 1934, Garsdale Head 1929 and 1948 and Hawes in 1884, 1919 and 1936. Reports of these meetings have appeared in *The Naturalist* and if possible should be consulted.

THE AREA.—Hawes is in the upper part of the valley of the River Ure, a little below the junctions of the two main streams, the Ure proper and Widdale Beck.

The very cold spring will have held back the vegetation of the fell tops and most of the time will be spent in the more sheltered valleys. It is proposed to visit Semerwater and Raydale on one day and the disused railway between Hawes and Garsdale

head, but the routes cannot be decided until nearer the date, Upper Wensleydale is well known for its beautiful scenery, the two waterfalls at Askrigg, Mill Gill and Whitfield Gill, which were visited on the Union's last visit in 1936, are good botanically, while Hardraw Force is a noted beauty spot.

Haytime will not have started in the dale and members are asked **not** to walk through meadows. No dogs are allowed and the usual precautions regarding game, gates and fires are to be respected.

TEA AND MEETING.—Afternoon tea with sandwiches, price 3/6, at the Burn Brae, Monday June 3rd, at 5 p.m. followed by the meeting for the presentation of reports and any other business. Members requiring tea, other than those resident at Burn Brae should order it through the Divisional Secretary not later than Saturday, 27th May.

TRANSPORT.—There is no railway service to Hawes. Members wishing to come by public transport will find the bus services fairly good but not very frequent. The United run services from Ripon and Darlington both via Leyburn, but private car is the most reliable form of transport. Members with spare seats who can offer lifts and members needing transport are asked to let the Divisional Secretary know.

MEET.—At Headquarters 10-15 a.m. each day. Burn Brae is on the Aysgarth road a little past the road to the old railway station. Details of the routes taken will be left at Headquarters to allow late comers to join up with the main party.

MAP.—The One Inch Ordance map. Wensleydale, Sheet 90.

FLOWERING PLANTS (C. M. Rob).—The very cold weather of the early part of the year may well affect the flowering plants of the area. The altitude (about 800 feet) makes Hawes later than the lower part of the dale: nevertheless botanists will find some very interesting and attractive ground.

Semerwater is becoming a favourite resort for sailing and other aquatic sports and there are serious threats to the rich wet pastures around the lake.

Globe-flower (*Trollius europaeus*) grows by Semerwater and in many damp meadows in the district, the plant being sufficiently common to have a local name 'London Bobs;' other plants of the lake side include Mealy Primrose (*Primula farinosa*) Butterwort (*Pinguicula vulgaris*), Bay-leaved and Tea-leaved Willows (*Salix pentandra* and *S. phylicifolia* the latter common throughout the district) and *Polygonum viviparum*. Yellow Water-lily (*Nuphar lutea*) is in the upper part of the River Bain (Yorkshire's shortest river) where it meanders through the grass fields before entering Bain Gill. *Equisetum variegatum* is on rocks near Bainbridge village but is very rare, *Crepis mollis* has been recorded from the west side of Bain Gill but there is no recent record of it still being there.

Caraway (*Carum carvi*) grows on rough ground near Marsett village where it has been established for many years. Rustyback Fern (*Ceterach officinarum*) is plentiful along a short bit of wall on the roadside near Cotterdale End, old records give this fern as frequent in the dale but this is the only recent record. Rock Hutchinsia (*Hornungia petraea*) is on many of the scars of the Yoredale rocks all along the dale. Parsley Fern (*Cryptogramma crispa*) is found near Buttertubs, and Green Spleenwort (*Asplenium viride*) is on many calcareous rocks throughout the district.

Other plants recorded from Hawes and the surrounding countryside include Mountain pansy (*Viola lutea*), Wood Cranesbill (*Geranium sylvaticum*), Masterwort (*Peucedanum ostruthium*) Meadow Saxifrage (*Saxifraga granulata*), Cloudberry (*Rubus chamaemorus*), *Ribes alpinum* and *R. spicatum*, Mossy Saxifrage (*Saxifraga hypnoides*) Pink Stonecrop (*Sedum villosum*) and Wood Forget-me-not (*Myosotis sylvatica*).

Wood Vetch (*Vicia sylvatica*) and Yellow Saxifrage (*Saxifraga aizoides*) have been seen in Whitfield Gill in recent years, but Baneberry (*Actaea spicata*) which was noted when the Union visited Hawes in 1884, has not been seen for many years. The alien New Zealand Willowherb (*Epilobium nerterioides*) was seen near Mill Gill in 1954.

Four 10 Km. squares meet near Hawes and care must be taken when recording plants to check the actual square. All the squares have been fairly well worked but there are a number of obvious gaps in them all, especially in 34/88 Hawes, Gale, Dodd Fell and Fleet Moss for which only 268 species are on the master card.

BRYOLOGY (G. A. Shaw).—Bryological reports on the Hawes area are given in *The Naturalist* for 1919 and 1936. By far the best list of mosses is that given by the

late Dr. T. H. B. Bedford for the 1936 meeting, where the names of 108 species are given. The hepatics of the area seem to have been somewhat neglected. Dr. Bedford remarks particularly on the abundance of *Leucodon sciuroides* on the upper Wensleydale walls. *Distichium inclinatum* occurs on tracks on Dodd Fell, and *Pseudoleskea catenulata* is fairly plentiful in the same area, whilst on the summit peat *Dicranodontium denudatum* occurs.

Other interesting species which occur include: *Polytrichum alpinum, Eucladium verticillatum, Amphidium mougeotii, Splachnum ovatum, Funaria muehlenbergii, Bartramia ithyphylla, Breutelia chrysocoma, Plagiobryum zierii, Mnium orthorrhynchum, Hookeria lucens, Thuidium philiberti, Orthothecium intricatum* and var. *abbreviatum*, and *Hypnum patientiae*. Nomenclature according to the Check List of Richards and Wallace, 1950.

ORNITHOLOGY (R. Chislett.)—Hawes is the centre of upper Wensleydale and of a great area of hills and moors, grassy and heathery, with interesting dales, both broad and narrow.

With the Widdale and Duerly becks joining the Ure at Hawes there should be no lack of streamside birds—Dipper, Sandpiper, two Gulls, two species of Wagtail and the third (Yellow) present in the fields, Sand-martin, Redshank, and Oystercatcher.

All the moorland species are in the area; two species of hawk should be noted, with the Buzzard a possibility, as is the Dunlin. Woodlands are small and somewhat scarce but each one will be well worth exploration; I have had Woodcock, Redstart, Pied Flycatcher, Spotted Flycatcher and Nuthatch reported recently, as well as Corncrake in the meadows. A good list of birds should be obtained.

ENTOMOLOGY (J. Flint).—The most profitable areas are likely to be the areas of peat on the fell tops, and the streams and their banks at lower altitudes where the bed is stony and unstable and patches of shingle occur. Many upland species could be found. Among the beetles *Feronia adstricta* (Esch.), *Patrobus assimilis* Chaud., *Arpedium brachypterum* (Grav.), *Aphodius lapponum* (Gyll.) and *Cantharis paludosa* Fall. are to be found on the fell tops, *Nebria gyllenhali* Duft., *Quedius auricomus* Kies., *Dianous coerulescens* (Gyll.) and *Stenus guynemeri* du V. among the mosses and shingle along the banks of the streams, and *Ochthebius exsculptus* Germ., *Elmis maugei* s. *megerlei* a. *aenea* Muell., and *Latelmis volckmari* (Pz.) in the streams. No bugs are recorded from Hawes, but the montane *Arctocorisa carinata* (Sahl.) has been recorded from Upper Wensleydale and the upland *Callicorixa wollastoni* (D. & S.) is likely to be found with it in the high peat pools. Mr. J. M. Brown noted some interesting bugs from nearby Semerdale which are likely to be found around Hawes. These included *Cryptostemma alienum* H.-S., found among shingle beside streams, *Salda littoralis* (L.) and *Saldula scotica* (Curt.)

Nymphs of mayflies and stoneflies are abundant in the streams. Little work appears to have been done on Hymenoptera, and only three sawflies have been reported, *Abia sericea* (L.) *Dolerus liogaster* Thoms., and *Monophadnus pallescens* Gmel. The only notable butterfly is the Brown Argus (*Aricia agestis* (Schiff.)) and as this should be in flight it would be interesting to have confirmation of its continued existence here. Since records of all insects are generally scarce from this part of the county, full lists of species taken are desirable and I should be grateful for any specimens (mounted or unmounted) for determination if localities are given.

Sectional Meetings

ENTOMOLOGICAL SECTION

Sunday, 5th May. Field Meeting, Hagg Wood, Colton, near Tadcaster. Meet at the Oasis Garage, 11.0 a.m. This is about three miles east of Tadcaster on the A.64. York bus from Leeds, 10-15 a.m. Leeds bus from York, 10-30 a.m.

Mr. and Mrs. K. G. Payne of Tadcaster invite those members attending this meeting to join them for afternoon tea.

CONCHOLOGICAL SECTION

FIELD MEETINGS

Saturday, 20th April. Grantley Hall near Ripon.
Friday, May 10th. Derwent Valley.

BRYOLOGICAL SECTION

Preliminary Notice.—A joint meeting of the Bryological and Conchological Sections will be held at Malham Tarn House, September 21st to 23rd, 1963. The party is limited to 20. Bookings should be made in good time with the Warden (P. F. Holmes, Esq., M.A.) Malham Tarn Field Centre, near Settle, Yorkshire. Bed sheets, pillow cases and towels must be brought, and a booking fee of £2 is payable in advance.

FLOWERING PLANT SECTION

A joint meeting of the Section and the Botanical Society of the British Isles will be held from Friday 26th, July to Sunday, 28th July, to work the Bilsdale 10 Km. square, 44/59 which is under recorded, and to visit other places of botanical interest on the western escarpment of the Hambleton Hills.

The party will stay in Thirsk where there are two good hotels, the Golden Fleece, a Trust house and the Three Tuns. Further details may be obtained from the Hon. Excursion Secretary, Miss C. M. Rob.

MYCOLOGICAL SECTION

Thursday to Tuesday, 2nd to 7th May. Spring Foray, Austwick. For booking details, please contact Section Secretary.

Members are reminded that Subscriptions for 1963 are now due and should be forwarded without delay to Mr. Shaw at the address given above. (Full Members, £1 Family, Associate Members, 5/-).

CIRCULAR No. 612

Yorkshire Naturalists' Union.

The 586th Meeting

WILL BE HELD AT

LITTLE WEIGHTON

V.C. 61

On SATURDAY, JUNE 15th, 1963

HEADQUARTERS.—The Black Horse Inn, Little Weighton. Afternoon Tea, 2/6. **Tea should be ordered by post-card, a week in advance.** Write to Mrs. Whittaker, The Black Horse Inn, Little Weighton, by June 8th. (Telephone: Kirkella 58172).

TRAVEL.—The Risby Estate is not easily accessible except by road. Members without cars but able to reach Beverley or Hull are asked to contact the Divisional Secretary. For details of bus services to Beverley or Hull, write to the East Yorkshire Motor Services Ltd., Anlaby Road, Hull.

MEETING PLACE AND ROUTE.—Take the Beverley-Willerby-Hessle Rd. (A 164) and turn onto the Risby-Little Weighton Road one mile north of Skidby and meet at the junction of this road with the Bentley secondary road, just west of Fishpond Wood, Risby, at 10-30 a.m.

A message concerning the proposed route will be left at the game-keeper's cottage: take farm track east of the A 164 which enters this road opposite to the road to Bentley.

MAPS.—The area is covered by the Ordnance Survey one inch Sheet No. 99: Little Weighton is on Sheet 98.

PERMISSION.—Our sincere thanks are due to Captain A. Wilson-Filmer and the head keeper, Mr. F. Childs, for permission to visit the Risby Estates.

Every care must be taken not to disturb game. No dogs are allowed and gates must not be left open. Membership cards should be carried.

THE AREA.—At the edge of the chalk wolds, the Risby Estates form an interesting area and the vegetation in the vicinity of Berkhill Wood suggests that here may be the site of an old lake.

FLOWERING PLANTS.—(E. Crackles). Species recorded for the Berkhill wood area include Slender St. John's Wort (*Hypericum pulchrum*), Yellow Pimpernel (*Lysimachia nemorum*), Marsh Cudweed (*Gnaphalium uliginosum*), Herb Paris (*Paris quadrifolia*), Greater Woodrush (*Luzula maxima*), *Carex remota, C. ovalis, C. pallescens*, Purple Smallreed (*Calamagrostis canescens*) and Wood Millet (*Milium effusum*).

For the Fishpond Wood area plants noted include: Opposite-leaved Golden Saxifrage (*Chrysosplenium oppositifolium*), Common Speedwell (*Veronica officinalis*), Wood Speedwell (*V. montana*), Sweet Flag (*Acorus calamus*) and *Carex pseudocyperus*. Dyer's Greenweed (*Genista anglica*) was recorded for a field just east of Fishpond Wood in 1957. On a grassy bank west of this wood, grows Lousewort (*Pedicularis sylvatica*) and Heath Spotted Orchid (*Dactylorchis maculata*).

ORNITHOLOGY (J. T. Lee).—The Risby Estate, roughly bounded by the villages of Walkington, Little Weighton, Skidby, Cottingham and Woodmansey, contains three woodland ' archipelagos ' surrounded by agricultural land. The series of woods running north from Risby Fishpond Wood to Walkington are interesting ornithologically and the most picturesque on the estate, as they are situated in and around shallow valleys.

The three commoner finches are present with Goldfinch, Bullfinch and particularly Lesser Redpoll well represented. Great Spotted and Green Woodpecker, Goldcrest, Stock Dove, Tree Creeper, Willow Tit, Woodcock and Tree Sparrow as well as the usual resident woodland birds, breed there annually.

It is less easy to be emphatic about the summer visitors, Chiffchaff and Tree-Pipit are occasionally noted. Lesser Whitethroat, although fairly common in 1962, cannot usually be so regarded in most years. Perhaps the Y.N.U. visit may succeed in drawing a clear picture of the status of these birds in 1963. Willow Warbler, Whitethroat, Spotted Flycatcher, Garden Warbler, Blackcap, Turtle Dove and (in dry brambly situations) Sedge Warbler are regular breeders.

Strict keepering has caused Jay, Magpie and Sparrow Hawk to become virtually unknown, though Kestrel, Little Owl and Tawny Owl are regularly seen.

In the surrounding fields Corn Bunting is common and Red-legged Partridge a possible. Between Risby and Little Weighton flocks of non-breeding Golden Plover are usually present.

(Both Lesser-Spotted Woodpecker and Hawfinch were formerly known to be in Fishpond Wood and may still be present. E.C.)

LEPIDOPTERA (D. Wade).—In the Berkhill Wood area, the only species particularly worthy of mention are the Holly Blue Butterfly and the Pale Tussock Moth. Other moths noted include the Yellow-tail and the Short-cloaked Moth. In Risby Park the larvae of both Eyed Hawk and Poplar Hawk Moths have been found.

TEA AND MEETING.—Tea at the Black Horse Inn, Little Weighton, at 4.30 p.m. will be followed by a short meeting for the presentation of reports of the day's work and the election of new members.

CIRCULAR No. 613

Yorkshire Naturalists' Union.

President:
W. A. SLEDGE, Ph.D., B.Sc.

Hon. Treasurer:
M. M. SAYER, Esq., 10 The Gardens, Heath Road, Halifax.

Assistant Hon. Treasurer and Membership Secretary:
G. A. SHAW, Esq., The Department of Botany, The University, Leeds, 2.

Hon. General Secretary:
R. S. ATKINSON, Esq., F.Z.S., 46 White Hill Avenue, Barnsley.

Divisional Secretary:
I. C. LAWRENCE, Esq., 57 The Oval, Brookfield, Middlesbrough
Telephone: Brookfield 366.

The 587th Meeting

WILL BE HELD AT

WEST AYTON for LANGDALE END

V.C. 62

On SATURDAY, JUNE 29th, 1963

HEADQUARTERS.—Beech House, West Ayton, Scarborough (Mrs. S. Porter). Tea, Ham & Tongue with Sweet, 7/6, Chicken & Ham, 8/6. Teas must be booked in advance, not later than 22nd June, direct to Mrs. Porter.

Tea will be at 5 p.m. followed by the meeting to receive reports and any other business.

MEET.—The party will meet in West Ayton Village, on the main road (A. 170) at 10-15 a.m. Those travelling by car from Whitby or Scarborough district may wish to go straight to Langdale End Village for 10-30 a.m., Those using the A. 64 York to Scarborough road should take the A.170 at Seamer for West Ayton.

TRANSPORT.—The United Service 128 (Ripon, Scarborough) passes through West Ayton. Transport from here for members without cars will be arranged, if they get in touch with the Divisional Secretary in good time. Travellers from Hull and Whitby should take the United 128 to West Ayton. The summer service is fairly frequent.

MAP.—Ordnance Survey No. 93, one inch covers the area. Grid reference for Langdale End, 44, 939913.

AREA TO BE VISITED.—Langdale End village, from where the party will operate, is situated in some very pleasant country to the north-west of Scarborough and just to the south of the North Yorkshire moors where rises the River Derwent.

The southerly course of this river towards Langdale End is through a very beautiful wooded glen, after which it winds its way into the calcareous range of hills that are so famous in this part of Yorkshire. To the west of the village there are several streams that make their way through similarly wooded glens to join the main stream. There is such a wealth of country to explore that only a small area can be covered in a single day.

[P.T.O.

ORNITHOLOGY. (R. Chislett).—The list of birds should be a long one and should include Flycatchers, Wood and other warblers, Wagtails, Sandpipers, and possibly Kingfisher. Nightjars are known in the area. Goldfinches are probable, some of the usual moorland species should be seen.

Mr. Chislett adds 'How will our resident birds have withstood the recent winter?' The effects of such a winter may be long; to record its effect is a naturalist's job. After early 1947, it was years before Song Thrushes began again to approach equality with Blackbirds and from some areas Wrens and Goldcrests disappeared.

BOTANY (C. M. Rob).—Langdale End is in one of the underworked squares, and only about 260 species have so far been mapped. The number of common plants absent from the master card is proof that there is a lot of work for the botany section to do. The Forestry Commission have taken over and planted large tracts of ground in the area, and forests of many ages may be seen. Dwarf Cornel (*Chamaepericlymenum suecicum*) has been known at Crosscliff near Bickley since 1835, the most southerly station for this plant in the British Isles. Other plants include Dame's Violet (*Hesperis matronalis*) Knotted Spurry (*Sagina nodosa*), Trailing St. John's Wort (*Hypericum humifusum*); Marsh St. John's Wort (*H. elodes*) was found in a bog near the Falcon Inn in this 10 Km. square and may occur in the more acid higher parts of the glen in open country. Musk Mallow (*Malva moschata*) is an old record requiring refinding. Small-leaved Lime (*Tilia cordata*) has been recorded from High Langdale where it is said to be rare, although planted in most places in Yorkshire. J. G. Baker considered this tree to be a native of some remote valleys in the Eastern Moorlands.

Petty Whin (*Genista anglica*) has been found near the Falcon Inn, Marsh Cinquefoil (*Potentilla palustre*) grows at Hilla Green and is no doubt elsewhere in the area, two Winter-greens (*Pyrola minor* and *P. media*) are both given for the district and although the former has not been seen for many years, the latter is known still to occur at Silpho Moor, a few miles from Langdale End. Bog Pimpernel (*Anagallis tenella*), Field Gentian (*Gentianella campestris*), Eyebright (*Euphrasia micrantha*), Wild Basil (*Clinopodium vulgare*) the hybrid Woundwort (*Stachys* × *ambigua*), Bog Myrtle (*Myrica gale*), Dwarf Willow (*Salix repens*), Aspen (*Populus tremula*), Pyramid Orchid (*Anacampti pyramidalis*) Green-winged Orchid (*Orchis morio*), Fragrant Orchis (*Gymnadenia conopsea*) both the Lesser and Greater Butterfly Orchids (*Plantanthera bifolia* and *P. chlorantha*) Bog Rush (*Schoenus nigricans*) and lesser Club Moss (*Selaginella selaginoides*) are given for the area in the Natural History of Scarborough.

Members attending the meeting would be advised to consult this work which gives a detailed account of the Natural History of the Scarborough district.

ENTOMOLOGY (J. H. Flint).—This is an exceptionally good district for insects both in the valley and on the moors above, and workers in any order should find plenty of interest. The Lepidoptera and Coleoptera have been well worked, other orders less so, but the beautiful dragonfly *Agrion virgo* (L.) is known to be common on the Derwent here and *Cordulegaster boltonii* (Don.) occurs along the moorland streams. Colonies of the wood ant *Formica lugubris* Zett. are found on Barns Cliff where *Formicoxenus nitidulus* (Nyl.) occurs in its nests.

Butterflies recorded include Large Heath, Duke of Burgundy Fritillary, Holly Blue, Green Hairstreak and Dingy Skipper; the Pearl-bordered and Small Pearl-bordered Fritillaries are usually to be found in the area. This must be the only place in Yorkshire where six species of the large ground beetles *Carabus* have been reported, *monilis* F., *arvensis* Hbst., *granulatus* L., *nemoralis* Muell., *glabratus* Pk., and *nitens* L. Other conspicuous beetles include *Nebria gyllenhali* Schoen. (and the reddish form *rufescens* Stroem on High Langdale), *Leistus spinibarbis* (F.), *Feronia lepida* Leske, *Cymindis vaporariorum* (L.) *Zylodrepa quadripunctata* (L.), *Staphylinus caesarius* Ced., *S. erythropterus* L., *Cantharis abdominalis* v. *cyanea* (Curt.), *Geotrupes vernalis* (L.), *Cetonia aurata* (L.), *Dorcus parallelopipedus* (L.), and *Clytra quadripunctata* (L.)

Entomologists should consult *The Natural History of the Scarborough District*, Vol. 2, Zoology, edited by G. B. Walsh and F. C. Rimington, 1956, for an up-to-date account which also shows where further investigation would be useful.

PREVIOUS VISITS.—Langdale End has not previously been visited by the Union although a number of places nearby figure in the list of meetings in *Naturalist* 1961, p. 170. These include Hackness and the Dales to the east, 1936; Wykeham, 1901, and 1945; and Hayburn Wyke 1891 and 1927. It is hoped on this occasion to visit those areas which appear to have been neglected in the past, probably owing to the difficulty of access.

CIRCULAR No. 614

Yorkshire Naturalists' Union.

The 588th Meeting

WILL BE HELD AT

MELTHAM

V.C. 63

On SUNDAY, JULY 7th, 1963

HEADQUARTERS.—Swan Inn, Market Place, Meltham, Nr. Huddersfield.

TRAVEL ARRANGEMENTS.—Buses leave Huddersfield bus station (Upperhead Row) for Meltham at 10-27, 11-27, 12-27 a.m. and 1-27 p.m. and thereafter operate a 20 minute service.

As public services from neighbouring towns to Huddersfield on Sunday mornings are very poor, members using their own cars who have any seats to spare are asked to contact the Local Secretary who will put them in touch with members requiring lifts.

MAP.—One inch Ordnance Survey, Sheet 102, Huddersfield.

MEETING PLACE.—Headquarters at 11.0 a.m. For members unable to meet at that time, a second party will assemble at 12-o'clock and will then be taken to join the main party.

THE AREA.—Meltham lies towards the head of a pleasant valley about six miles south-west of Huddersfield. It is situated very close to some fine moorland country and the rugged slopes of West Nab rising to 1,640 ft. dominate the district. There are many interesting areas near at hand, but it is proposed to pay special attention to Royd Edge Clough, the entrance to which is only ten minutes walk from Headquarters. Royd Edge Clough is a good example of a high level, steep-sided valley on the Millstone Grits, with a variety of habitats which should be of interest to all sections. There are vast bracken covered slopes and rocky outcrops, marshy fields, and many small *Sphagnum* bogs, a small area of deciduous woodland, a fine moorland

stream and, beyond the head of the clough, a massive area of bracken and rough grassland rising to the peat covered summit plateau.

Please Note: The rights of the farmers (on whose land we shall be working) must be respected, no fences or walls damaged, **No Fires,** and **No Dogs.** (If any dogs do appear on these sheep moors they are likely to be shot on sight).

ORNITHOLOGY (T. D. Bisiker).—The area is one of contrasts. In and around the built-up area the usual common garden birds will be seen. From the built-up area the ground rises to *c.* 1,600 ft. The best and most interesting approach would be by Royd Edge Clough. In the clough and in neighbouring fields the following birds may be seen—Whinchat, Linnet, Reed-Bunting, Willow-Warbler, Robin, Dunnock, Wren, Redstart, Wheatear, Blackbird, Ring-Ousel, Song Thrush, Pied Wagtail, Swallow, Swift, Cuckoo, Magpie, Carrion Crow, Rook, Kestrel, Little Owl and Moorhen. The more energetic ones who scale the heights should see Skylark, Meadow-Pipit, Twite, Peewit, Curlew, Golden Plover, Grouse and possibly Dunlin in the wetter parts, Merlin and Short-eared Owl. Gulls should also be seen.

FLOWERING PLANTS. (R. Crossley).—The most interesting plant of Royd Edge Clough is undoubtedly *Wahlenbergia hederacea* (Ivy Bellflower) which was first discovered in 1960. This is one of the few localities for the species in V.C. 63 and its discovery has stimulated interest in the vegetation of the clough amongst local botanists. The typical plants include many clough and moorland species such as *Vaccinium oxycoccos* (Cranberry), *Myosotis secunda* (Water Forget-me-not) and *Narthecium ossifragum* (Bog Asphodel), and on the moor beyond *Dactylorchis maculata* subsp. *ericetorum* (Heath spotted Orchid). There is a pleasing variety of sedges including *Carex laevigata, C. binervis, C. echinata* and *C. pulicaris.* Amongst the ferns are many fine specimens of *Dryopteris borreri* (Golden male fern), and in 1962 a small amount of *Thelypteris phegopteris* (Beech fern) was discovered. As the area to be explored lies within the recording district of Huddersfield plant mapping scheme organised jointly by the Tolson Memorial Museum and botanists of the two local societies, plant lists, including common species, will be welcomed after the meeting.

ENTOMOLOGY (E. W. Aubrook, F.R.E.S.).—The area of the excursion was a favourite collecting ground of the late G. T. Porritt; the following moths, represented from the Meltham and Royd Edge in his collection at the Tolson Memorial Museum, and associated with ling or bilberry, may still be expected to occur and to be observed, either in flight or at rest, during daylight hours; *Anarta myrtilli* (Beautiful Yellow Underwing), *Phragmatobia fuliginosa* (Ruby Tiger), *Sterrha inornata* (Plain Wave), *Pylarge fumata* (Smoky Wave), *Eupithecia castigata* (Grey Pug), *E. nanata* (Narrow-winged Pug), *Hydriomena furcata* (July Highflyer), *Dysstroma citrata* (Dark Marbled Carpet), *Entephora caesiata* (Grey Scalloped Bar), *Lasiocampa quercus* (Northern Eggar). The var. *confinis* of *Orygia antiqua* (Vapourer) has been bred from larvae taken in the district.

Of the Coleoptera, the splendid *Carabus nitens* has been recorded and itself would make the excursion worthwhile to an entomologist. *Bembidion redtenbacheri* occurs along the stream sides, and the spotted rove-beetle, *Dianous caerulescens,* may be found in wet moss. The click-beetles *Corymbites cupreus* and *C. pectinicornis* should be seen on the moor, and *Aphodius lapponum* and *A. tenellus* should be found in sheep-droppings. The larva-feeding Silphid, *Xylodrepa quadripunctata* has been taken in the area, and the small bloody-nosed beetle, *Timarcha goettingensis,* occurs in association with bilberry. The metallic *Plateumaris discolor* may be found in the vicinity of *Eriophorum* or *Sphagnum.*

The district has not been worked systematically for the smaller Coleoptera, and records of these would be of value.

As the distribution of reptiles and amphibia in V.C. 63 is insufficiently known, any records in this section will be appreciated.

TEA AND MEETING.—Tea at 4.30 p.m. Meat and Salad Tea 5/- (Sandwiches can also be provided). Will members requiring the set tea or sandwiches please notify the Local Secretary (tel. Milnsbridge 2373) not later than July 2nd, 1963. Cups of tea will be available for those who take their own food. After tea there will be a short meeting for reports of the day's work, and for the election of new members.

CIRCULAR No. 615

Yorkshire Naturalists' Union.

The 589th Meeting

WILL BE HELD AT

YORK

for ASKHAM BOG

V.C. 64

From Saturday, July 20th to Sunday, July 21st, 1963

MEETING PLACE.—At the entrance to the Bog at 10-30 a.m. each day. Take packed lunch. Messages will be left in the shelter at the entrance. Askham Bog is to the right of the York-Tadcaster-Leeds road, A 64, at the start of the dual carriageway. There is room to park cars. There is a 20 minute bus service in each direction.

HOTELS IN YORK.—Abbey Park Hotel, The Mount (B. & B.) 32/6 to 37/6; Chase Hotel, Dringhouses (B. &. B. 35/- to 40/-): Elmbank Hotel, The Mount (B. & B. 27/6); Young's Hotel, 25 High Petergate (B. & B. 25/- to 30/-); St. Mary's Hotel, St. Mary's, Bootham (B. & B. 22/6 to 29/6).

A full list of accommodation may be obtained from the City of York Information Service, Central Library, Museum Street, York.

[P.T.O.

On **Saturday evening** members staying in York may like to have dinner together at Young's Hotel. This should be ordered direct.

TEA AND MEETING.—Tea will be provided on Sunday at 4 p.m. at the **Institute Hall, Copmanthorpe** at 3/6 each. This must be ordered through the Local Secretary (see above) not later than Saturday, July 13th. Lifts will be arranged for members without cars.

SURVEY OF THE BOG.—Both days will be spent at the Bog so that a good start may be made on an up-to-date survey.

ASKHAM BOG

Askham Bog lies in the south-west corner of an area of flat land between ridges formed by glacial deposits. It is about a mile and quarter in length, and nowhere more than a quarter of a mile wide, and is valuable as a relic of the former ' fen ' vegetation which covered large areas of Yorkshire after glaciation.

It has developed from open water, through reed swamp and willow carr to swamp woodland and there are small areas showing the early stages of Sphagnum Bog.

The Bog is surrounded by ditches on all sides and three ditches run through the bog connecting drainage channels, thus dividing the bog into four areas. A raised causeway forms a further dividing line and gives two sections to the west known as Far Wood and Gilson's Bog and two to the east known as Middle Wood and Near Wood.

There is now little open water apart from the ditches and a small pond dug out by the Nature Consevancy Corps in 1959. There are small patches of reed swamp and the swamp woodland is well represented in the western end of the bog.

The p.H. value of water and soil samples from different areas varies from about 5·5 to 7·5, the outer ditches tending to be more alkaline.

The aim of the Yorkshire Naturalists Trust is to maintain the Bog in its present condition and to allow it to develop as naturally as possible by trying to maintain the water level which has a tendency to become lower due to agricultural drainage and adjacent developments.

The Trust look forward to the visit of the Y.N.U. and hope that as a result of their visit there will be an up-to-date comprehensive record of the findings in the various sections.

FLOWERING PLANTS (Dr. W. A. Sledge).—The ditches surrounding the wooded part of the Bog and the adjacent marshy ground are rich in species, the following being amongst the more notable: *Thalictrum flavum, Ranunculus lingua, Cardamine amara, Viola canina, Stellaria palustris, Rhamnus catharticus, Frangula alnus, Potentilla palustris, Myriophyllum alternifolium, Parnassia palustris, Apium inundatum, Oenanthe fistulosa, O. aquatica, Menyanthes trifoliata, Pedicularis palustris, Mentha sativa, Myosotis secunda, Hottonia palustris, Lysimachia vulgaris, Anagallis tenella, Samolus valerandi, Rumex hydrolapathum, Polygonum mite, Myrica gale, Salix repens, Orchis incarnata, Sparganium minimum, Lemma polyrhiza, L. trisulca, Iris pseudacorus, Hydrocharis morsus-ranae, Juncus subnodulosus, Carex acutiformis, C. riparia, C. vesicaria, C. hostiana, C. pallescens, C. acuta, C. elata, C. appropinquata, C. disticha* and *Calamagrostis canescens*..

The wooded part of the Bog consists of fen woodland with Birch, Alder, Oak, Willow (*S. cinerea*), Alder Buckthorn (*Frangula alnus*) and brambles (*Rubus suberectus* and *R. plicatus*). Many of the species listed above also occur within the bog, especially in more open parts, but the ground vegetation is here primarily of reeds, especially *Phragmites* and *Calamagrostis canescens*, and sedges. *Cladium mariscus* is plentiful in the Near Wood and the rare *Carex elongata* occurs in Far Wood where *Dryopteris spinulosa* and *Thelypteris palustris* are widespread and where *Dryopteris cristata* formerly grew. Several fine plants of Royal Fern, *Osmunda*, still survive. The Bog is particularly rich in Cyperaceae, at least twenty species of *Carex* growing there. *C. lasiocarpa* formerly grew in the site of an open pool at the York end of the Bog, but this region is now so altered that the sedge may have gone. *C. pseudocyperus* is recorded for ditches at the west end of the Bog but I have not seen this species here though it grows in the nearby Hob Moor ponds.

BRYOLOGY (G. A. Shaw).—Reference to reports of previous Y.N.U. meetings at Askham Bog show that no serious attempt was made to prepare a complete list of the bryophytes, and there would appear to be ample scope for further work on these plants. The most interesting hepatics are *Riccia fluitans* and *Ricciocarpus natans* and the present distribution of these should be noted. The first county record of *Mnium rugicum* was made here by William Ingham in 1919.

The following have been noted at various times: *Tetraphis pelucida* (fruiting) *Mnium rugicum, Aulacomnium androgynum, Climacium dendroides, Leptodictyum riparium, Amblystegium varium, Drepanocladus aduncus, Campylium polygamum, Acrocladium cordifolium, Brachythecium velutinum, Pylaisia polyantha, Riccia fluitans, Ricciocarpus natans, Chiloscyphus polyanthos.*

FUNGI (W. G. Bramley).—Owing to the density of the vegetation few of the larger fungi are to be found except after fire. The micro species are plentiful, and no doubt many more are still to be discovered; much depends on being there at the right time. A search should be made to see if aecidia can be found again on *Ranunculus flammula* in the Ride. The Mycological Section has twice visited the Bog and reports can be found in *The Naturalist*, 1945, p. 147, for a Spring Foray and 1962, p. 115 for an Autumn Foray.

ORNITHOLOGY (Dr. E. W. Taylor).—The Birds of Askham Bog, omitting such species as the Hedge Sparrow and Wood Pigeon, the presence of which can be taken for granted.

Those that nest with fair regularity are : Sparrow-Hawk, Kestrel, Turtle Dove, Cuckoo, Tawny Owl. Carrion Crow, Magpie, Jay, Marsh- and Long-tailed Tit, Mistle Thrush, Grasshopper,-Reed-and Sedge Warblers, Blackcap, Common and Lesser Whitethroat, Willow-Warbler, Chiffchaff, Tree-Pipit, Linnet, Yellow- and Reed-Bunting.

More occasional visitors are: Little Grebe, Heron, Mallard, Water-Rail, Snipe, Woodcock, Great Spotted Woodpecker, Whinchat, Siskin, Redpoll, Bullfinch.

Rare visitors have been: Bittern (1874), Hen Harrier (1877), White-tailed Eagle (1958), and Wood-Warbler (1799).

LEPIDOPTERA (S. M. Jackson).—If any observing is to be done at dusk, or at night, some interesting moths may be observed. The best of these on the date of the meeting are: *C. senex* (Round-winged Muslin) for which there are no other known localities in Yorkshire today, *A. phragmites* (Fen Wainscot) may be just emerging, though it is a little early. *L. straminea* (Southern Wainscot) and *L. pudorina* (Striped Wainscot) should be well out, but it may be too late for *C. sparsata* (Dentated Pug) which occurs among the Yellow Loosestrife. The Wainscots occur amongst the reeds. By day there are not likely to be many interesting Lepidoptera, but both *P. bicolorata* (Blue-bordered Carpet) and *E. repandaria* (Bordered Beauty) can be disturbed by day, but unless it is an early season may have not yet emerged by July 20th.

There will be other more common species, probably Burnets and perhaps some larvae on birch and other trees.

ENTOMOLOGY (J. H. Flint).—Entomologists are asked to compile as full lists as possible for the report. The most profitable areas lie along the northern edge of the Bog from the central ride eastwards, and in the more open areas towards the railway line. The central ride itself is usually productive. The Bog is well known as a haunt of fenland species, some rarely met with elsewhere. Beetles have been particularly well worked here and coleopterists should consult the list compiled by Dr. J. H. Fidler (*Naturalist* 1949, 101-113) which records 331 species. Many have been added since that date and there are some obvious gaps (*Coccinella 7-punctata* L.). *Dromius sigma* Rossi and *Agabus undulatus* Schrank are well-known species from here and the galls of *Saperda populnea* L. are conspicuous on the stems of *Salix* at the northern end of the central ride and elsewhere. Other species include *Oodes helopioides* F., *Synchita humeralis* F., and the brilliant musk beetle, *Aromia moschata* L. The most notable bug to be taken here is *Capsus wagneri* Remane, only otherwise known in Britain from Wicken Fen. It should be sought on *Calamagrostis epigejos* and *C. canescens. Capsus ater* L. is common here, so careful search must be made for *Wagneri. Chilacis typhae* Perris occurs on Typha and *Gerris lateralis* Schummel may

be found among the dense vegetation in the dykes. Butterflies are not remarkable here, but evidence of the continuous existence of the Brimstone would be welcome. Diptera are only too numerous and unwary members are likely to become acquainted with the habits of clegs. The main sawfly season will be over, but such conspicuous species as *Xiphydria camelus* L., *Arge ciliaris* L. and *A. gracilicornis* Klug, besides the more common species of *Tenthredo* are likely to be in evidence.

Should the weather be fine, the sweep net will produce ample material and will be the best method of collecting. July is not the best time for aquatic species, but the pond net should give compensation in the event of rain.

SPIDERS (C. J. Smith).—During July, the Bog supports a population of spiders characteristic of many swampy areas in northern England. Several species of the *Clubionidae* and the *Theridiidae* can be observed, but it is a poor time of the year to obtain mature specimens of most spiders.

Of the rarer species, *Pirata hygrophilius* and *Araneus marmoreus* of the larger types should be found; while of the *Linyphiidae* the following less common species might be taken: *Entelecara omissa, Cornicularia kochi, Lophocarenum parallelum* and *Mengea warburtoni.*

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